

4-20-2016

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Wayne J. Ohnesorg

*University of Nebraska-Lincoln*

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EXPORT OF INSECT ECOSYSTEM SERVICES FROM HAYED NATIVE PRAIRIE

By

Wayne J. Ohnesorg

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Entomology

Under the Supervision of Professors Thomas E. Hunt and Robert J. Wright

Lincoln, Nebraska

May 2016

# EXPORT OF INSECT ECOSYSTEM SERVICES FROM HAYED NATIVE PRAIRIE

Wayne J. Ohnesorg, Ph.D.

University of Nebraska, 2016

Advisers: Thomas E. Hunt and Robert J. Wright

Natural areas, such as prairie, have the potential to provide the benefits of pest suppression and pollination for agricultural production. In Nebraska, prairie is often used for hay production. The impact of prairie hay production management practices on beneficial arthropods is not well understood. Four prairie hay meadows adjacent to row crop fields were selected in northeast Nebraska. The goal was to assess the impact of haying them on beneficial arthropods and the movement of natural enemies into adjacent crop fields. Three management practices were evaluated for hay harvested from prairie meadows one cut per growing season, two cuts per growing season, and an uncut control. During the course of this study, prairie hay yield and quality were compared between the one and two cutting treatments. The study was conducted from 2012 to 2014. Due to the extreme conditions of drought and heat in 2012, the meadow scheduled to be cut twice received only one cutting, and consequently, 2013 and 2014 data are the only years used in analyzing the results. Natural enemies in the row crop field were sampled using yellow sticky cards (YSC) and pitfall traps. Traps were placed 0, 5, 10, 25, and 50m from the interface of corn or soybean fields with the prairie hay meadow. Two additional sampling methods were used in the prairie hay meadow: sweep netting and blue cross vane traps. Natural enemies and beneficial arthropods were analyzed for abundance/activity density and community composition differences. Prairie hay meadow vegetation was sampled using 10 1m<sup>2</sup> quadrats per plot and the importance value for each plant taxa was

calculated. Crop field YSC natural enemy differences in abundance were at 25 and 50m. Pitfall differences in abundance were at 0, 5, and 10m. The uncut control had a greater abundance or activity density measured by pitfall traps. Community composition differences occurred at 10m or less into the crop field. Little discernable pattern was observed in the abundance/activity density of arthropod natural enemies or pollinators within the prairie hay plots. The same was observed for arthropod natural enemies or pollinators community composition. Vegetation community composition was significantly different between the uncut treatment and the one and two cutting treatments. This may be a result of buildup of plant litter that is typically annually removed. There was a significant difference in annual yield of prairie hay with the two cutting higher than the one cutting in 2014 and both years combined. The difference may be due to management at one site allowing an additional three weeks of growth in 2014. The two cutting treatment had significantly higher crude protein. There was no difference in hay acid detergent fiber or total digestible nutrients. Abundance and activity density results from the crop field suggest that undisturbed natural areas, such as prairie, could be a potential source of insect natural enemies.

## ACKNOWLEDGEMENTS

I would like to start by thanking my wife, Gina, for all of her love and encouragement during the past seven years. The love from my two children Garrett and Ezra has been an excellent motivation to complete the journey of completing a Ph.D.

This study and degree would not have been possible without my co-advisors Drs. Tom Hunt and Bob Wright. Thanks to their generous support the project was funded and guided. They also were willing to take me on as Ph.D. student.

This degree would not have been possible without the UNL Department of Entomology. First, they allowed me to pursue this endeavor as a pseudo-distance student. Secondly, they provided me with a desk, phone, and printer for my one semester spent on campus.

My committee has been an excellent resource throughout this endeavor. Their insights and advice has proved to be invaluable.

I greatly appreciate the landowners Mark Hilkemann, Woody Sobotka, Adam Venteicher, Ken Venteicher, and Aaron Zimmerman that allowed us to conduct this research on their land. They graciously worked with me to have a two cutting treatment in their hay meadows.

There was a lot of help from individuals on various pieces of this project. Summer Interns/technicians Landon Nelson, Jenna Brown, and Ellan Hasenkamp were indispensable for measuring out plots, digging pitfalls, taking samples, sorting samples,

and entering data. Special thanks are due to Robert Roselle for sorting all of the sweep net samples and identifying the arthropods to family.

Plant identifications provided by Dennis Smith, Joyce Reicks, and Gerry Steinhauer were greatly appreciated. Without them plant community comparisons for this entomologist would not have been possible.

I would like to thank Dr. Jessica Orlofske for helping to refresh my memory on coding in R and for assisting in the “adonis” PERMANOVA analyses of my data.

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### Chapter 3

Figure 1. Representation of the vegetation community by NMDS across  
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## CHAPTER 1

### INTRODUCTION

#### **Prairie Biome**

Prairie is the French word for grassland. In North America, prairie refers to the grassland biome that once extended from the southern portions of Manitoba, Saskatchewan, and Alberta to Texas, and from the Rocky Mountains to eastern Iowa (Savage 2004). Prairie is often recognized by the dominance of non-woody species. Dominant grasses in the biome include big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), buffalo grass (*Bouteloua dactyloides*), sideoats grama (*Bouteloua curtipendula*), indian grass (*Sorghastrum nutans*) and needle-and-thread grass (*Hesperostipa comata*) (Jones & Cushman 2004). There are a number of specialized forb species that are found in prairies, including milkweeds (*Asclepias* spp.), coneflowers (*Ratibita* spp. and *Echinacea* spp.), and compass plant and relatives (*Silphium* spp.) (Jones & Cushman 2004).

The prairie biome is often broken into the three main categories of tallgrass, mixedgrass, and shortgrass (Johnsgard 2007). Tallgrass prairie dominates in the eastern stretches of the prairie biome and runs along an east to west precipitation gradient to mixedgrass and then to shortgrass prairie in the western stretches (Jones & Cushman 2004). Depth to water table can be used to make further divisions (Coupland 1961).

Of the three main categories of prairie, tallgrass prairie is perhaps the most widely recognized (Hamilton 2005). Tallgrass prairie is often characterized by relatively flat topography, rich soil, and consistent rainfall that made it prime agricultural land and led

to its conversion since European settlement (Hamilton 2005). Remnant patches are scattered across its former reaches (Hamilton 2005). In Iowa, <0.1% of the original area remains (Smith 1998). In Nebraska, approximately 1.5 million hectares of tallgrass prairie still remain (Henebry et al. 2005). Northeast Nebraska contains both tall and mixed grass prairies. Tallgrass prairie in Nebraska contains >290 species of vascular plants while mixed grass contains >190 (Johnsgard 2007).

### **Prairie Hay**

Prairie can be managed as a resource for agriculture. This resource is often used for hay production in Nebraska (Baker et al. 1951) and elsewhere (Briggs et al. 1948, Embry et al. 1956, Moxon et al. 1951). Typically prairie hay is cut within 5 cm of the soil surface to maximize yield (Cooper 1956), a common practice. Past research in Nebraska has shown that prairie hay cut earlier in the growing season has a higher crude protein content than when cut later (Baker et al. 1951). Additional prairie hay studies in other states have shown similar results (Briggs et al. 1948, Cooper 1956, Embry et al. 1956, Moxon et al. 1951, Streeter et al. 1966). The decrease in protein content is correlated with the increase plant maturity as the growing season progresses (Baker et al. 1951, Briggs et al. 1948, Cooper 1956, Embry et al. 1956).

### **Natural Areas as a Source of Beneficial Insect Predators**

Ecosystem services are benefits that people receive from ecosystems (Chapin et al. 2009). These services include provisioning, regulating, and cultural services (Chapin et al. 2009). Insects contribute to these ecosystem services through various means and are involved in pollination, pest control, decomposition, and maintenance of wildlife species (Losey & Vaughan 2006). Losey and Vaughan (2006) estimate that the value of pest

control from native ecosystems for crop plants in the United States to be \$13.6 billion annually. They further estimate that of that amount \$4.6 billion is attributed to insects.

Hajek (2004) defines conservation biological control as modifying the environment or management practices to enhance natural enemies. Natural enemies are defined as “organisms normally killing arthropods that people consider to be pests, without human intervention” (Capinera 2004). One aspect of conservation biological control that has proven effective in reducing the impact of agricultural pests is habitat management (Landis et al. 2000). One specific example involves cereal crops bordered with *Phacelia tanacetifolia* (Hydrophyllaceae). These borders were linked to higher rates of aphid predation by syrphid fly (Syrphidae) larvae due to adult utilization of the floral resource (Sengonça & Frings 1988, Hickman & Wratten 1996). DeBach & Rosen (1991) and Menalled et al. (1999) documented that providing non-crop areas for habitat management can enhance natural enemies of crop pests by providing alternate hosts shelter (Gurr et al. 1998), and non-host food (Baggen et al. 1999, Wilkinson & Landis 2005).

Natural areas are important sources of floral resources, nesting material, and nesting substrate. These resources can vary among habitat types and across time (Westrich 1996). Isolation of habitat for pollinators has an effect on seed and fruit set (Kremen et al. 2002, Steffan-Dewenter & Tscharntke 1999). The value of pollination services for directly dependent crops in the United States is estimated at \$55.99 billion in 2009 (Calderone 2012). Indirectly dependent crops have an additional estimated value of \$16.02 billion in 2009 (Calderone 2012).

In recent years there has been an increasing interest in the benefits provided by maintaining naturally occurring plant communities in agricultural landscapes (Landis et al. 2000). Pollination services (Kremen et al. 2002, 2004) and the abundance of natural enemies (Cox et al. 2014, Gill et al. 2014, Ohnesorg 2008, Schmidt et al. 2011, Walton & Isaacs 2011) have been examined in recent studies. Native prairie plants have received much attention in the north central region of the United States (Cox et al. 2014, Gill et al. 2014, Schmidt et al. 2011, Walton & Isaacs 2011), since they thrive in areas of intensive agricultural production. Cox et al. (2014) and Gill et al. (2014) both found that vegetative borders around crop fields could be enhanced for natural enemies with flowering plants. Of particular interest to them in their studies were native prairie plants. However, neither was able to demonstrate increased predator abundance or predation in that adjacent row crop fields.

Some native prairie plants have been assessed for their attractiveness to natural enemies (Fiedler & Landis 2007a). They identified 24 native plant species that were considered to have high attraction to natural enemies. Many were more attractive than some commonly recommended Eurasian species. The specific plant characteristics that attract them have also been investigated (Fiedler & Landis 2007b). Floral area, period of peak bloom, maximum flower height, and decreasing corolla width were important characteristics. However, for a given time of the season, a selection based on floral area, preferably larger, alone had the potential to increase natural enemy abundance. Given these findings, it is possible to enhance habitat for natural enemies by including these native plants.

Growing and managing prairie hay meadows has the potential to beneficially impact both natural enemies and pollinators. A better understanding of how to manage natural areas for agricultural production and beneficial insect conservation is the subject of the studies reported in this dissertation.

### **Hypotheses & Objectives**

#### Chapter 2

Hypothesis – Prairie hay fields are a source of natural enemies for adjacent row crop fields.

#### Objectives

- Determine if natural enemies move into adjacent crop fields when prairie hay fields are harvested.
- Determine how far natural enemies move into adjacent crop fields from prairie hay fields.

#### Chapter 3

Hypothesis – There is an impact of haying native prairie on beneficial arthropods.

#### Objectives

- Determine the impact of haying regime on arthropod natural enemies.
- Determine the impact of haying regime on pollinators.

#### Chapter 4

Hypothesis – There is a difference in quantity and quality of prairie hay between one and two cuttings per growing season.

## Objectives

- Determine differences in hay quality measured in nutritive value.
- Determine differences in quantity of hay produced.

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## CHAPTER 2

### IMPACT OF HAYING NATIVE PRAIRIE ON BENEFICIAL ARTHROPODS

#### **Abstract**

Natural areas have the potential to provide the benefits of pest suppression and pollination for agricultural production. One such natural area is tallgrass prairie. Cutting tallgrass prairies for hay may impact the availability of insects that are beneficial for agriculture. Four prairie hay meadows were selected in northeast Nebraska to sample insect natural enemies and pollinators. Three treatments were implemented: one cut per growing season, two cuts per growing season, and an uncut control. The study was conducted in 2012-2014. Due to drought conditions in 2012, only data from 2013 and 2014 are reported. Four sampling methods were implemented: yellow sticky cards, pitfall traps, sweep net, and blue cross vane traps. Vegetation was sampled using ten 1m<sup>2</sup> quadrants per plot and the importance value for each plant taxa was calculated. We observed no significant, discernable patterns in the abundance or activity density of arthropod natural enemies or pollinators. Community composition of arthropod natural enemies and pollinators also had no discernable pattern. Vegetation community composition was significantly different ( $P < 0.05$ ). However the difference may be due to the build up of plant litter in a system that has it annually removed.

#### **Introduction**

Native prairies in Northeast Nebraska are often utilized for agricultural purposes, primarily livestock pasture and/or hay production. Native-crop habitats can serve as important reserves for beneficial insects. Previous research has shown that prairies host a number of invertebrate predators and parasitoids (natural enemies) of economically

damaging pest insects (Cox et al. 2014, Gill et al. 2014, Ohnesorg 2008, Schmidt et al. 2011, Walton & Isaacs 2011). A number of these native plants have been demonstrated to be attractive to arthropod natural enemies (Fiedler & Landis 2007). Kremen et al. (2004) demonstrated that non-crop habitat was important for conservation of bee pollinators. The impact of cutting hay on arthropod natural enemies and pollinators in prairies is not well understood.

The prairie biome is often broken into the three main categories of tallgrass, mixedgrass, and shortgrass. Northeast Nebraska contains both tall and mixed grass. The plant community of prairies is a combination of grasses and forbs. Tallgrass prairie in Nebraska has been documented to contain >290 species of vascular plants while mixed grass contained >190 (Johnsgard 2007). This resource is frequently used for hay production in Nebraska (Baker et al. 1951).

Natural areas, such as prairies, have the capacity to provide benefits to agricultural production (Kremen et al. 2002, 2004, Landis et al. 2000). Utilizing prairies for hay production has the potential to impact these benefits provided by natural enemies and pollinators. The impact of managing natural areas for agricultural production on natural enemies and pollinators is not well understood.

Our hypothesis was that haying native prairie has an impact on beneficial arthropods. The objectives for this study were to (1) determine impact of haying regime on arthropod natural enemies; and (2) determine impact of haying regime on pollinator abundance.

## **Methods**

In 2012, four tall grass prairie sites were selected for study through 2014 (Figure 1). Two sites were located in Pierce County Nebraska. One site, designated as “V,” is a wet meadow with dominant soil types of Elsmere loamy fine sands and Loup fine sandy loam soils (NRCS 2013). The second site, designated as “H,” was a hilltop meadow with dominant soil types of Thurman loamy fine sands, Hadar loamy fine sands soils, and Hadar-Thurman complex loamy fine sands (NRCS 2013). Two additional sites were located in Holt County Nebraska. Both sites are wet hay meadows. The first site, designated as “S1,” had dominant soil types of Elsmere-Ipage loamy fine sands and Elsmere fine sandy loam soils (NRCS 2013). The second site, designated as “S2,” had dominant soil types of Elsmere-Ipage loamy fine sands, Elsmere fine sandy loam, and Elsmere loamy fine sands soils (NRCS 2013). Each prairie was cut for hay once each year prior to the study.

Three 100x81m (0.81 ha) plots/site were established one for each of three treatments: hay cut once per growing season, hay cut twice per growing season, and a uncut control. They were arranged in a randomized complete block design. Each site was treated as a block with one replication of the treatments. Our experimental unit was the plot. Plot size was chosen based on preliminary data suggesting they would be large enough for bee sampling (Ohnesorg unpublished data). At the start of the study the two locations in Holt County were under “Abnormally Dry” conditions and the two in Pierce County were not (Heim 2012). By the end of the 2012 field season, all locations were under “Extreme Drought” (Brewer 2012). Due to the drought conditions, only 2013 and 2014 data are included in these analyses. With the lingering drought at the Holt County

locations, all two cutting plots were converted to additional single cutting plots for the 2013 and 2014 growing seasons.

Total annual precipitation was quite variable during the study period. According to the Nebraska Rainfall Assessment and Information Network ([nerain.dnr.ne.gov](http://nerain.dnr.ne.gov)), annual precipitation for Holt County locations was approximately 40.41, 78.98, and 54.31 cm for 2012, 2013, and 2014, respectively. Site “V” in Pierce County annual precipitation was 27.41, 65.25, and 68.07 cm for 2012, 2013, and 2014, respectively. Site “H” in Pierce County annual precipitation was 38.76, 60.25, and 60.12 cm for 2012, 2013, and 2014, respectively. The 30-year (1981-2010) historical mean annual precipitation for the Holt County locations is 62.71cm and the Pierce County sites are 70.38cm (PRISM 2015).

Natural enemy sampling occurred in the center of each plot. One yellow sticky card (YSC) was suspended on a wooden post at plant height. Two pitfall traps, using 532 ml plastic drink cups, were installed one meter on either side of the YSC post. Each pitfall trap was filled with approximately 2.5 cm from the bottom with propylene glycol when deployed. Pitfall traps and YSCs were deployed for 24 hours. Timing of sampling was prior to cutting (PRE); one, two, & three weeks after first cutting of two cut treatment (Post 1–Post 3); and one, two, & three weeks after first cutting of one cut treatment and second cutting of two cut treatment (Post 4–Post 6). Sweep nets were also used to sample beneficial insects. Each sweep net sample consisted of 20 pendulum sweeps and they were taken when pitfall traps and YSCs were collected in the field.

Beneficial arthropods collected using YSC were identified to family. Spiders were only identified to order (Araneae). Coccinellidae were identified to species. Pitfall trap

collected beneficial arthropods were identified to family, including spiders. Harvestmen were identified to order (Opiliones). Sweep net collected beneficial arthropods were all identified to family.

Bees were sampled using blue cross vane traps (BCVT; SpringStar™ LLC, Woodinville, WA, USA). These traps have been demonstrated to be effective at attracting non-*Apis* bees (Stephen & Rao 2005), even in the presence of floral competition (Stephen & Rao 2007). One BCVT was placed in the center of each treatment. Traps were suspended on poles at the height of the vegetation except after hay had been cut when was placed at its lowest upright position. Traps were deployed for 24 hours (modified from Stephen & Rao 2007). Sampling with BCVT was conducted concurrently with natural enemy sampling. Traps catches were stored in plastic zip-top bags and placed in a freezer until they could be sorted. Bees were counted and identified to genus using online keys (Droege et al. 2015). A voucher collection will be in the Nebraska State Museum Insect Collection.

Abundance of beneficial arthropods (response variable) sampled by YSC, sweep net, and BCVT were analyzed using an analysis of variance (ANOVA) with a repeated measures for a time series using PROC MIXED with a “slice” for analysis of each sampling time point with a PDIFF and Satterthwaite denominator degrees of freedom for means separation is SAS (SAS Institute, Cary, NC). Activity density of beneficial arthropods (response variable) in pitfall traps was analyzed in the same manner. However, the two pitfall traps were treated as subsamples and averaged to create a composite activity density for analysis.

Vegetation sampling was conducted at each site in 2013 and 2014. Vegetation was surveyed with a 1m<sup>2</sup> quadrat at 10m intervals for a total of 10 quadrats per plot. The importance value (Curtis and Macintosh 1951), sum of the relative percent cover and relative frequency, was calculated for each plant taxa at each plot.

Differences in community composition were compared using a permuted multivariate analysis of variance (PERMANOVA) within the “adonis” function in the vegan package (Oksanen et al. 2013) of R statistical software (R Core Team 2013). Taxa used were the level of identification for each sampling method. Total abundance was used for YSC, sweep net, and BCVT sampling. Activity density was used for pitfall traps. The calculated importance value was used for the vegetation sampling and only plants occurring in more than one plot were included in the analysis. Each sampling method was analyzed separately by timing of hay cutting and treatment using the Bray-Curtis distance metric as it well suited for ecological data (Faith et al. 1987). This distance metric incorporates both diversity and abundance. Each PERMANOVA had 999 permutations. Beneficial arthropods were used in the community analysis at the taxonomic levels described above for each sampling method

An additional ordination analysis, non-metric multidimensional scaling (NMDS), was also used to visually compare the vegetation communities across the three treatments. An NMDS analysis summarizes relationships between all pairs of plant taxa data in order to represent it in multiple dimensions as distances, such that the closer two points are, the more similar they are (i.e., same species composition; Kenkel and Orlóci 1986). We utilized the Bray- Curtis distance measure for this analysis as well. Data were analyzed

and convex hulls were drawn for each treatment to visualize the differences in species composition using R statistical software (R Core Team 2013).

## Results

Varying numbers of natural enemy and other beneficial arthropod taxa were collected with YSC, pitfall traps, sweep nets, and BCVT. A total of 19 natural enemy taxa were collected by YSC in 2013 and 2014 (Table 1). Pitfall traps collected 33 beneficial arthropod taxa in 2013 and 2014 (Table 2). Sweep net collected 29 different families (Table 3). Blue cross vane traps collected 23 genera of bees (Table 4).

Treatment effects of hay cutting were not significant ( $P>0.05$ ) for YSC, pitfall traps, sweep net, and BCVT in 2013, 2014, or 2013/2014 (Tables 5-8). Mean with standard error were calculated for abundance of beneficial arthropods collected with YSC, sweep net, and BCVT (Table 9). Also, the mean with standard error was calculated for activity density of beneficial arthropods collected with pitfall traps (Table 9).

Analysis of community composition yielded a single significant difference ( $P<0.05$ ) from among the four arthropod sampling methods (Table 10). The YSC, pitfall, and BCVT methods had no significant differences ( $P>0.05$ ) in community composition. Sweep net sampling had the only significantly different ( $P<0.05$ ) community composition comparison. It was from 2014 one week after the first cutting of the two cutting treatment had been conducted. Vegetation data was only analyzed as a combination of both years. The community composition analysis indicates that the vegetation communities are significantly different ( $P<0.05$ ) between the treatments (Table 10). The differences are visualized through the NMDS analysis (Figure 2).



## Discussion

There was no pattern in the abundance, activity density, or community composition differences of beneficial arthropods observed during this study. A number of factors may have contributed to these observations. One factor may have been the exceptional drought that experience in 2012. Two of our four study locations needed to drop the two cuttings per growing season treatment due to the drought in 2012. Another factor may be that the arthropod community found in the prairie hay meadows has adapted to annual harvest of the vegetation. Yet another factor may have been plot size. Preliminary data suggesting plot size may not have lead to adequate size. Solitary bees have been recorded to forage between 0.15 and 1.4km from their nest (Gathman & Tscharntke 2002, Zurbuchen et al. 2010). This is in contrast to *Apis mellifera* (Hymenoptera: Apidae) that has been recorded >10km from the hive (Beekman & Ratnieks 2000). It has also been noted that YSC collect highly mobile natural enemies and our plots may not have been adequately sized for that sampling method (Schmidt et al. 2008).

However, our plot size (81x100m; 0.81ha) should have been sufficient for pitfall trap sampling. Other studies have used much smaller plots with pitfall traps with success (e.g. 3x3m; Bommarco & Fagan 2002). Sweep net sampling has also been used in smaller plots than ours (e.g. 0.5ha; Cox et al. 2014).

The significance of the community composition in vegetation is not surprising. The uncut treatments had collected two years of plant litter by 2014. These prairie hay meadows have been managed for hay production for an extended period of time. Current plant communities would be expected to be adapted for removal of vegetative biomass

above the ground. It should be noted that the NMDS analysis seems to indicate that plant communities found in the one and two cutting treatments are a subset of the community found in the uncut treatment (Figure 2).

Further investigation is needed to ascertain if there is any impact on beneficial arthropods in prairie hay fields due to hay cutting. Future work may need to incorporate a larger sample size in terms of the number of sites. Avoidance of exceptional droughts conditions may also prove to be useful.

### Acknowledgments

We greatly appreciate the landowners that allowed us to conduct this research on their land and who graciously worked with us to have a two cutting treatment. Specifically we would like to thank M. Hilkemann, W. Sobotka, Adam Venteicher, and Ken Venteicher. We appreciate field and lab assistance from L. Nelson, J. Brown, and E. Hasenkamp. Plant identification by G. Steinhauer was greatly appreciated.

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**Table 1.** Natural enemies collected using yellow sticky cards along with the total collected between 2013 and 2014

Order	Family	Species	Total Collected
Araneae			9
Coleoptera	Coccinellidae	<i>Braciacantha ursina</i>	1
		<i>Coccinella septumpunctata</i>	12
		<i>Cycloneda munda</i>	2
		<i>Hippodamia convergens</i>	13
		<i>Hippodamia parenthesis</i>	1
Diptera	Dolichopodidae		224
	Syrphidae		71
Hemiptera	Anthocoridae	<i>Orius insidiosus</i>	3
Hymenoptera	Parasitic wasps <sup>1</sup>		1,039
	Tiphiidae		1
Neuroptera	Chrysopidae		26

<sup>1</sup>Hymenoptera within the “parasitica”

**Table 2.** Beneficial arthropods collected using pitfall traps collected between 2013 and 2014 and the composite average between the two subsamples

Class	Order	Family	Total Collected
Arachnida	Araneae	Anypheanidae	0.5
		Dictynidae	0.5
		Gnaphosidae	22.5
		Linyphiidae	1.5
		Lycosidae	102.0
		Oxyopidae	1.0
		Philodramidae	0.5
		Pisauridae	0.5
		Salticidae	1.5
		Tetragnathidae	0.5
		Thomisidae	18.5
	Opiliones		30.5
Insecta	Coleoptera	Carabidae	54.0
		Histeridae	13.5
		Staphylinidae	15.0
	Diptera	Bombyliidae	1.5
	Hemiptera	Geocoridae	17.5
	Hymenoptera	Apoidea <sup>1</sup>	18.5
		Formicidae	373.5
		Mutillidae	7.5
		Scoliidae	1.0
		Sphecidae	11.5
		Vespidae	0.5
		Parasitic wasp <sup>2</sup>	13.0

<sup>1</sup>Includes all families of bees<sup>2</sup>Hymenoptera within the “parasitica”

**Table 3.** Natural enemies collected using a sweep net along with the total collected between 2013 and 2014

Order	Family	Total Collected
Araneae	Araneidae	3
	Oxyopidae	1
	Philodramidae	3
	Salticidae	6
	Tetragnathidae	4
	Thomisidae	33
	Unidentified spider	2
Coleoptera	Carabidae	3
	Cleridae	1
	Coccinellidae	20
Diptera	Asilidae	4
	Syrphidae	59
Hemiptera	Berytidae	8
	Geocoridae	6
	Nabidae	16
	Reduviidae	2
Hymenoptera	Braconidae	7
	Formicidae	76
	Ichneumonidae	5
	Mutillidae	1
	Sphecidae	1
Neuroptera	Chrysopidae	3

**Table 4.** Bee genera and number of individuals collected during sampling with blue cross vane traps.

Genus	Number Collected		
	2013	2014	Total
<i>Agapostemon</i>	118	114	232
<i>Anthophora</i>	21	11	32
<i>Apis</i>	8	25	33
<i>Augochlorella</i>	2	4	6
<i>Augochloropsis</i>	1	3	4
<i>Bombus</i>	25	38	63
<i>Coelioxys</i>	0	1	1
<i>Eucera</i>	151	7	158
<i>Epeoloides</i>	1	0	1
<i>Florilegus</i>	3	77	80
<i>Halictus</i>	26	41	67
<i>Hoplitis</i>	9	6	15
<i>Lasioglossum</i>	61	81	142
<i>Megachile</i>	5	10	15
<i>Melissodes</i>	128	733	861
<i>Melitoma</i>	0	5	5
<i>Osmia</i>	0	2	2
<i>Peponapis</i>	1	8	9
<i>Nomada</i>	1	0	1
<i>Sphecodes</i>	0	2	2
<i>Svastra</i>	25	36	61
<i>Triepeolus</i>	3	2	5
<i>Xeromelicta</i>	0	1	1
Totals	590	1,206	1,796



**Table 5.** ANOVA revealing the response of natural enemies collected with YSC to hay cutting treatments for 2013, 2014, and 2013/2014 combined.

Year	Variable	DF <sup>1</sup>	F	P
2013	Site	3, 42	0.37	0.7744
	Timing	6, 42	0.30	0.9324
	Treatment	2, 42	0.34	0.7113
2014	Site	3, 38	4.35	0.0099
	Timing	6, 38	2.13	0.0723
	Treatment	2, 38	0.78	0.9737
2013/2014	Year	1, 103	2.45	0.1206
	Site	3, 103	1.55	0.2056
	Timing	6, 103	0.96	0.4547
	Treatment	2, 103	0.29	0.7467

<sup>1</sup> Degrees of freedom, numerator followed by denominator degrees of freedom

**Table 6.** ANOVA revealing the response of natural enemies collected with pitfall traps to hay cutting treatments for 2013, 2014, and 2013/2014 combined.

Year	Variable	DF <sup>1</sup>	F	P
2013	Site	3, 42	1.27	0.2977
	Timing	6, 42	1.29	0.2827
	Treatment	2, 42	0.57	0.5695
2014	Site	3, 34	1.15	0.3432
	Timing	6, 34	0.52	0.7891
	Treatment	2, 34	1.28	0.2921
2013/2014	Year	1, 99	26.25	<0.0001
	Site	3, 99	1.56	0.2043
	Timing	6, 99	0.57	0.7553
	Treatment	2, 99	1.91	0.1536

<sup>1</sup> Degrees of freedom, numerator followed by denominator degrees of freedom

**Table 7.** ANOVA revealing the response of beneficial arthropods collected with sweep nets to hay cutting treatments for 2013, 2014, and 2013/2014 combined.

Year	Variable	DF <sup>1</sup>	F	P
2013	Site	3, 42	3.93	0.0146
	Timing	6, 42	0.68	0.6652
	Treatment	2, 42	0.25	0.7781
2014	Site	3, 38	1.75	0.1730
	Timing	6, 38	4.44	0.0017
	Treatment	2, 38	0.50	0.6102
2013/2014	Year	1, 103	4.49	0.0053
	Site	3, 103	1.34	0.2494
	Timing	6, 103	3.64	0.0026
	Treatment	2, 103	0.10	0.9031

<sup>1</sup> Degrees of freedom, numerator followed by denominator degrees of freedom

**Table 8.** ANOVA revealing the response of bees collected with blue cross vane traps to hay cutting treatments for 2013, 2014, and 2013/2014 combined.

Year	Variable	DF <sup>1</sup>	F	P
2013	Site	3, 43	38.30	<0.0001
	Timing	6, 43	3.80	0.0040
	Treatment	2, 43	0.90	0.2194
2014	Site	3, 38	5.34	0.0036
	Timing	6, 38	4.49	0.0016
	Treatment	2, 38	0.43	0.6535
2013/2014	Year	1, 104	3.58	0.0611
	Site	3, 104	8.75	<0.0001
	Timing	6, 104	3.80	0.0018
	Treatment	2, 104	0.87	0.7039

<sup>1</sup> Degrees of freedom, numerator followed by denominator degrees of freedom

**Table 9.** Mean  $\pm$  SEM of beneficial arthropods sampled using yellow sticky cards (YSC), pitfall traps, sweep net, and blue cross vane traps (BCVT) prior to cutting prairie hay and after cutting. Comparisons marked with “NS” are not significantly different ( $P>0.05$ )

Year	Timing <sup>1</sup>	Treatment	YSC	Pitfall	Sweep Net	BCVT
2013						
	Pre	0x	4.25 $\pm$ 1.49 NS	4.13 $\pm$ 2.81 NS	3.25 $\pm$ 1.52 NS	8.00 $\pm$ 5.21 NS
		1x	6.00 $\pm$ 1.13	3.42 $\pm$ 0.70	5.00 $\pm$ 2.33	5.86 $\pm$ 2.10
		2x	4.50 $\pm$ 3.50	4.25 $\pm$ 3.89	1.00 $\pm$ 1.41	5.50 $\pm$ 6.36
	Post 1	0x	4.00 $\pm$ 1.00 NS	2.50 $\pm$ 0.71 NS	3.00 $\pm$ 2.83 NS	6.50 $\pm$ 6.36 NS
		1x	3.00 $\pm$ 1.00	2.25 $\pm$ 1.77	2.00 $\pm$ 2.83	12.50 $\pm$ 17.68
		2x	8.00 $\pm$ 3.00	1.75 $\pm$ 2.47	1.00 $\pm$ 0.00	13.50 $\pm$ 17.68
	Post 2	0x	4.50 $\pm$ 2.50 NS	6.00 $\pm$ 3.54 NS	2.50 $\pm$ 3.54 NS	22.00 $\pm$ 28.28 NS
		1x	6.00 $\pm$ 5.00	2.00 $\pm$ 0.00	1.50 $\pm$ 0.71	18.50 $\pm$ 21.92
		2x	5.50 $\pm$ 2.50	4.00 $\pm$ 0.00	2.50 $\pm$ 3.54	20.00 $\pm$ 24.04
	Post 3	0x	4.00 $\pm$ 1.00 NS	2.25 $\pm$ 0.35 NS	2.50 $\pm$ 2.12 NS	19.50 $\pm$ 24.75 NS
		1x	5.00 $\pm$ 0.00	4.25 $\pm$ 3.89	3.50 $\pm$ 0.71	2.50 $\pm$ 3.54
		2x	11.50 $\pm$ 6.50	1.50 $\pm$ 1.41	0.50 $\pm$ 0.71	19.00 $\pm$ 22.63
	Post 4	0x	5.75 $\pm$ 2.43 NS	1.50 $\pm$ 0.85 NS	0.00 $\pm$ 0.00 NS	6.75 $\pm$ 2.72 NS
		1x	3.67 $\pm$ 1.09	2.33 $\pm$ 0.52	2.17 $\pm$ 0.96	4.50 $\pm$ 2.09
		2x	7.00 $\pm$ 1.00	0.50 $\pm$ 0.00	2.50 $\pm$ 3.54	3.00 $\pm$ 4.24

<sup>1</sup>Timings were prior to cutting (PRE); one, two, & three weeks after first cutting of two cut treatment (Post 1–Post 3); and one, two, & three weeks after first cutting of one cut treatment and second cutting of two cut treatment (Post 4–Post 6)

**Table 9.** Continued

Year	Timing <sup>1</sup>	Treatment	YSC	Pitfall	Sweep Net	BCVT
2014	Post 5	0x	2.75±0.85 NS	3.00±1.22 NS	1.50±1.00 NS	6.75±4.20 NS
		1x	8.50±5.90	2.42±0.65	1.83±0.52	5.00±2.97
		2x	2.50±0.50	1.75±1.77	2.00±0.00	8.50±12.02
	Post 6	0x	3.00±1.22 NS	3.25±1.83 NS	1.25±1.09 NS	8.25±5.72 NS
		1x	6.17±1.82	3.17±1.47	4.83±2.64	7.83±4.06
		2x	5.00±0.00	1.50±1.41	1.00±0.00	12.00±14.14
	Pre	0x	5.75±3.18 NS	13.75±6.28 NS	3.50±2.56 NS	26.75±19.88 NS
		1x	8.60±3.38	8.25±5.11	3.20±1.92	3.00±1.22
		2x	4.00±5.66	6.67±0.74	7.50±4.95	27.00±23.00
	Post 1	0x	2.00±2.83 NS	6.50±0.00 NS	3.50±0.71 NS	2.00±1.41 NS
		1x	0.00±0.00	6.25±1.77	1.50±0.71	3.50±4.95
		2x	3.50±2.12	6.50±2.83	2.50±2.12	15.5±21.92
	Post 2	0x	4.00±4.24 NS	3.75±2.47 NS	4.50±3.54 NS	1.50±0.71 NS
		1x	0.00±0.00	6.75±2.47	1.50±0.71	0.00±0.00
		2x	1.00±1.41	2.50±0.71	1.00±1.41	0.50±0.71
	Post 3	0x	7.00±4.24 NS	18.25±9.55 NS	1.00±0.00 NS	1.00±0.00 NS
		1x	4.50±2.12	7.50±2.12	1.00±1.41	1.00±0.00
		2x	3.50±4.95	2.50±0.71	1.50±0.71	1.50±2.12

**Table 9.** Continued

Year	Timing <sup>1</sup>	Treatment	YSC	Pitfall	Sweep Net	BCVT
	Post 4	0x	3.75±0.73 NS	20.75±13.28 NS	0.25±0.29 NS	38.00±30.36 NS
		1x	1.20±0.42	6.13±2.20	1.60±0.71	40.40±38.58
		2x	2.50±2.12	4.33±1.95	0.00±0.00	127.50±122.50
	Post 5	0x	1.75±0.99 NS	7.13±2.37 NS	1.50±1.00 NS	29.75±12.78 NS
		1x	2.60±0.91	5.63±1.19	0.20±0.22	19.20±7.09
		2x	2.50±2.12	5.33±2.84	0.50±0.71	35.50±14.50
	Post 6	0x	4.75±4.75 NS	5.25±2.03 NS	0.50±0.58 NS	7.00±3.23 NS
		1x	2.40±1.64	7.25±0.90	1.00±0.61	4.20±1.78
		2x	10.00±14.14	10.50±7.18	1.00±1.41	16.50±0.50
	Combined Pre	0x	5.00±1.58 NS	8.94±3.53 NS	3.38±1.28 NS	17.38±9.59 NS
		1x	7.18±1.55	5.35±1.93	3.10±0.96	4.67±1.31
		2x	4.25±2.51	5.70±1.23	6.40±3.17	16.25±13.17
	Post 1	0x	3.00±1.25 NS	4.50±1.35 NS	3.25±0.99 NS	4.25±2.64 NS
		1x	1.50±1.11	4.25±1.57	1.75±0.99	8.00±6.82
		2x	5.75±2.18	4.13±2.02	1.75±0.87	14.50±9.41
	Post 2	0x	4.25±1.85 NS	4.88±1.62 NS	3.50±1.80 NS	11.75±11.65 NS
		1x	3.00±3.09	4.38±1.79	1.50±0.33	9.25±9.56
		2x	3.25±1.96	3.25±0.55	1.75±1.36	10.25±10.32
	Post 3	0x	5.50±1.80 NS	10.25±6.21 NS	1.75±0.87 NS	10.25±10.30 NS
		1x	4.75±0.73	5.88±1.83	2.25±0.99	1.75±1.28
		2x	7.50±4.38	3.50±2.00	1.00±0.47	10.25±9.56

**Table 9.** Continued

Year	Timing <sup>1</sup>	Treatment	YSC	Pitfall	Sweep Net	BCVT
	Post 4	0x	4.75±1.31 NS	11.13±6.90 NS	0.13±0.13 NS	22.38±14.51 NS
		1x	2.55±0.74	3.85±1.02	1.91±0.57	20.82±16.57
		2x	4.75±1.72	2.80±1.43	1.25±1.44	65.25±71.13
	Post 5	0x	2.25±0.63 NS	5.06±1.42 NS	1.50±0.61 NS	18.25±7.41 NS
		1x	5.82±3.40	3.70±0.77	1.09±0.39	11.45±3.97
		2x	2.50±0.75	3.90±1.78	1.25±0.55	22.00±11.99
	Post 6	0x	3.88±2.15 NS	4.25±1.24 NS	0.88±0.55 NS	7.63±2.83 NS
		1x	4.45±1.34	4.80±1.12	3.09±1.49	6.18±2.24
		2x	7.50±5.00	6.90±4.37	1.00±0.47	14.25±4.95



**Table 10.** Significant ( $P < 0.05$ ) differences in community composition for yellow sticky cards (YSC), pitfall traps, sweep net, bees with blue cross vane traps (BCVT), and plant survey with degrees of freedom (DF), F-value, and P-value.

Method	Year	Timing <sup>1</sup>	DF	F-value	P-value
YSC	None				
Pitfall	None				
Sweep Net	2014	Post 1	2, 2	2.419	0.025
BCVT	None				
Plant Survey	Combined	NA	2, 12	2.2408	0.029

<sup>1</sup>Timings were prior to cutting (PRE); one, two, & three weeks after first cutting of two cut treatment (Post 1–Post 3); and one, two, & three weeks after first cutting of one cut treatment and second cutting of two cut treatment (Post 4–Post 6)

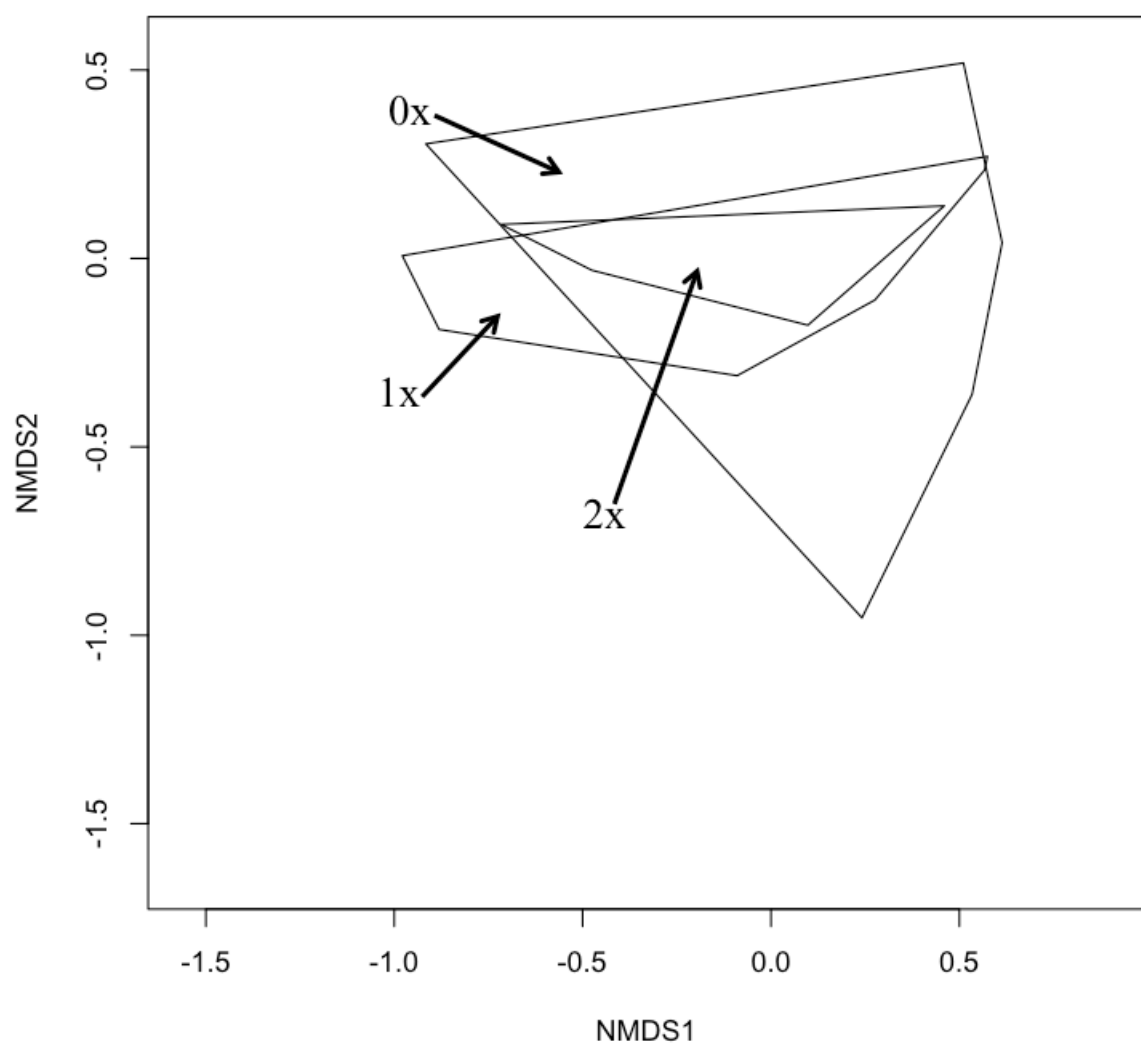
**Figure 1.** Aerial photographs of the 23.31 km<sup>2</sup> around each of the four study sites: (A) V, (B) H, (C) S1, and (D) S2. Images produced using Google Earth (v7.1.5.1557, Google, Mountain View, CA).

**Figure 2.** Representation of the vegetation community by NMDS across the three treatments from combined years (2013 and 2014). Non-overlapping hulls indicate different species compositions.

Figure 1.



Figure 2.



## CHAPTER 3

### MOVEMENT OF INSECT NATURAL ENEMIES FROM PRAIRIE HAY FIELDS TO ADJACENT CROP FIELDS

#### **Abstract**

Native vegetation can be a source of natural enemies that can suppress arthropod pests in crop fields. Four prairie hay meadows were selected in northeast Nebraska to investigate as a source of natural enemies for adjacent to crop fields. Three treatments were implemented: one cut per growing season (typical producer management), two cuts per growing season, and an uncut control. The study was conducted for three growing seasons, and, due to drought conditions in 2012, only data from 2013 and 2014 are reported. Natural enemies were sampled using yellow sticky cards (YSC) and pitfall traps. Samples were taken at 0, 5, 10, 25, and 50m into the crop field from the edge with the prairie hay meadow. The abundance and community composition were analyzed for differences at each distance between the treatments. Significant differences were observed in the abundance of natural enemies sampled with YSC and activity density sampled with pitfall traps. The YSC differences were at 25 and 50m into the crop field while pitfall differences were at 0, 5, and 10m into the crop field. Most of the differences involved a greater abundance or activity density in the uncut control compared to the one or two cutting treatments. Differences in community composition for both sampling methods were observed at 0, 5, and 10m into the crop field. Abundance and activity density results support previous research showing that undisturbed natural areas can be a potential source of insect natural enemies.

#### **Introduction**

There has been an increasing interest in the benefits provided from natural communities to agricultural landscapes (Landis et al. 2000). Studies have assessed benefits for pollination services (Kremen et al. 2002, 2004) or abundance of natural enemies (Cox et al. 2014, Gill et al. 2014, Ohnesorg 2008, Schmidt et al. 2011, Walton & Isaacs 2011) natural areas. Of the natural areas, prairie have received much attention in the north central region of the United States (Cox et al. 2014, Gill et al. 2014, Schmidt et al. 2011, Walton & Isaacs 2011). Some native prairie plants have been assessed for their attractiveness to natural enemies (Fiedler & Landis 2007a) with many being more attractive to natural enemies than some often recommended Eurasian species. The specific plant characteristics that are attractive to natural enemies have also been assessed (Fiedler & Landis 2007b).

Prairie is commonly classified into three main categories of tallgrass, mixedgrass, and shortgrass. Northeast Nebraska contains both tall and mixed grass. The plant community of prairies is a combination of grasses and forbs. Tallgrass prairie in Nebraska has been documented to contain >290 species of vascular plants while mixed grass contained >190 (Johnsgard 2007). This resource is used for hay production in Nebraska (Baker et al. 1951).

Other studies have noted that one crop can be a source of natural enemies for another crop. Bommarco & Fagan (2002) noted that ground beetles move into annual barley from perennial ley. Prasifka et al. (2004) demonstrated that grain sorghum (*Sorghum bicolor* (L.)) is a source of natural enemies during the early growth stages of cotton (*Gossypium hirsutum* L.). These last results are related to movement due to maturity rather than harvest of the crop. Studies referring to prairies as a source of natural

enemies have focused on them being areas managed as natural instead of agricultural (Cox et al. 2014, Gill et al. 2014, Schmidt et al. 2011, Walton & Isaacs 2011). With a history of prairie being used for hay production in Nebraska (Baker et al. 1951), it is not clear and data are limited on the impact that hay cutting has on natural enemies in these native prairie systems.

Our hypothesis for this study is that prairie hay fields are a source of beneficial arthropods for adjacent row crop fields. The objectives for this study were to (1) determine if natural enemies move into adjacent crop fields when prairie hay fields are cut for hay; and (2) if so, determine how far those natural enemies move into adjacent crop fields.

### **Methods**

In 2012, four tall grass prairie sites were selected for study through 2014 (Figure 1). Two sites were located in Pierce County Nebraska. One site, designated as “V,” is a wet meadow with dominant soil types of Elsmere loamy fine sands and Loup fine sandy loam soils (NRCS 2013). The second site, designated as “H,” was a hilltop meadow with dominant soil types of Thurman loamy fine sands, Hadar loamy fine sands soils, and Hadar-Thurman complex loamy fine sands (NRCS 2013). Two additional sites were located in Holt County Nebraska. Both sites are wet hay meadows. The first site, designated as “S1,” had dominant soil types of Elsmere-Ipage loamy fine sands and Elsmere fine sandy loam soils (NRCS 2013). The second site, designated as “S2,” had dominant soil types of Elsmere-Ipage loamy fine sands, Elsmere fine sandy loam, and Elsmere loamy fine sands soils (NRCS 2013). Each prairie was cut for hay once each year prior to the study. In addition, prairies were bordered, at least partially, on one side

by a row crop field. All row crop fields were planted to field corn (*Zea mays*) in 2012 and 2013. In 2014, the two Pierce County row crop fields were planted to soybean (*Glycine max*) with the two Holt County fields still planted to field corn.

Three 100x81m plots (0.81 ha) were established for the three treatments at each location: hay cut once per growing season (typical producer management); hay cut twice per growing season; and a uncut control. They were arranged in a randomized complete block design with a split plot. Each site was treated as a block with one replication of the treatments. The main plot was the number of times the hay was cut with the subplot being the distance we sampled into the row crop field. Distances sampled into the crop field were 0, 5, 10, 25, and 50m. At the start of the study the two locations in Holt County were under “Abnormally Dry” conditions and the two in Pierce County were not (Heim 2012). By the end of the 2012 field season, all locations were under “Extreme Drought” (Brewer 2012). Due to the drought conditions, only 2013 and 2014 data are included in these analyses. With the lingering drought at the Holt County locations, all two cutting plots were converted to additional single cutting plots for the 2013 and 2014 growing seasons.

Total annual precipitation was quite variable during the study period. According to the Nebraska Rainfall Assessment and Information Network ([nerain.dnr.ne.gov](http://nerain.dnr.ne.gov)), annual precipitation for Holt County locations was approximately 40.41, 78.98, and 54.31 cm for 2012, 2013, and 2014, respectively. Site “V” in Pierce County annual precipitation was 27.41, 65.25, and 68.07 cm for 2012, 2013, and 2014, respectively. Site “H” in Pierce County annual precipitation was 38.76, 60.25, and 60.12 cm for 2012, 2013, and 2014, respectively. The 30-year (1981-2010) historical mean annual precipitation for



the Holt County locations is 62.71cm and the Pierce County sites are 70.38cm (PRISM 2015).

One yellow sticky card (YSC) was suspended on a wooden post at plant height. For field planted to corn, once the ears emerged, the YSCs were placed at ear height. Two pitfall traps, using 532 ml plastic drink cups, were installed one meter on either side of the YSC post. Each pitfall trap was filled approximately 2.5 cm from the bottom with propylene glycol when deployed. Pitfall traps and YSCs were deployed for 24 hours.

The natural enemies collected by both methods were identified to various taxonomic levels. Natural enemies collected using YSC were identified to family. Spiders were identified to order (Araneae) due many of the ones collected being small and immature. Coccinellidae were identified to species. Pitfall trap collected natural enemies were identified to family, including spiders. Harvestmen were identified to order (Opiliones) and centipedes to class (Chilopoda).

Total abundance of beneficial arthropods sampled by YSC (response variable) was analyzed using an analysis of variance (ANOVA) with a repeated measures for a time series using PROC MIXED with a “slice” for analysis of each sampling time point with a PDIFF with Satterthwaite denominator degrees of freedom for means separation in SAS (SAS Institute, Cary, NC). Activity density of beneficial arthropods in pitfall traps (response variable) was analyzed in the same manner as YSC. However, the two pitfall traps were treated as subsamples and averaged to create a composite activity density for analysis.

Differences in community composition were compared using a permuted multivariate analysis of variance (PERMANOVA) within the “adonis” function in the

vegan package (Oksanen et al. 2013) of R statistical software (R Core Team 2013).

Each period before and after hay cutting was analyzed separately by distance into the crop field using the Bray-Curtis distance metric as it well suited for ecological data (Faith et al. 1987). This distance metric incorporates both diversity and abundance. Each PERMANOVA had 999 permutations. Natural enemies were used in the community analysis at the taxonomic levels described above for each sampling method.

## Results

Varying numbers of natural enemy and other beneficial arthropod taxa were collected with YSC and pitfall traps. A total of 20 natural enemy taxa were collected by YSC in 2013 and 2014 (Table 1). Pitfall traps collected 27 beneficial arthropod taxa in 2013 and 2014 (Table 2).

The main effects, hay cutting, were not significant ( $P < 0.05$ ) for YSC in 2013, 2014, and 2013/2014 (Table 3). However the simple effects, distance into crop field, were significant ( $P < 0.05$ ) for YSC in 2013, 2014, and 2013/2014 (Table 3). For pitfall traps the main effects were significant ( $P < 0.05$ ) for 2014 and 2013/2014 but not for 2013 (Table 4). Simple effects for pitfall traps were significant ( $P < 0.05$ ) for 2013, 2014, and 2013/2014 (Table 4).

Simple effects for YSC are further reported from this study. There were some significant differences ( $P < 0.05$ ) in the total abundance of natural enemies collected with YSCs in 2013, 2014, and 2013/2014 combined (Table 5). In all cases, a greater total abundance of natural enemies were found 25 and 50m from the uncut control. There was a greater total abundance of natural enemies at 50m from the uncut control prior to any hay cutting in 2014 and 2013/2014 combined (Table 5).

Simple effects for pitfall traps are also further reported from this study. In addition, significant differences ( $P<0.05$ ) in the activity density of natural enemies were observed in pitfall trap sampling in 2013, 2014, and 2013/2014 combined (Table 6). Two of the three significant differences ( $P<0.05$ ) were at the 0m distance prior to any hay cutting in 2014 and the combined data. The uncut control had the higher activity density compared to the one or two cutting per growing season treatments. The third significant difference ( $P<0.05$ ) was three weeks after the entire hay meadow had been cut for hay, except the uncut control, at 10m into the crop field.

Differences ( $P<0.05$ ) in community composition were observed five times between both YSC and pitfall sampling. Only significant differences ( $P<0.05$ ) in community composition are reported (Table 7). Both YSC differences in community composition were observed at 5m into the crop field. One was in 2013 one week after the first cutting of the two cutting treatment, and the second was in the combined data for two weeks after the first cutting of the two cutting treatment. All significant differences ( $P<0.05$ ) in the pitfall community composition were observed in 2014. Two were at 0m into the crop field with one at one week and the second at two weeks after the first cutting of the two cutting treatment. The third was three weeks after the entire hay meadow had been cut for hay, except the uncut control, at 10m into the crop field.

### **Discussion**

The significant differences ( $P<0.05$ ) observed in YSC sampling were at distances, 25 and 50m, that would indicate highly mobile natural enemies (Table 5). This is not surprising. Yellow sticky cards are known to collect these highly mobile natural enemies (Schmidt et al. 2008). In all cases the uncut control had significantly greater ( $P<0.05$ )

total natural enemy abundance than did either the one or two cutting treatments. These results are suggestive that distances greater than 50m may be required for YSC sampling.

Significant differences ( $P < 0.05$ ) in activity density of pitfall traps were at distances of 10 and 0m from the crop field (Table 6). Pitfall traps sample ground dwelling arthropods that are generally not as mobile as those sampled with YSCs. These results should be expected. Two of the three significantly greater activity densities were from 0m into the crop field from the uncut control. These were even prior to hay cutting in the 2014 and combined data.

Community composition differed little in our study (Table 7). There were no significant differences ( $P < 0.05$ ) prior to prairie hay being cut. All differences were observed at 0, 5, or 10m into the crop field. The lack of differences in 2013 for the pitfall may be heavily influenced by the severe drought conditions experienced in 2012.

Both sampling methods may indicate that the uncut control might be acting as a reservoir for natural enemies for adjacent crop fields. These undisturbed habitats, in terms of lack of harvest, would reinforce that natural areas with prairie vegetation are important for natural enemies (Cox et al. 2014, Gill et al. 2014, Schmidt et al. 2011, Walton & Isaacs 2011). Our results should be carefully considered however.

Drought conditions in 2012 likely had an impact on our study. The extreme conditions experienced led to our not reporting 2012 data and the loss of the two cutting treatment at two locations. It is important to note that our uncut controls were established in 2012. Corn was grown in all crop fields in 2013. Two out of the four grew soybean in 2014. The change in crop may have influenced the community composition results for

pitfall traps. When soybean was part of our study was when we observed community differences in the pitfall traps.

Our results are not conclusive, but they do suggest areas for further study. One such area would be to focus on the uncut treatment. Results from our study suggest that increased distance into the crop beyond 50m is needed for YSC sampling. Rotational cutting of prairie hay would be another area requiring further study for impacts on arthropod natural enemies.

### Acknowledgments

We greatly appreciate the landowners that allowed us to conduct this research on their land and who graciously worked with us to have a two cutting treatment. Specifically we would like to thank M. Hilkemann, W. Sobotka, Adam Venteicher, Ken Venteicher, and Aaron Zimmerman. We appreciate field and lab assistance from L. Nelson, J. Brown, and E. Hasenkamp.

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**Table 1.** Natural enemies collected using yellow sticky cards along with the total collected between 2013 and 2014

Order	Family	Species	Total Collected
Araneae			40
Coleoptera	Cleridae		2
	Coccinellidae	<i>Braciacantha decempustulata</i>	8
		<i>Braciacantha ursina</i>	2
		<i>Coccinella septumpunctata</i>	10
		<i>Coleomegilla maculata</i>	17
		<i>Cycloneda munda</i>	3
		<i>Diomus sp.</i>	1
		<i>Harmonia axyridis</i>	5
		<i>Hippodamia convergens</i>	85
		<i>Hippodamia parenthesis</i>	1
		<i>Hippodamia tredecimpunctata</i>	1
Diptera	Bombyliidae		2
	Dolichopodidae		721
	Syrphidae		177
Hemiptera	Anthocoridae	<i>Orius insidiosus</i>	42
Hymenoptera	Parasitic wasps <sup>1</sup>		2,995
	Tiphiidae		1
Neuroptera	Chrysopidae		138
	Hemerobiidae		22

<sup>1</sup>Hymenoptera within the “parasitica”

**Table 2.** Natural enemies collected using pitfall traps collected between 2013 and 2014 and the composite average between the two subsamples

Class	Order	Family	Total Collected
Arachnida	Araneae	Agelenidae	2.5
		Ctenidae	0.5
		Dictynidae	1.0
		Gnaphosidae	92.5
		Linyphiidae	3.0
		Lycosidae	255.5
		Miturgidae	0.5
		Oxyopidae	0.5
		Philodramidae	1.0
		Salticidae	0.5
		Tetragnathidae	7.0
		Theridiidae	2.5
		Thomisidae	48.0
	Opilones		72.0
Chilopoda	Pseudoscorpiones		0.5
			4.0
Insecta	Coleoptera	Carabidae	1,068.5
		Coccinellidae	1.0
		Histeridae	34.0
		Staphylinidae	86.5
	Hemiptera	Geocoridae	31.0
	Hymenoptera	Formicidae	426.5
		Mutillidae	14.0
		Scoliidae	4.5
		Sphecidae	7.5
		Vespidae	2.5
		Parasitic wasp <sup>1</sup>	50.0

<sup>1</sup>Hymenoptera within the “parasitica”



**Table 3.** ANOVA revealing the response of natural enemies collected with YSC to hay cutting and distance into crop field for 2013, 2014, and 2013/2014 combined.

Year	Variable	DF <sup>1</sup>	F	P
2013	Site	3, 222	8.07	<0.0001
	Timing	6, 222	3.77	0.0013
	Treatment	2, 222	1.65	0.1941
	Distance	4, 222	8.33	<0.0001
2014	Site	3, 200	0.66	0.5754
	Timing	6, 200	2.46	0.0255
	Treatment	2, 200	1.12	0.3273
	Distance	4, 200	2.38	0.0526
2013/2014	Year	1, 529	19.47	<0.0001
	Site	3, 529	7.75	<0.0001
	Timing	6, 529	2.23	0.0390
	Treatment	2, 529	2.03	0.1320
	Distance	4, 529	6.85	<0.0001

<sup>1</sup> Degrees of freedom, numerator followed by denominator degrees of freedom

**Table 4.** ANOVA revealing the response of natural enemies collected with pitfall traps to hay cutting and distance into crop field for 2013, 2014, and 2013/2014 combined.

Year	Variable	DF <sup>1</sup>	F	P
2013	Site	3, 204	19.23	<0.0001
	Timing	6, 204	4.29	0.0004
	Treatment	2, 204	2.62	0.0754
	Distance	4, 204	1.65	0.1625
2014	Site	3, 176	14.41	<0.0001
	Timing	6, 176	2.43	0.0276
	Treatment	2, 176	4.70	0.0102
	Distance	4, 176	12.65	<0.0001
2013/2014	Year	1, 466	20.55	<0.0001
	Site	3, 466	25.32	<0.0001
	Timing	6, 466	12.06	<0.0001
	Treatment	2, 466	10.79	<0.0001
	Distance	4, 466	2.72	0.0289

<sup>1</sup> Degrees of freedom, numerator followed by denominator degrees of freedom

**Table 5.** Mean  $\pm$  SEM of beneficial arthropods sampled using yellow sticky cards (YSC) prior to cutting prairie hay and after cutting. Comparisons are for the simple effects and are marked with unique letters for those significantly different (“\*” at  $P<0.05$ , “\*\*” at  $P<0.01$ , “\*\*\*” at  $P<0.001$ ) from each other and those marked “NS” are not significantly different ( $P<0.05$ )

Year	Timing <sup>1</sup>	Treatment	Distance				
			0m	5m	10m	25m	50m
2013							
	Pre	0x	5.25±2.23 NS	2.00±0.47 NS	2.25±0.55 NS	3.25±1.59 NS	3.00±1.25 NS
		1x	4.50±1.49	3.00±0.57	3.83±1.04	1.50±0.55	3.00±0.98
		2x	7.00±4.24	2.50±2.12	1.50±2.12	2.00±0.00	1.50±2.12
	Post 1	0x	9.00±4.24 NS	5.50±2.12 NS	2.00±1.41 NS	3.00±1.41 NS	0.50±0.71 NS
		1x	2.50±0.71	1.50±0.71	1.00±0.00	1.50±2.12	2.50±3.54
		2x	3.00±1.41	5.00±7.07	3.00±1.41	3.50±4.95	3.50±0.71
	Post 2	0x	13.00±15.56 NS	2.50±3.54 NS	7.00±0.00 NS	4.50±3.54 NS	3.50±2.12 NS
		1x	4.00±1.41	3.00±1.41	3.50±2.12	3.00±0.00	1.00±0.00
		2x	6.50±6.36	4.00±2.83	4.00±1.41	4.50±0.71	0.00±0.00
	Post 3	0x	5.00±0.00 NS	3.50±0.71 NS	3.50±0.71 NS	3.50±3.54A***	2.50±0.71 NS
		1x	7.00±0.00	3.00±0.00	2.00±1.41	3.00±2.83B	3.50±2.12
		2x	3.50±3.54	2.50±0.71	4.00±1.41	3.00±1.41B	4.50±0.71
	Post 4	0x	10.50±3.82 NS	5.50±3.18 NS	5.00±3.92 NS	4.25±3.07 NS	9.00±7.07A*
		1x	11.00±3.16	3.33±1.32	3.17±0.66	1.67±0.73	3.50±1.95B
		2x	12.00±15.56	10.50±13.44	10.00±14.14	9.00±12.73	3.00±4.24B

<sup>1</sup>Timings were prior to cutting (PRE); one, two, & three weeks after first cutting of two cut treatment (Post 1–Post 3); and one, two, & three weeks after first cutting of one cut treatment and second cutting of two cut treatment (Post 4–Post 6)

**Table 5.** Continued

Year	Timing <sup>1</sup>	Treatment	Distance				
			0m	5m	10m	25m	50m
2013							
	Post 5	0x	5.25±3.87 NS	3.00±2.00 NS	3.00±2.21 NS	4.50±4.82 NS	3.75±3.57 NS
		1x	6.33±5.20	2.00±0.75	4.17±1.11	1.67±0.73	2.83±1.68
		2x	12.50±6.36	7.50±7.78	2.50±2.12	9.50±12.02	4.00±5.66
	Post 6	0x	5.50±3.14 NS	3.25±1.96 NS	1.50±0.75 NS	13.00±11.21 NS	3.50±1.45 NS
		1x	4.33±1.93	3.00±0.63	4.17±1.11	2.67±1.64	2.67±1.38
		2x	10.50±2.12	3.00±1.41	4.00±2.83	4.50±6.36	4.50±4.95
2014							
	Pre	0x	3.75±1.59 NS	2.25±0.87 NS	1.75±0.99 NS	1.75±0.87 NS	11.75±11.65A***
		1x	7.80±2.48	1.40±0.67	2.60±1.35	1.20±0.55	2.40±1.04B
		2x	2.00±2.83	1.50±2.12	3.00±2.83	1.00±1.41	0.50±0.71B
	Post 1	0x	7.50±10.61 NS	3.50±3.54 NS	2.00±2.83 NS	11.50±14.85 NS	7.00±9.90 NS
		1x	5.00±1.41	0.50±0.71	3.00±1.41	2.00±2.83	4.00±4.24
		2x	3.00±4.24	1.50±2.12	2.00±1.41	5.50±6.36	6.00±8.49
	Post 2	0x	1.50±0.71 NS	0.00±0.00 NS	0.00±0.00 NS	3.50±0.71 NS	0.50±0.71 NS
		1x	1.00±1.41	0.50±0.71	0.50±0.71	0.00±0.00	0.00±0.00
		2x	0.50±0.71	1.50±2.12	0.50±0.71	0.50±0.71	0.50±0.71
	Post 3	0x	6.00±4.24 NS	3.50±3.54 NS	0.00±0.00 NS	1.00±1.41 NS	1.50±0.71 NS
		1x	5.00±4.24	3.00±0.00	1.50±0.71	0.50±0.71	1.50±0.71
		2x	1.50±0.71	0.50±0.71	1.50±0.71	1.00±0.00	3.50±0.71

**Table 5.** Continued

Year	Timing <sup>1</sup>	Treatment	Distance				
			0m	5m	10m	25m	50m
2014							
	Post 4	0x	2.50±1.11 NS	1.50±0.75 NS	1.00±0.82 NS	1.75±0.87 NS	0.33±0.33 NS
		1x	3.40±0.91	4.00±1.46	1.00±0.87	1.80±0.74	2.50±1.26
		2x	1.00±1.41	2.00±2.83	1.50±2.12	2.50±0.71	1.00±1.41
	Post 5	0x	2.50±1.00 NS	2.50±1.67 NS	2.50±1.37 NS	1.25±1.09 NS	0.50±0.33 NS
		1x	7.60±4.13	1.60±0.76	1.80±0.82	1.00±0.50	1.00±0.61
		2x	2.00±2.83	2.00±0.00	3.50±2.12	4.50±2.12	4.00±4.24
	Post 6	0x	4.00±3.46 NS	3.25±1.36 NS	3.50±3.32 NS	2.00±0.47 NS	1.75±2.02 NS
		1x	7.00±5.05	3.80±3.15	2.80±2.04	3.00±1.97	3.00±1.22
		2x	2.50±2.12	0.00±0.00	2.00±0.00	1.00±1.41	0.50±0.71
	Combined Pre	0x	4.50±1.21 NS	2.13±0.43 NS	2.00±0.49 NS	2.50±0.83 NS	7.38±5.32A*
		1x	6.00±1.36	2.27±0.47	3.27±0.78	1.36±0.35	2.73±0.65B
		2x	4.50±2.38	2.00±1.05	2.25±1.28	1.50±0.58	1.00±0.82B
	Post 1	0x	8.25±3.84 NS	4.50±1.53 NS	2.00±1.05 NS	7.25±5.72 NS	3.75±3.95 NS
		1x	3.75±0.99	1.00±0.47	2.00±0.82	1.75±1.19	3.25±1.91
		2x	3.00±1.49	3.25±2.72	2.50±0.75	4.50±2.77	4.75±2.96
	Post 2	0x	7.25±6.45 NS	1.25±1.44 NS	3.50±2.33 NS	4.00±1.25 NS	2.00±1.25 NS
		1x	2.50±1.20	1.75±0.99	2.00±1.25	1.50±1.00	0.50±0.33
		2x	3.50±2.92	2.00±1.63	2.25±1.28	2.50±1.37	0.25±0.29

**Table 5.** Continued

Year	Timing <sup>1</sup>	Treatment	Distance				
			0m	5m	10m	25m	50m
Combined							
	Post 3	0x	5.50±1.45 NS	3.50±1.20 NS	1.75±1.19 NS	2.25±1.52 NS	2.00±0.47 NS
		1x	6.00±1.56	3.00±0.00	1.75±0.55	1.75±1.28	2.50±1.00
		2x	2.50±1.37	1.50±0.75	2.75±0.99	2.00±0.82	4.00±0.47
	Post 4	0x	6.50±2.35 NS	3.50±1.62 NS	3.00±1.90 NS	3.00±1.46 NS	5.29±3.71 NS
		1x	7.55±2.05	3.64±0.89	2.18±0.60	1.55±0.38	3.10±1.14
		2x	6.50±6.37	6.25±5.38	5.75±5.55	5.75±4.77	2.00±1.63
	Post 5	0x	3.88±1.80 NS	2.75±1.12 NS	2.75±1.12 NS	2.88±2.22 NS	2.13±1.67 NS
		1x	6.91±3.09	1.82±0.49	1.73±0.53	1.36±0.43	2.00±0.93
		2x	7.25±4.20	4.75±3.18	3.00±1.05	7.00±4.40	4.00±2.36
Post 6	0x	4.75±2.03 NS	3.25±1.03 NS	2.50±1.51 NS	7.50±5.30 NS	2.63±1.12 NS	
	1x	5.55±2.28	3.36±1.31	3.55±1.01	2.82±1.14	2.82±0.85	
	2x	6.50±2.85	1.50±1.11	3.00±1.15	2.75±2.47	2.50±2.13	

**Table 6.** Mean  $\pm$  SEM of beneficial arthropods sampled using pit fall traps prior to cutting prairie hay and after cutting. Comparisons are for the simple effects and are marked with unique letters for those significantly different (“\*” at  $P<0.05$ , “\*\*” at  $P<0.01$ , “\*\*\*” at  $P<0.001$ ) from each other and those marked “NS” are not significantly different ( $P<0.05$ )

Year	Timing <sup>1</sup>	Treatment	Distance				
			0m	5m	10m	25m	50m
2013							
	Pre	0x	7.50±2.84 NS	3.50±0.85 NS	3.88±1.46 NS	2.25±1.36 NS	2.25±0.60 NS
		1x	4.17±1.19	2.42±0.99	2.83±1.82	2.25±0.36	4.08±1.80
		2x	12.00±11.31	4.00±2.12	1.00±1.41	9.25±9.55	3.75±1.77
	Post 1	0x	6.25±3.89 NS	1.50±1.41 NS	1.25±0.35 NS	2.50±2.12 NS	5.00±4.95 NS
		1x	3.50±3.54	2.00±1.41	2.75±2.47	3.00±2.83	6.25±6.72
		2x	12.00±2.12	1.50±0.71	2.75±1.77	1.50±0.00	1.00±0.71
	Post 2	0x	2.25±0.35 NS	2.00±2.12 NS	0.75±0.35 NS	1.50±0.71 NS	1.75±1.06 NS
		1x	3.00±0.00	0.00±0.00	2.00±2.83	3.00±0.71	0.50±0.71
		2x	5.25±3.18	0.75±0.35	1.00	1.50±0.71	0.50±0.31
	Post 3	0x	4.25±2.47 NS	2.00±0.71 NS	3.50±3.54 NS	7.50±8.49 NS	0.50 NS
		1x	1.75±0.35	2.75±1.77	2.00±2.12	1.25±1.06	0.25±0.35
		2x	10.25±3.18	1.00±0.71	0.75±1.06	0.25±0.35	0.75±1.06
	Post 4	0x	2.00±0.91 NS	4.83±4.39 NS	4.00±0.71 NS	0.83±0.41 NS	1.33±0.41 NS
		1x	3.33±1.70	2.75±0.66	2.33±0.95	1.50±0.47	2.50±0.98
		2x	9.50±9.19	20.75±29.34	16.50	22.50	7.00

<sup>1</sup>Timings were prior to cutting (PRE); one, two, & three weeks after first cutting of two cut treatment (Post 1–Post 3); and one, two, & three weeks after first cutting of one cut treatment and second cutting of two cut treatment (Post 4–Post 6)

**Table 6.** Continued

Year	Timing	Treatment	Distance				
			0m	5m	10m	25m	50m
2013	Post 5	0x	4.00±0.41 NS	6.13±5.92 NS	8.75±9.35 NS	7.00±7.35 NS	2.00±1.25 NS
		1x	3.08±1.28	1.75±1.29	1.75±0.34	0.83±0.35	0.50±0.35
		2x	8.75±8.84	19.00±26.87	11.25±15.20	19.50	2.00±2.12
	Post 6	0x	3.13±1.53 NS	11.17±13.37 NS	9.67±9.09 NS	3.38±3.71 NS	3.13±3.23 NS
		1x	4.17±1.19	3.00±2.24	1.08±0.39	1.70±0.47	1.00±0.40
		2x	12.00±11.31	21.25±27.93	20.75±28.64	17.50	7.00±8.49
2014	Pre	0x	24.25±14.72 A***	4.00±1.68 NS	6.00±2.84 NS	2.00±1.43 NS	2.00±1.94 NS
		1x	8.25±2.65 B	3.13±1.46	3.38±1.50	4.25±3.00	3.63±0.49
		2x	11.00±7.67 B	2.17±0.89	4.83±2.65	3.83±2.84	3.33±2.70
	Post 1	0x	5.25±5.30 NS	5.00 NS	1.00±1.41 NS	1.00±1.41 NS	2.25±2.47 NS
		1x	5.00±2.12	2.25±1.06	2.50±0.71	2.00±2.12	3.75±5.30
		2x	11.00±0.00	3.50±4.24	3.75±4.60	4.75±3.18	3.75±3.18
	Post 2	0x	8.00±3.54 NS	5.00±4.24 NS	6.75±6.01 NS	3.25±3.18 NS	3.00±2.83 NS
		1x	3.75±3.18	1.00±0.00	1.50±0.71	3.00±2.83	1.50±0.71
		2x	4.00±0.71	1.75±1.06	6.25±7.42	2.25±0.35	1.50±1.41
	Post 3	0x	5.00±2.83 NS	6.75±3.89 NS	3.75±1.06 NS	2.50±2.83 NS	1.75±1.06 NS
		1x	2.75±3.89	2.50±2.12	0.75±0.35	1.50±2.12	2.00±2.12
		2x	6.25±0.35	4.75±6.01	5.00±4.95	2.00±0.71	3.00±3.54



**Table 6.** Continued

Year	Timing	Treatment	Distance				
			0m	5m	10m	25m	50m
2014							
	Post 4	0x	7.13±1.85 NS	3.67±3.58 NS	2.33±1.02 NS	1.88±1.38 NS	0.50±0.24 NS
		1x	6.38±2.47	2.25±0.76	1.38±0.72	1.13±0.49	0.63±0.43
		2x	7.33±3.63	4.00±4.95	4.50±4.24	4.33±3.47	0.50±0.61
	Post 5	0x	5.17±4.13 NS	3.25±3.38 NS	1.63±0.60 NS	1.13±0.60 NS	1.00±0.71 NS
		1x	9.00±5.17	0.75±0.17	1.50±0.47	0.50±0.41	0.88±0.49
		2x	12.00±4.42	4.67±4.83	6.83±7.76	4.83±5.32	1.50±1.54
	Post 6	0x	6.00±2.61 NS	1.88±1.11 NS	1.88±2.17 NS	1.38±1.04 NS	0.88±0.64 NS
		1x	8.00±4.52	1.88±1.61	1.63±0.76	0.88±0.83	1.75±0.55
		2x	7.00±5.10	4.67±4.83	5.17±5.73	2.33±2.56	0.83±0.74
Combined							
	Pre	0x	15.88±7.26 A**	3.75±0.81 NS	4.94±1.43 NS	2.13±0.85 NS	2.13±0.87 NS
		1x	5.80±1.31 B	2.70±0.75	3.05±1.13	3.05±1.09	3.90±1.02
		2x	11.40±4.77 B	2.90±0.86	3.30±1.73	6.00±3.15	3.50±1.43
	Post 1	0x	5.75±2.22 NS	2.67±1.59 NS	1.13±0.49 NS	1.75±0.99 NS	3.63±2.06 NS
		1x	4.25±1.46	2.13±0.60	2.63±0.86	2.50±1.22	5.00±2.97
		2x	11.50±0.78	2.50±1.58	3.25±1.67	3.13±1.52	2.38±1.42
	Post 2	0x	5.13±2.25 NS	3.50±1.87 NS	3.75±2.83 NS	2.38±1.23 NS	2.38±1.09 NS
		1x	3.38±1.09	0.50±0.33	1.75±0.99	3.00±0.97	1.13±0.49
		2x	4.63±1.16	1.25±0.50	4.50±4.29	1.88±0.36	1.00±0.62

**Table 6.** Continued

Year	Timing	Treatment	Distance				
			0m	5m	10m	25m	50m
Combined							
	Post 3	0x	4.63±1.28 NS	4.38±2.06 NS	3.63±1.23 NS	5.00±3.42 NS	1.33±0.74 NS
		1x	2.25±1.34	2.63±0.92	1.38±0.83	1.38±0.79	1.13±0.49
		2x	8.25±1.71	2.88±2.37	2.88±2.20	1.13±0.64	1.88±1.44
	Post 4	0x	4.56±1.36 NS	4.25±2.28 NS	3.17±0.64 NS	1.43±0.74 NS	0.86±0.26 NS
		1x	4.55±1.36	2.55±0.45	1.95±0.60	1.33±0.31	1.67±0.63
		2x	8.20±2.99	12.38±11.38	8.50±5.34	8.88±5.73	2.13±1.92
	Post 5	0x	4.50±1.41 NS	4.69±2.98 NS	5.19±4.27 NS	4.06±3.36 NS	1.50±0.65 NS
		1x	5.45±2.12	1.35±0.74	1.65±0.25	0.70±0.20	0.65±0.26
		2x	10.70±3.25	10.40±8.11	8.60±5.57	8.50±5.52	1.70±0.95
	Post 6	0x	4.56±1.42 NS	5.86±4.93 NS	5.21±3.64 AB*	2.38±1.70 NS	2.00±1.48 NS
		1x	5.35±1.80	2.50±1.29	1.30±0.34 B	1.33±0.48	1.33±0.32
		2x	9.90±4.12	11.30±8.67	11.40±8.81 A	6.13±4.70	3.30±2.74

**Table 7.** Significant ( $P < 0.05$ ) differences in community composition for yellow sticky cards (YSC) and pitfall traps with degrees of freedom (DF), F-value, and P-value.

Method	Year	Timing <sup>1</sup>	Distance <sup>2</sup>	DF	F-value	P-value
YSC	2013	Post 1	5m	2, 2	2.4576	0.019
	Combined	Post 2	5m	2, 7	2.4129	0.034
Pitfall	2014	Post 1	0m	2, 2	1.8801	0.036
		Post 2	0m	2, 2	2.3819	0.031
		Post 6	10m	2, 5	2.5349	0.052

<sup>1</sup>Timings were prior to cutting (PRE); one, two, & three weeks after first cutting of two cut treatment (Post 1–Post 3); and one, two, & three weeks after first cutting of one cut treatment and second cutting of two cut treatment (Post 4–Post 6)

<sup>2</sup>Distance was measured from the crop field and the prairie hay meadow interface

**Figure 1.** Aerial photographs of the 23.31 km<sup>2</sup> around each of the four study sites: (A) V, (B) H, (C) S1, and (D) S2. Images produced using Google Earth (v7.1.5.1557, Google, Mountain View, CA).

Figure 1.



## CHAPTER 4

### EFFECT OF CUTTING REGIME ON YIELD AND QUALITY OF NATIVE PRAIRIE HAY

#### **Abstract**

Four northeast Nebraska prairie hay meadows were selected to compare hay quality and quantity from meadows cut one or two times per year. The study was conducted in 2012-2014. Due to drought conditions in 2012, only data from 2013 and 2014 are reported. There was no significant difference ( $P<0.05$ ) in the hay yield in 2013 between the two treatments, but there was a significant difference ( $P<0.05$ ) in hay yield in 2014 and 2013/2014 combined with the two cutting producing more the one cutting. Additionally there was no significant difference ( $P<0.05$ ) in acid detergent fiber and total digestible nutrient content of the hay between the two treatments. There was a significant difference ( $P<0.05$ ) in the crude protein content with two cuttings per growing season providing higher percent protein content. The results of this study will assist growers in balancing their needs for yield and protein content.

#### **Introduction**

Agricultural producers are consistently looking for ways to increase production and/or efficiency. For grass hay production this may mean multiple cuttings. In northeast Nebraska, prairie hay is typically cut once per year (personal observation). Prairie hay is typically cut within 5 cm of the soil surface to maximize yield (Cooper 1956) and this practice is common.

The prairie biome is often broken into the three main categories: tallgrass, mixedgrass, and shortgrass. Northeast Nebraska contains both tall and mixed grass. The

plant community of prairies is a combination of grasses and forbs. Tallgrass prairie in Nebraska has been documented to contain >290 species of vascular plants while mixed grass contained >190 (Johnsgard 2007). This resource is used for hay production in Nebraska (Baker et al. 1951).

Past research in Nebraska has shown that prairie hay cut earlier in the growing season has a higher crude protein content than when cut later (Baker et al. 1951). Additional work on prairie hay outside the state has shown similar results (Briggs et al. 1948, Cooper 1956, Embry et al. 1956, Moxon et al. 1951, Streeter et al. 1966). To what extent these results are still representative of prairie hay production 50-60 years later is not clear.

The goal of this study was to compare prairie hay quantity and quality between one and two cuttings per growing season. There were two objectives. The first objective was to determine differences in hay quality measured in nutritive value. Our second objective was to determine differences in quantity of hay produced.

### **Methods**

In 2012, four tall grass prairie sites were selected for study through 2014. Two sites were located in Pierce County Nebraska. One site, designated as “V,” is a wet meadow with Elsmere loamy fine sands and Loup fine sandy loam soils. The second site, designated as “H,” was a hilltop meadow with Thurman loamy fine sands and Hadar loamy fine sands soils. Two additional sites were located Holt County in Nebraska. Both sites are wet hay meadows. The first site, designated as “S1,” has Elsmere-Ipage loamy fine sands and Elmere fine sandy loam soils. The second site, designated as “S2,” has Elsmere-Ipage loamy fine sands, Elsmere fine sandy loam, and Elsmere loamy fine sands

soils. Dominant grass species at the four sites were: needle-and-thread grass (*Hesperostipa comata*), big bluestem (*Andropogon gerardi*), Scribner's rosette grass (*Dichanthelium oligsanthes* (J.A. Shcultes) Gould var. *scribnerianum* (Nash) Gould), and switch grass (*Panicum virgatum*). Each prairie meadow was cut for hay once each year prior to the study.

Total annual precipitation was quite variable during the study period. According to the Nebraska Rainfall Assessment and Information Network ([nerain.dnr.ne.gov](http://nerain.dnr.ne.gov)), annual precipitation for Holt County locations was approximately 40.41, 78.98, and 54.31 cm for 2012, 2013, and 2014, respectively. Site "V" in Pierce County annual precipitation was 27.41, 65.25, and 68.07 cm for 2012, 2013, and 2014, respectively. Site "H" in Pierce County annual precipitation was 38.76, 60.25, and 60.12 cm for 2012, 2013, and 2014, respectively. The 30-year (1981-2010) historical mean annual precipitation for the Holt County locations is 62.71cm and the Pierce County sites are 70.38cm (PRISM 2015).

Two 100x81m (0.81 ha) plots/site were established for each of two treatments: hay cut once per growing season and hay cut twice per growing season as fixed variables. Plots were arranged in a completely randomized paired design. At the start of the study the two locations in Holt County were under "Abnormally Dry" conditions and the two in Pierce County were not (Heim 2012). By the end of the 2012 field season, all locations were under "Extreme Drought" (Brewer 2012). Due to the drought conditions, only 2013 and 2014 data are included in these analyses. With the lingering drought at the Holt County locations, all two cutting plots were converted to additional single cutting plots for the 2013 and 2014 growing seasons.



Prairie hay yield, response variable, was estimated by taking five random wire frame clippings from each treatment 12-48 hours prior to hay cutting. Clipping height was ~5 cm above the soil to mirror producer harvest practices. Samples were stored in brown paper bags and dried. Dry weights were then recorded and used for statistical analysis. Yield estimates for the two cutting treatment were combined for both cuttings giving an annual yield estimate.

Hay quality was sampled by taking core samples from baled hay. Four core samples were taken from each bale of hay produced from each plot. Core samples were bagged in brown paper bags and stored at room temperature until they could be analyzed. Wet chemistry analyses were conducted by Ward Laboratories of Kearney Nebraska ([www.wardlab.com](http://www.wardlab.com)). Data for 2013 and 2014 were combined for hay quality analyses. The feed parameters of crude protein, acid detergent fiber (ADF), and calculated total digestible nutrients (TDN) were also statistically analyzed as additional response variables.

Hay yield was analyzed with a Kruskal-Wallis test using PROC UNIVARIATE in SAS (SAS Institute, Cary, NC) as the data were skewed and a normal distribution could not be obtained through transformation of the data. The Hay quality parameters of ADF and TDN were analyzed in the same manner due to skewed distributions. Crude protein was normally distributed and was analyzed with an analysis of variance (ANOVA) using PROC GLM with LSMEANS in SAS.

## **Results**

Mean hay yield for each year and combined years are reported in Table 1. There were no significant differences ( $P < 0.05$ ) in hay yield in 2013. However in 2014, there

was a significant difference ( $P<0.05$ ) in hay yield with the two cutting producing more than the one cutting. Both years were combined for a composite analysis with there being a significant difference ( $P<0.05$ ) in the hay yield with the two cutting producing more than the one cutting. Results from the analyses of individual and combined years can be found in Table 1.

Mean crude protein, ADF, and TDN contents are reported in Table 2. There were no significant differences ( $P<0.05$ ) in ADF or TDN between the two treatments. There was a significant difference ( $P<0.05$ ) in the percent crude protein content between two cuttings and one cutting per growing season with the two cutting being higher (Table 2).

### **Discussion**

Yield was higher in the two cutting treatment compared to the one cutting in 2014 and in 2013/2014 combined (Table 1), and was significantly different ( $P<0.05$ ). The difference in 2014 may have been due to one of the sites with the two cutting treatment not cutting hay until the end of August. Typical practice would be to cut prairie hay in late July or early August. This would have allowed for an additional three to four weeks additional growth in the two cutting treatment.

The significantly higher ( $P<0.05$ ) protein content in the two cutting hay treatments is supported by previous published studies (Baker et al. 1951, Briggs et al. 1948, Cooper 1956, Embry et al. 1956, Moxon et al. 1951, Streeter et al. 1966) (Table 2). These studies have demonstrated that prairie/grass hay harvested earlier contains higher crude protein. The second cutting of the two cutting treatment may be viewed similarly in that it is the regrowth that is harvested. Hay would have been cut before more plant

species would have had time to mature and senesce (Baker et al. 1951, Briggs et al. 1948, Cooper 1956, Embry et al. 1956).

Implications of this study would indicate that production goals would dictate how prairie hay was managed. If managing for higher crude protein content, prairie hay should be either harvested earlier (Baker et al. 1951, Briggs et al. 1948, Embry et al. 1956) or twice per growing season (Table 2). When yield is the primary management goal, one cutting per growing season may achieve that goal. The extra cost associated with cutting twice may not outweigh the benefits, with the benefit being increased crude protein with no significant increase in yield ( $P<0.05$ ). Our results were consistent with those Briggs et al. (1948). The producer should carefully consider any decisions for prairie hay management.

### Acknowledgements

We greatly appreciate the landowners that allowed us to conduct this research on their land and who graciously worked with us to have a two cutting treatment. Specifically we would like to thank M. Hilkemann, W. Sobotka, Adam Venteicher, and Ken Venteicher. We appreciate field and lab assistance from L. Nelson, J. Brown, and E. Hasenkamp.

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**Table 1.** Mean  $\pm$  SEM of yield in kilograms/hectare for 2013, 2014, and 2013/2014 combined with degrees of freedom (DF), statistic, and P-value.

Year	Treatment	Mean $\pm$ SEM	DF	Statistic	P-Value
2013	1x	6,940.63 $\pm$ 459.92	1	0.0198	0.8881
	2x	6,963.71 $\pm$ 843.15			
2014	1x	5,969.68 $\pm$ 593.75	1	5.7284	0.0167
	2x	8,721.15 $\pm$ 711.60			
2013/2014	1x	6,024.30 $\pm$ 479.26	1	5.0619	0.0245
	2x	7,842.82 $\pm$ 577.64			

**Table 2.** Mean  $\pm$  SEM of crude protein, acid detergent fiber, and total digestible nutrients for prairie hay feed value with degrees of freedom (DF), statistic and P-value.

Feed Parameter	Treatment	Value	DF	Statistic	P-Value
Crude Protein %	1x	7.49 $\pm$ 0.41	1, 10	10.08*	0.0099
	2x	9.34 $\pm$ 0.53			
Acid Detergent Fiber %	1x	41.05 $\pm$ 2.39	1	0.19**	0.6699
	2x	39.55 $\pm$ 3.12			
Total Digestible Nutrients %	1x	57.04 $\pm$ 2.67	1	0.19**	0.6715
	2x	58.70 $\pm$ 3.48			

\* F statistic for an ANOVA

\*\* Chi Square statistic

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**Appendix A:** Natural enemy abundance values collected in 2013 from prairie hay fields with yellow sticky cards and SAS 9.2 code used.

data NE;

input site \$ timing \$ treatment \$ distance \$ NE;

cards;

H	Pre	0x	P	5
H	Pre	1x	P	2
H	Pre	2x	P	1
H	Post1	0x	P	5
H	Post1	1x	P	2
H	Post1	2x	P	5
H	Post2	0x	P	2
H	Post2	1x	P	1
H	Post2	2x	P	3
H	Post3	0x	P	5
H	Post3	1x	P	5
H	Post3	2x	P	18
H	Post4	0x	P	13
H	Post4	1x	P	3
H	Post4	2x	P	8
H	Post5	0x	P	3
H	Post5	1x	P	3
H	Post5	2x	P	2
H	Post6	0x	P	6
H	Post6	1x	P	5
H	Post6	2x	P	5
S1	Pre	0x	P	7
S1	Pre	1x	P	4
S1	Pre	1x	P	6
S1	Post4	0x	P	4
S1	Post4	1x	P	9
S1	Post4	1x	P	3
S1	Post5	0x	P	1
S1	Post5	1x	P	2
S1	Post5	1x	P	2
S1	Post6	0x	P	3
S1	Post6	1x	P	12
S1	Post6	1x	P	0
S2	Pre	0x	P	0
S2	Pre	1x	P	7
S2	Pre	1x	P	10
S2	Post4	0x	P	3
S2	Post4	1x	P	2
S2	Post5	0x	P	2
S2	Post5	1x	P	3
S2	Post6	0x	P	0
S2	Post4	1x	P	3
S2	Post6	1x	P	10
S2	Post5	1x	P	38

**Appendix A.2:** Natural enemy abundance values collected in 2013 from prairie hay fields with yellow sticky cards and SAS 9.2 code used.

S2	Post6	1x	P	3
V	Pre	0x	P	5
V	Pre	1x	P	7
V	Pre	2x	P	8
V	Post1	0x	P	3
V	Post1	1x	P	4
V	Post1	2x	P	11
V	Post2	0x	P	7
V	Post2	1x	P	11
V	Post2	2x	P	8
V	Post3	0x	P	3
V	Post3	1x	P	5
V	Post3	2x	P	5
V	Post4	0x	P	3
V	Post4	1x	P	2
V	Post4	2x	P	6
V	Post5	0x	P	5
V	Post5	1x	P	3
V	Post5	2x	P	3
V	Post6	0x	P	3
V	Post6	1x	P	7
V	Post6	2x	P	5

;

```

Proc mixed method = type3;
class site timing treatment;
model NE = site timing treatment timing*treatment / ddfm = satterth;
slice timing*treatment / sliceby = timing diff lines;

run;
quit;

```

**Appendix B:** Natural enemy abundance values collected in 2014 from prairie hay fields with yellow sticky cards and SAS 9.2 code used.

data NE;

input site \$ timing \$ treatment \$ distance \$ NE;

cards;

H	Pre	0x	P	1
H	Pre	1x	P	2
H	Pre	2x	P	0
H	Post1	0x	P	4
H	Post1	1x	P	0
H	Post1	2x	P	2
H	Post2	0x	P	1
H	Post2	1x	P	0
H	Post2	2x	P	0
H	Post3	0x	P	4
H	Post3	1x	P	6
H	Post3	2x	P	0
H	Post4	0x	P	4
H	Post4	1x	P	1
H	Post4	2x	P	1
H	Post5	0x	P	2
H	Post5	1x	P	5
H	Post5	2x	P	4
H	Post6	0x	P	0
H	Post6	1x	P	0
H	Post6	2x	P	0
S1	Pre	0x	P	11
S1	Pre	1x	P	11
S1	Pre	2x	P	18
S1	Post4	0x	P	5
S1	Post4	1x	P	2
S1	Post4	1x	P	1
S1	Post5	0x	P	1
S1	Post5	1x	P	1
S1	Post5	1x	P	2
S1	Post6	1x	P	2
S1	Post6	0x	P	0
S1	Post6	1x	P	2
S2	Pre	0x	P	1
S2	Pre	1x	P	2
S2	Post4	0x	P	4
S2	Post4	1x	P	0
S2	Post5	0x	P	0
S2	Post5	1x	P	1
S2	Post6	0x	P	2
S2	Post6	1x	P	0
V	Pre	0x	P	10
V	Pre	1x	P	10
V	Pre	2x	P	8

**Appendix B.2:** Natural enemy abundance values collected in 2014 from prairie hay fields with yellow sticky cards and SAS 9.2 code used.

V	Post1	0x	P	0
V	Post1	1x	P	0
V	Post1	2x	P	5
V	Post2	0x	P	7
V	Post2	1x	P	0
V	Post2	2x	P	2
V	Post3	0x	P	10
V	Post3	1x	P	3
V	Post3	2x	P	7
V	Post4	2x	P	4
V	Post4	0x	P	2
V	Post4	1x	P	2
V	Post5	0x	P	4
V	Post5	1x	P	4
V	Post5	2x	P	1
V	Post6	0x	P	17
V	Post6	1x	P	8
V	Post6	2x	P	20

;

```
Proc mixed method = type3;
class site timing treatment;
model NE = site timing treatment timing*treatment / ddfm = satterth;
slice timing*treatment / sliceby = timing diff lines;
run;
quit;
```

**Appendix C:** Natural enemy abundance values collected in 2013/2014 combined from prairie hay fields with yellow sticky cards and SAS 9.2 code used.

data NE;

input year \$ site \$ timing \$ treatment \$ distance \$ NE;

cards;

2013	H	Pre	0x	P	5
2013	H	Pre	1x	P	2
2013	H	Pre	2x	P	1
2013	H	Post1	0x	P	5
2013	H	Post1	1x	P	2
2013	H	Post1	2x	P	5
2013	H	Post2	0x	P	2
2013	H	Post2	1x	P	1
2013	H	Post2	2x	P	3
2013	H	Post3	0x	P	5
2013	H	Post3	1x	P	5
2013	H	Post3	2x	P	18
2013	H	Post4	0x	P	13
2013	H	Post4	1x	P	3
2013	H	Post4	2x	P	8
2013	H	Post5	0x	P	3
2013	H	Post5	1x	P	3
2013	H	Post5	2x	P	2
2013	H	Post6	0x	P	6
2013	H	Post6	1x	P	5
2013	H	Post6	2x	P	5
2013	S1	Pre	0x	P	7
2013	S1	Pre	1x	P	4
2013	S1	Pre	2x	P	6
2013	S1	Post4	0x	P	4
2013	S1	Post4	1x	P	9
2013	S1	Post4	1x	P	3
2013	S1	Post5	0x	P	1
2013	S1	Post5	1x	P	2
2013	S1	Post5	1x	P	2
2013	S1	Post6	0x	P	3
2013	S1	Post6	1x	P	12
2013	S1	Post6	1x	P	0
2013	S2	Pre	0x	P	0
2013	S2	Pre	1x	P	7
2013	S2	Pre	2x	P	10
2013	S2	Post4	0x	P	3
2013	S2	Post4	1x	P	2
2013	S2	Post5	0x	P	2
2013	S2	Post5	1x	P	3
2013	S2	Post6	0x	P	0
2013	S2	Post4	1x	P	3
2013	S2	Post6	1x	P	10
2013	S2	Post5	1x	P	38

**Appendix C.2:** Natural enemy abundance values collected in 2013/2014 combined from prairie hay fields with yellow sticky cards and SAS 9.2 code used.

2013	S2	Post6	1x	P	3
2013	V	Pre	0x	P	5
2013	V	Pre	1x	P	7
2013	V	Pre	2x	P	8
2013	V	Post1	0x	P	3
2013	V	Post1	1x	P	4
2013	V	Post1	2x	P	11
2013	V	Post2	0x	P	7
2013	V	Post2	1x	P	11
2013	V	Post2	2x	P	8
2013	V	Post3	0x	P	3
2013	V	Post3	1x	P	5
2013	V	Post3	2x	P	5
2013	V	Post4	0x	P	3
2013	V	Post4	1x	P	2
2013	V	Post4	2x	P	6
2013	V	Post5	0x	P	5
2013	V	Post5	1x	P	3
2013	V	Post5	2x	P	3
2013	V	Post6	0x	P	3
2013	V	Post6	1x	P	7
2013	V	Post6	2x	P	5
2014	H	Pre	0x	P	1
2014	H	Pre	1x	P	2
2014	H	Pre	2x	P	0
2014	H	Post1	0x	P	4
2014	H	Post1	1x	P	0
2014	H	Post1	2x	P	2
2014	H	Post2	0x	P	1
2014	H	Post2	1x	P	0
2014	H	Post2	2x	P	0
2014	H	Post3	0x	P	4
2014	H	Post3	1x	P	6
2014	H	Post3	2x	P	0
2014	H	Post4	0x	P	4
2014	H	Post4	1x	P	1
2014	H	Post4	2x	P	1
2014	H	Post5	0x	P	2
2014	H	Post5	1x	P	5
2014	H	Post5	2x	P	4
2014	H	Post6	0x	P	0
2014	H	Post6	1x	P	0
2014	H	Post6	2x	P	0
2014	S1	Pre	0x	P	11
2014	S1	Pre	1x	P	11
2014	S1	Pre	1x	P	18
2014	S1	Post4	0x	P	5



**Appendix C.3:** Natural enemy abundance values collected in 2013/2014 combined from prairie hay fields with yellow sticky cards and SAS 9.2 code used.

2014	S1	Post4	1x	P	2
2014	S1	Post4	1x	P	1
2014	S1	Post5	0x	P	1
2014	S1	Post5	1x	P	1
2014	S1	Post5	1x	P	2
2014	S1	Post6	1x	P	2
2014	S1	Post6	0x	P	0
2014	S1	Post6	1x	P	2
2014	S2	Pre	0x	P	1
2014	S2	Pre	1x	P	2
2014	S2	Post4	0x	P	4
2014	S2	Post4	1x	P	0
2014	S2	Post5	0x	P	0
2014	S2	Post5	1x	P	1
2014	S2	Post6	0x	P	2
2014	S2	Post6	1x	P	0
2014	V	Pre	0x	P	10
2014	V	Pre	1x	P	10
2014	V	Pre	2x	P	8
2014	V	Post1	0x	P	0
2014	V	Post1	1x	P	0
2014	V	Post1	2x	P	5
2014	V	Post2	0x	P	7
2014	V	Post2	1x	P	0
2014	V	Post2	2x	P	2
2014	V	Post3	0x	P	10
2014	V	Post3	1x	P	3
2014	V	Post3	2x	P	7
2014	V	Post4	2x	P	4
2014	V	Post4	0x	P	2
2014	V	Post4	1x	P	2
2014	V	Post5	0x	P	4
2014	V	Post5	1x	P	4
2014	V	Post5	2x	P	1
2014	V	Post6	0x	P	17
2014	V	Post6	1x	P	8
2014	V	Post6	2x	P	20

;

```

Proc mixed method = type3;
class year site timing treatment;
model NE = year site timing treatment timing*treatment / ddfm = satterth;
slice timing*treatment / sliceby = timing diff lines;

run;
quit;

```

**Appendix D:** Beneficial arthropod abundance values collected in 2013 from prairie hay fields with pitfall traps and SAS 9.2 code used.

data NE;

input site \$ timing \$ treatment \$ distance \$ trap \$ NE;

cards;

H	Pre	0x	P	1	0
H	Pre	0x	P	2	0
H	Pre	1x	P	1	2
H	Pre	1x	P	2	0
H	Pre	2x	P	1	2
H	Pre	2x	P	1	1
H	Post1	0x	P	1	3
H	Post1	0x	P	2	1
H	Post1	1x	P	1	4
H	Post1	1x	P	1	3
H	Post1	2x	P	1	4
H	Post1	2x	P	2	3
V	Pre	0x	P	1	17
V	Pre	0x	P	2	5
V	Pre	1x	P	1	6
V	Pre	1x	P	2	4
V	Pre	2x	P	1	5
V	Pre	2x	P	2	9
H	Post2	0x	P	1	16
H	Post2	0x	P	2	1
H	Post2	1x	P	1	3
H	Post2	1x	P	2	1
H	Post2	2x	P	1	2
H	Post2	2x	P	2	6
H	Post3	0x	P	1	4
H	Post3	0x	P	2	1
H	Post3	1x	P	1	2
H	Post3	1x	P	2	12
H	Post3	2x	P	1	4
H	Post3	2x	P	2	1
V	Post1	0x	P	1	4
V	Post1	0x	P	2	2
V	Post1	1x	P	1	2
V	Post1	1x	P	2	0
V	Post1	2x	P	1	0
V	Post1	2x	P	2	0
V	Post2	0x	P	1	5
V	Post2	0x	P	2	2
V	Post2	1x	P	1	3
V	Post2	1x	P	2	1
V	Post2	2x	P	1	8
V	Post2	2x	P	2	0
S1	Pre	0x	P	1	1
S1	Pre	0x	P	2	2

**Appendix D.2:** Beneficial arthropod abundance values collected in 2013 from prairie hay fields with pitfall traps and SAS 9.2 code used.

S1	Pre	1x	P	1	7
S1	Pre	1x	P	2	1
S1	Pre	2x	P	1	1
S1	Pre	2x	P	2	3
S2	Pre	0x	P	1	4
S2	Pre	0x	P	2	4
S2	Pre	1x	P	1	7
S2	Pre	1x	P	2	2
S2	Pre	2x	P	1	4
S2	Pre	2x	P	2	4
V	Post3	0x	P	1	2
V	Post3	0x	P	2	2
V	Post3	1x	P	1	2
V	Post3	1x	P	2	1
V	Post3	2x	P	1	0
V	Post3	2x	P	2	1
S1	Post4	0x	P	1	2
S1	Post4	0x	P	2	1
S1	Post4	1x	P	1	1
S1	Post4	1x	P	2	5
S1	Post4	1x	P	1	1
S1	Post4	1x	P	2	1
S2	Post4	0x	P	1	3
S2	Post4	0x	P	2	4
S2	Post4	1x	P	1	4
S2	Post4	1x	P	2	3
S1	Post5	0x	P	1	6
S1	Post5	0x	P	2	6
S1	Post5	1x	P	1	3
S1	Post5	1x	P	2	2
S1	Post5	1x	P	1	2
S1	Post5	1x	P	2	0
S2	Post5	0x	P	1	2
S2	Post5	0x	P	2	4
S2	Post5	1x	P	1	2
S2	Post5	1x	P	2	0
S1	Post6	0x	P	1	8
S1	Post6	0x	P	2	4
S1	Post6	1x	P	1	7
S1	Post6	1x	P	2	0
S1	Post6	1x	P	1	8
S1	Post6	1x	P	2	11
S2	Post6	0x	P	1	5
S2	Post6	0x	P	2	7
S2	Post4	1x	P	1	1
S2	Post4	1x	P	2	6
S2	Post6	1x	P	1	1

**Appendix D.3:** Beneficial arthropod abundance values collected in 2013 from prairie hay fields with pitfall traps and SAS 9.2 code used.

S2	Post6	1x	P	2	0
S2	Post5	1x	P	1	5
S2	Post5	1x	P	2	5
S2	Post6	1x	P	1	2
S2	Post6	1x	P	2	2
V	Post4	0x	P	1	0
V	Post4	0x	P	2	0
V	Post4	1x	P	1	0
V	Post4	1x	P	2	2
V	Post4	2x	P	1	0
V	Post4	2x	P	2	1
V	Post5	0x	P	1	3
V	Post5	0x	P	2	0
V	Post5	1x	P	1	3
V	Post5	1x	P	2	2
V	Post5	2x	P	1	2
V	Post5	2x	P	2	4
V	Post6	0x	P	1	0
V	Post6	0x	P	2	1
V	Post6	1x	P	1	0
V	Post6	1x	P	2	2
V	Post6	2x	P	1	1
V	Post6	2x	P	2	0
H	Post4	0x	P	1	0
H	Post4	0x	P	2	2
H	Post4	1x	P	1	2
H	Post4	1x	P	2	2
H	Post4	2x	P	1	0
H	Post4	2x	P	2	1
H	Post5	0x	P	1	2
H	Post5	0x	P	2	1
H	Post5	1x	P	1	1
H	Post5	1x	P	2	4
H	Post5	2x	P	1	0
H	Post5	2x	P	2	1
H	Post6	0x	P	1	0
H	Post6	0x	P	2	1
H	Post6	1x	P	1	4
H	Post6	1x	P	2	1
H	Post6	2x	P	1	3
H	Post6	2x	P	2	2

```

;
proc sort data=NE;
by site timing treatment distance;
run;
proc means data=NE;
by site timing treatment distance;

```

**Appendix D.4:** Beneficial arthropod abundance values collected in 2013 from prairie hay fields with pitfall traps and SAS 9.2 code used.

```
var NE;  
output out=mean_NE mean=mean_NE;  
run;  
  
proc mixed data=mean_NE;  
class site timing treatment;  
model mean_NE= site timing treatment timing*treatment / ddfm = satterth;  
slice timing*treatment / sliceby = timing diff lines;  
run;
```

**Appendix E:** Beneficial arthropod abundance values collected in 2014 from prairie hay fields with pitfall traps and SAS 9.2 code used.

data NE;

input site \$ timing \$ treatment \$ distance \$ trap \$ NE;

cards;

H	Pre	0x	P	1	49
H	Pre	0x	P	2	3
H	Pre	1x	P	1	37
H	Pre	1x	P	2	6
H	Pre	2x	P	1	11
H	Pre	2x	P	2	4
V	Pre	0x	P	1	10
V	Pre	0x	P	2	7
V	Pre	1x	P	1	5
V	Pre	1x	P	2	4
V	Pre	2x	P	1	4
V	Pre	2x	P	2	7
H	Post1	0x	P	1	7
H	Post1	0x	P	2	6
H	Post1	1x	P	1	3
H	Post1	1x	P	2	12
H	Post1	2x	P	1	12
H	Post1	2x	P	2	5
V	Post1	0x	P	1	8
V	Post1	0x	P	2	5
V	Post1	1x	P	1	9
V	Post1	1x	P	2	1
V	Post1	2x	P	1	4
V	Post1	2x	P	2	5
H	Post2	0x	P	1	3
H	Post2	0x	P	2	1
H	Post2	1x	P	1	0
H	Post2	1x	P	2	10
H	Post2	2x	P	1	1
H	Post2	2x	P	2	5
H	Post3	0x	P	1	45
H	Post3	0x	P	2	5
H	Post3	1x	P	1	9
H	Post3	1x	P	2	3
H	Post3	2x	P	1	12
H	Post3	2x	P	2	5
V	Post2	0x	P	1	7
V	Post2	0x	P	2	4
V	Post2	1x	P	1	5
V	Post2	1x	P	2	12
V	Post2	2x	P	1	2
V	Post2	2x	P	2	2
S1	Pre	0x	P	1	29
S1	Pre	0x	P	2	9

**Appendix E.2:** Beneficial arthropod abundance values collected in 2014 from prairie hay fields with pitfall traps and SAS 9.2 code used.

S1	Pre	1x	P	1	7
S1	Pre	1x	P	2	0
S1	Pre	1x	P	1	11
S1	Pre	1x	P	2	3
S2	Pre	0x	P	1	2
S2	Pre	0x	P	2	1
S2	Pre	1x	P	1	5
S2	Pre	1x	P	2	2
V	Post3	0x	P	1	16
V	Post3	0x	P	2	7
V	Post3	1x	P	1	7
V	Post3	1x	P	2	11
V	Post3	2x	P	1	4
V	Post3	2x	P	2	1
S1	Post4	0x	P	1	11
S1	Post4	0x	P	2	21
S1	Post4	1x	P	1	3
S1	Post4	1x	P	2	8
S1	Post4	1x	P	1	2
S1	Post4	1x	P	2	3
S2	Post4	0x	P	1	77
S2	Post4	0x	P	2	32
S2	Post4	1x	P	1	17
S2	Post4	1x	P	2	2
S1	Post5	0x	P	1	.
S1	Post5	0x	P	2	7
S1	Post5	1x	P	1	3
S1	Post5	1x	P	2	8
S1	Post5	1x	P	1	10
S1	Post5	1x	P	2	0
S2	Post5	0x	P	1	25
S2	Post5	0x	P	2	0
S2	Post5	1x	P	1	6
S2	Post5	1x	P	2	0
V	Post4	0x	P	1	11
V	Post4	0x	P	2	5
V	Post4	1x	P	1	.
V	Post4	1x	P	2	1
V	Post4	2x	P	1	3
V	Post4	2x	P	2	3
S1	Post6	0x	P	1	5
S1	Post6	0x	P	2	15
S1	Post6	1x	P	1	8
S1	Post6	1x	P	2	8
S1	Post6	1x	P	1	7
S1	Post6	1x	P	2	10
S2	Post6	0x	P	1	1

**Appendix E.3:** Beneficial arthropod abundance values collected in 2014 from prairie hay fields with pitfall traps and SAS 9.2 code used.

S2	Post6	0x	P	2	9
S2	Post6	1x	P	1	2
S2	Post6	1x	P	2	9
V	Post5	0x	P	1	4
V	Post5	0x	P	2	9
V	Post5	1x	P	1	8
V	Post5	1x	P	2	8
V	Post5	2x	P	1	3
V	Post5	2x	P	2	0
V	Post6	0x	P	1	6
V	Post6	0x	P	2	3
V	Post6	1x	P	1	6
V	Post6	1x	P	2	7
V	Post6	2x	P	1	3
V	Post6	2x	P	2	0
H	Post4	0x	P	1	4
H	Post4	0x	P	2	5
H	Post4	1x	P	1	6
H	Post4	1x	P	2	11
H	Post4	2x	P	1	11
H	Post4	2x	P	2	4
H	Post5	0x	P	1	1
H	Post5	0x	P	2	4
H	Post5	1x	P	1	2
H	Post5	1x	P	2	10
H	Post5	2x	P	1	5
H	Post5	2x	P	2	14
H	Post6	0x	P	1	0
H	Post6	0x	P	2	3
H	Post6	1x	P	1	6
H	Post6	1x	P	2	12
H	Post6	2x	P	1	31
H	Post6	2x	P	2	12

```

;
proc sort data=NE;
by site timing treatment distance;
run;
proc means data=NE;
by site timing treatment distance;
var NE;
output out=mean_NE mean=mean_NE;
run;
proc mixed data=mean_NE;
class site timing treatment;
model mean_NE= site timing treatment timing*treatment / ddfm = satterth;
slice timing*treatment / sliceby = timing diff lines;
run;
```



**Appendix F:** Beneficial arthropod abundance values collected in 2013/2014 combined from prairie hay fields with pitfall traps and SAS 9.2 code used.

data NE;

input year \$ site \$ timing \$ treatment \$ distance \$ trap \$ NE;

cards;

2013	H	Pre	0x	P	1	0
2013	H	Pre	0x	P	2	0
2013	H	Pre	1x	P	1	2
2013	H	Pre	1x	P	2	0
2013	H	Pre	2x	P	1	2
2013	H	Pre	2x	P	1	1
2013	H	Post1	0x	P	1	3
2013	H	Post1	0x	P	2	1
2013	H	Post1	1x	P	1	4
2013	H	Post1	1x	P	1	3
2013	H	Post1	2x	P	1	4
2013	H	Post1	2x	P	2	3
2013	V	Pre	0x	P	1	17
2013	V	Pre	0x	P	2	5
2013	V	Pre	1x	P	1	6
2013	V	Pre	1x	P	2	4
2013	V	Pre	2x	P	1	5
2013	V	Pre	2x	P	2	9
2013	H	Post2	0x	P	1	16
2013	H	Post2	0x	P	2	1
2013	H	Post2	1x	P	1	3
2013	H	Post2	1x	P	2	1
2013	H	Post2	2x	P	1	2
2013	H	Post2	2x	P	2	6
2013	H	Post3	0x	P	1	4
2013	H	Post3	0x	P	2	1
2013	H	Post3	1x	P	1	2
2013	H	Post3	1x	P	2	12
2013	H	Post3	2x	P	1	4
2013	H	Post3	2x	P	2	1
2013	V	Post1	0x	P	1	4
2013	V	Post1	0x	P	2	2
2013	V	Post1	1x	P	1	2
2013	V	Post1	1x	P	2	0
2013	V	Post1	2x	P	1	0
2013	V	Post1	2x	P	2	0
2013	V	Post2	0x	P	1	5
2013	V	Post2	0x	P	2	2
2013	V	Post2	1x	P	1	3
2013	V	Post2	1x	P	2	1
2013	V	Post2	2x	P	1	8
2013	V	Post2	2x	P	2	0
2013	S1	Pre	0x	P	1	1
2013	S1	Pre	0x	P	2	2

**Appendix F.2:** Beneficial arthropod abundance values collected in 2013/2014 combined from prairie hay fields with pitfall traps and SAS 9.2 code used.

2013	S1	Pre	1x	P	1	7
2013	S1	Pre	1x	P	2	1
2013	S1	Pre	1x	P	1	1
2013	S1	Pre	1x	P	2	3
2013	S2	Pre	0x	P	1	4
2013	S2	Pre	0x	P	2	4
2013	S2	Pre	1x	P	1	7
2013	S2	Pre	1x	P	2	2
2013	S2	Pre	1x	P	1	4
2013	S2	Pre	1x	P	2	4
2013	V	Post3	0x	P	1	2
2013	V	Post3	0x	P	2	2
2013	V	Post3	1x	P	1	2
2013	V	Post3	1x	P	2	1
2013	V	Post3	2x	P	1	0
2013	V	Post3	2x	P	2	1
2013	S1	Post4	0x	P	1	2
2013	S1	Post4	0x	P	2	1
2013	S1	Post4	1x	P	1	1
2013	S1	Post4	1x	P	2	5
2013	S1	Post4	1x	P	1	1
2013	S1	Post4	1x	P	2	1
2013	S2	Post4	0x	P	1	3
2013	S2	Post4	0x	P	2	4
2013	S2	Post4	1x	P	1	4
2013	S2	Post4	1x	P	2	3
2013	S1	Post5	0x	P	1	6
2013	S1	Post5	0x	P	2	6
2013	S1	Post5	1x	P	1	3
2013	S1	Post5	1x	P	2	2
2013	S1	Post5	1x	P	1	2
2013	S1	Post5	1x	P	2	0
2013	S2	Post5	0x	P	1	2
2013	S2	Post5	0x	P	2	4
2013	S2	Post5	1x	P	1	2
2013	S2	Post5	1x	P	2	0
2013	S1	Post6	0x	P	1	8
2013	S1	Post6	0x	P	2	4
2013	S1	Post6	1x	P	1	7
2013	S1	Post6	1x	P	2	0
2013	S1	Post6	1x	P	1	8
2013	S1	Post6	1x	P	2	11
2013	S2	Post6	0x	P	1	5
2013	S2	Post6	0x	P	2	7
2013	S2	Post4	1x	P	1	1
2013	S2	Post4	1x	P	2	6
2013	S2	Post6	1x	P	1	1

**Appendix F.3:** Beneficial arthropod abundance values collected in 2013/2014 combined from prairie hay fields with pitfall traps and SAS 9.2 code used.

2013	S2	Post6	1x	P	2	0
2013	S2	Post5	1x	P	1	5
2013	S2	Post5	1x	P	2	5
2013	S2	Post6	1x	P	1	2
2013	S2	Post6	1x	P	2	2
2013	V	Post4	0x	P	1	0
2013	V	Post4	0x	P	2	0
2013	V	Post4	1x	P	1	0
2013	V	Post4	1x	P	2	2
2013	V	Post4	2x	P	1	0
2013	V	Post4	2x	P	2	1
2013	V	Post5	0x	P	1	3
2013	V	Post5	0x	P	2	0
2013	V	Post5	1x	P	1	3
2013	V	Post5	1x	P	2	2
2013	V	Post5	2x	P	1	2
2013	V	Post5	2x	P	2	4
2013	V	Post6	0x	P	1	0
2013	V	Post6	0x	P	2	1
2013	V	Post6	1x	P	1	0
2013	V	Post6	1x	P	2	2
2013	V	Post6	2x	P	1	1
2013	V	Post6	2x	P	2	0
2013	H	Post4	0x	P	1	0
2013	H	Post4	0x	P	2	2
2013	H	Post4	1x	P	1	2
2013	H	Post4	1x	P	2	2
2013	H	Post4	2x	P	1	0
2013	H	Post4	2x	P	2	1
2013	H	Post5	0x	P	1	2
2013	H	Post5	0x	P	2	1
2013	H	Post5	1x	P	1	1
2013	H	Post5	1x	P	2	4
2013	H	Post5	2x	P	1	0
2013	H	Post5	2x	P	2	1
2013	H	Post6	0x	P	1	0
2013	H	Post6	0x	P	2	1
2013	H	Post6	1x	P	1	4
2013	H	Post6	1x	P	2	1
2013	H	Post6	2x	P	1	3
2013	H	Post6	2x	P	2	2
2014	H	Pre	0x	P	1	49
2014	H	Pre	0x	P	2	3
2014	H	Pre	1x	P	1	37
2014	H	Pre	1x	P	2	6
2014	H	Pre	2x	P	1	11
2014	H	Pre	2x	P	2	4

**Appendix F.4:** Beneficial arthropod abundance values collected in 2013/2014 combined from prairie hay fields with pitfall traps and SAS 9.2 code used.

2014	V	Pre	0x	P	1	10
2014	V	Pre	0x	P	2	7
2014	V	Pre	1x	P	1	5
2014	V	Pre	1x	P	2	4
2014	V	Pre	2x	P	1	4
2014	V	Pre	2x	P	2	7
2014	H	Post1	0x	P	1	7
2014	H	Post1	0x	P	2	6
2014	H	Post1	1x	P	1	3
2014	H	Post1	1x	P	2	12
2014	H	Post1	2x	P	1	12
2014	H	Post1	2x	P	2	5
2014	V	Post1	0x	P	1	8
2014	V	Post1	0x	P	2	5
2014	V	Post1	1x	P	1	9
2014	V	Post1	1x	P	2	1
2014	V	Post1	2x	P	1	4
2014	V	Post1	2x	P	2	5
2014	H	Post2	0x	P	1	3
2014	H	Post2	0x	P	2	1
2014	H	Post2	1x	P	1	0
2014	H	Post2	1x	P	2	10
2014	H	Post2	2x	P	1	1
2014	H	Post2	2x	P	2	5
2014	H	Post3	0x	P	1	45
2014	H	Post3	0x	P	2	5
2014	H	Post3	1x	P	1	9
2014	H	Post3	1x	P	2	3
2014	H	Post3	2x	P	1	12
2014	H	Post3	2x	P	2	5
2014	V	Post2	0x	P	1	7
2014	V	Post2	0x	P	2	4
2014	V	Post2	1x	P	1	5
2014	V	Post2	1x	P	2	12
2014	V	Post2	2x	P	1	2
2014	V	Post2	2x	P	2	2
2014	S1	Pre	0x	P	1	29
2014	S1	Pre	0x	P	2	9
2014	S1	Pre	1x	P	1	7
2014	S1	Pre	1x	P	2	0
2014	S1	Pre	1x	P	1	11
2014	S1	Pre	1x	P	2	3
2014	S2	Pre	0x	P	1	2
2014	S2	Pre	0x	P	2	1
2014	S2	Pre	1x	P	1	5
2014	S2	Pre	1x	P	2	2
2014	V	Post3	0x	P	1	16

**Appendix F.5:** Beneficial arthropod abundance values collected in 2013/2014 combined from prairie hay fields with pitfall traps and SAS 9.2 code used.

2014	V	Post3	0x	P	2	7
2014	V	Post3	1x	P	1	7
2014	V	Post3	1x	P	2	11
2014	V	Post3	2x	P	1	4
2014	V	Post3	2x	P	2	1
2014	S1	Post4	0x	P	1	11
2014	S1	Post4	0x	P	2	21
2014	S1	Post4	1x	P	1	3
2014	S1	Post4	1x	P	2	8
2014	S1	Post4	1x	P	1	2
2014	S1	Post4	1x	P	2	3
2014	S2	Post4	0x	P	1	77
2014	S2	Post4	0x	P	2	32
2014	S2	Post4	1x	P	1	17
2014	S2	Post4	1x	P	2	2
2014	S1	Post5	0x	P	1	.
2014	S1	Post5	0x	P	2	7
2014	S1	Post5	1x	P	1	3
2014	S1	Post5	1x	P	2	8
2014	S1	Post5	1x	P	1	10
2014	S1	Post5	1x	P	2	0
2014	S2	Post5	0x	P	1	25
2014	S2	Post5	0x	P	2	0
2014	S2	Post5	1x	P	1	6
2014	S2	Post5	1x	P	2	0
2014	V	Post4	0x	P	1	11
2014	V	Post4	0x	P	2	5
2014	V	Post4	1x	P	1	.
2014	V	Post4	1x	P	2	1
2014	V	Post4	2x	P	1	3
2014	V	Post4	2x	P	2	3
2014	S1	Post6	0x	P	1	5
2014	S1	Post6	0x	P	2	15
2014	S1	Post6	1x	P	1	8
2014	S1	Post6	1x	P	2	8
2014	S1	Post6	1x	P	1	7
2014	S1	Post6	1x	P	2	10
2014	S2	Post6	0x	P	1	1
2014	S2	Post6	0x	P	2	9
2014	S2	Post6	1x	P	1	2
2014	S2	Post6	1x	P	2	9
2014	V	Post5	0x	P	1	4
2014	V	Post5	0x	P	2	9
2014	V	Post5	1x	P	1	8
2014	V	Post5	1x	P	2	8
2014	V	Post5	2x	P	1	3
2014	V	Post5	2x	P	2	0

**Appendix F.6:** Beneficial arthropod abundance values collected in 2013/2014 combined from prairie hay fields with pitfall traps and SAS 9.2 code used.

2014	V	Post6	0x	P	1	6
2014	V	Post6	0x	P	2	3
2014	V	Post6	1x	P	1	6
2014	V	Post6	1x	P	2	7
2014	V	Post6	2x	P	1	3
2014	V	Post6	2x	P	2	0
2014	H	Post4	0x	P	1	4
2014	H	Post4	0x	P	2	5
2014	H	Post4	1x	P	1	6
2014	H	Post4	1x	P	2	11
2014	H	Post4	2x	P	1	11
2014	H	Post4	2x	P	2	4
2014	H	Post5	0x	P	1	1
2014	H	Post5	0x	P	2	4
2014	H	Post5	1x	P	1	2
2014	H	Post5	1x	P	2	10
2014	H	Post5	2x	P	1	5
2014	H	Post5	2x	P	2	14
2014	H	Post6	0x	P	1	0
2014	H	Post6	0x	P	2	3
2014	H	Post6	1x	P	1	6
2014	H	Post6	1x	P	2	12
2014	H	Post6	2x	P	1	31
2014	H	Post6	2x	P	2	12

;

```
proc sort data=NE;
```

```
by year site timing treatment distance;
```

```
run;
```

```
proc means data=NE;
```

```
by year site timing treatment distance;
```

```
var NE;
```

```
output out=mean_NE mean=mean_NE;
```

```
run;
```

```
proc mixed data=mean_NE;
```

```
class year site timing treatment;
```

```
model mean_NE=year site timing treatment timing*treatment / ddfm = satterth;
```

```
slice timing*treatment / sliceby = timing diff lines;
```

```
run;
```

**Appendix G:** Natural enemy abundance values collected in 2013 from prairie hay fields with a sweep net and SAS 9.2 code used.

data NE;

input site \$ timing \$ treatment \$ NE;

cards;

H	Pre	0x	1
H	Pre	1x	2
H	Pre	2x	2
H	Post1	0x	5
H	Post1	1x	4
H	Post1	2x	1
V	Pre	0x	1
V	Pre	1x	4
V	Pre	2x	0
H	Post2	0x	0
H	Post2	1x	1
H	Post2	2x	0
H	Post3	0x	4
H	Post3	1x	4
H	Post3	2x	1
V	Post1	0x	1
V	Post1	1x	0
V	Post1	2x	1
V	Post2	0x	5
V	Post2	1x	2
V	Post2	2x	5
S1	Pre	0x	6
S1	Pre	1x	5
S1	Pre	1x	0
S2	Pre	0x	5
S2	Pre	1x	4
S2	Pre	1x	15
V	Post3	0x	1
V	Post3	1x	3
V	Post3	2x	0
S1	Post4	0x	0
S1	Post4	1x	5
S1	Post4	1x	0
S2	Post4	0x	0
S2	Post4	1x	3
S1	Post5	0x	3
S1	Post5	1x	3
S1	Post5	1x	0
S2	Post5	0x	0
S2	Post5	1x	2
S1	Post6	0x	0
S1	Post6	1x	0
S1	Post6	1x	2
S2	Post6	0x	1

**Appendix G.2:** Natural enemy abundance values collected in 2013 from prairie hay fields with a sweep net and SAS 9.2 code used.

S2	Post4	1x	4
S2	Post6	1x	9
S2	Post5	1x	2
S2	Post6	1x	15
V	Post4	0x	0
V	Post4	1x	0
V	Post4	2x	0
V	Post5	0x	0
V	Post5	1x	3
V	Post5	2x	2
H	Post4	0x	0
H	Post4	1x	1
H	Post4	2x	5
V	Post6	0x	0
V	Post6	1x	1
V	Post6	2x	1
H	Post5	0x	3
H	Post5	1x	1
H	Post5	2x	2
H	Post6	0x	4
H	Post6	1x	2
H	Post6	2x	1

;

```

Proc mixed method = type3;
class site timing treatment;
model NE = site timing treatment timing*treatment / ddfm = satterth;
slice timing*treatment / sliceby = timing diff lines;

run;
quit;

```



**Appendix H:** Natural enemy abundance values collected in 2014 from prairie hay fields with a sweep net and SAS 9.2 code used.

data NE;

input site \$ timing \$ treatment \$ NE;

cards;

H	Pre	0x	2
H	Pre	1x	10
H	Pre	2x	11
V	Pre	0x	0
V	Pre	1x	2
V	Pre	2x	4
H	Post1	0x	4
H	Post1	1x	2
H	Post1	2x	4
H	Post2	0x	7
H	Post2	1x	1
H	Post2	2x	0
V	Post1	0x	3
V	Post1	1x	1
V	Post1	2x	1
H	Post3	0x	1
H	Post3	1x	2
H	Post3	2x	2
V	Post2	0x	2
V	Post2	1x	2
V	Post2	2x	2
S1	Pre	0x	2
S1	Pre	1x	1
S1	Pre	1x	2
S2	Pre	0x	10
S2	Pre	1x	1
V	Post3	0x	1
V	Post3	1x	0
V	Post3	2x	1
S1	Post4	0x	0
S1	Post4	1x	4
S1	Post4	1x	1
S2	Post4	0x	0
S2	Post4	1x	2
S1	Post5	0x	3
S1	Post5	1x	0
S1	Post5	1x	1
S2	Post5	0x	0
S2	Post5	1x	0
V	Post4	0x	0
V	Post4	1x	0
V	Post4	2x	0
S1	Post6	0x	0
S1	Post6	1x	0

**Appendix H:** Natural enemy abundance values collected in 2014 from prairie hay fields with a sweep net and SAS 9.2 code used.

S1	Post6	1x	1
S2	Post6	0x	0
S2	Post6	1x	0
V	Post5	0x	0
V	Post5	1x	0
V	Post5	2x	0
V	Post6	0x	2
V	Post6	1x	3
V	Post6	2x	0
H	Post4	0x	1
H	Post4	1x	1
H	Post4	2x	0
H	Post5	0x	3
H	Post5	1x	0
H	Post5	2x	1
H	Post6	0x	0
H	Post6	1x	1
H	Post6	2x	2

;

```
Proc mixed method = type3;
class site timing treatment;
model NE = site timing treatment timing*treatment / ddfm = satterth;
slice timing*treatment / sliceby = timing diff lines;

run;
quit;
```

**Appendix I:** Natural enemy abundance values collected in 2013/2014 combined from prairie hay fields with a sweep net and SAS 9.2 code used.

data NE;

input site \$ year \$ timing \$ treatment \$ NE;

cards;

H	2013	Pre	0x	1
H	2013	Pre	1x	2
H	2013	Pre	2x	2
H	2013	Post1	0x	5
H	2013	Post1	1x	4
H	2013	Post1	2x	1
V	2013	Pre	0x	1
V	2013	Pre	1x	4
V	2013	Pre	2x	0
H	2013	Post2	0x	0
H	2013	Post2	1x	1
H	2013	Post2	2x	0
H	2013	Post3	0x	4
H	2013	Post3	1x	4
H	2013	Post3	2x	1
V	2013	Post1	0x	1
V	2013	Post1	1x	0
V	2013	Post1	2x	1
V	2013	Post2	0x	5
V	2013	Post2	1x	2
V	2013	Post2	2x	5
S1	2013	Pre	0x	6
S1	2013	Pre	1x	5
S1	2013	Pre	1x	0
S2	2013	Pre	0x	5
S2	2013	Pre	1x	4
S2	2013	Pre	1x	15
V	2013	Post3	0x	1
V	2013	Post3	1x	3
V	2013	Post3	2x	0
S1	2013	Post4	0x	0
S1	2013	Post4	1x	5
S1	2013	Post4	1x	0
S2	2013	Post4	0x	0
S2	2013	Post4	1x	3
S1	2013	Post5	0x	3
S1	2013	Post5	1x	3
S1	2013	Post5	1x	0
S2	2013	Post5	0x	0
S2	2013	Post5	1x	2
S1	2013	Post6	0x	0
S1	2013	Post6	1x	0
S1	2013	Post6	1x	2
S2	2013	Post6	0x	1

**Appendix I.2:** Natural enemy abundance values collected in 2013/2014 combined from prairie hay fields with a sweep net and SAS 9.2 code used.

S2	2013	Post4	1x	4
S2	2013	Post6	1x	9
S2	2013	Post5	1x	2
S2	2013	Post6	1x	15
V	2013	Post4	0x	0
V	2013	Post4	1x	0
V	2013	Post4	2x	0
V	2013	Post5	0x	0
V	2013	Post5	1x	3
V	2013	Post5	2x	2
H	2013	Post4	0x	0
H	2013	Post4	1x	1
H	2013	Post4	2x	5
V	2013	Post6	0x	0
V	2013	Post6	1x	1
V	2013	Post6	2x	1
H	2013	Post5	0x	3
H	2013	Post5	1x	1
H	2013	Post5	2x	2
H	2013	Post6	0x	4
H	2013	Post6	1x	2
H	2013	Post6	2x	1
H	2014	Pre	0x	2
H	2014	Pre	1x	10
H	2014	Pre	2x	11
V	2014	Pre	0x	0
V	2014	Pre	1x	2
V	2014	Pre	2x	4
H	2014	Post1	0x	4
H	2014	Post1	1x	2
H	2014	Post1	2x	4
H	2014	Post2	0x	7
H	2014	Post2	1x	1
H	2014	Post2	2x	0
V	2014	Post1	0x	3
V	2014	Post1	1x	1
V	2014	Post1	2x	1
H	2014	Post3	0x	1
H	2014	Post3	1x	2
H	2014	Post3	2x	2
V	2014	Post2	0x	2
V	2014	Post2	1x	2
V	2014	Post2	2x	2
S1	2014	Pre	0x	2
S1	2014	Pre	1x	1
S1	2014	Pre	1x	2
S2	2014	Pre	0x	10

**Appendix I.3:** Natural enemy abundance values collected in 2013/2014 combined from prairie hay fields with a sweep net and SAS 9.2 code used.

S2	2014	Pre	1x	1
V	2014	Post3	0x	1
V	2014	Post3	1x	0
V	2014	Post3	2x	1
S1	2014	Post4	0x	0
S1	2014	Post4	1x	4
S1	2014	Post4	1x	1
S2	2014	Post4	0x	0
S2	2014	Post4	1x	2
S1	2014	Post5	0x	3
S1	2014	Post5	1x	0
S1	2014	Post5	1x	1
S2	2014	Post5	0x	0
S2	2014	Post5	1x	0
V	2014	Post4	0x	0
V	2014	Post4	1x	0
V	2014	Post4	2x	0
S1	2014	Post6	0x	0
S1	2014	Post6	1x	0
S1	2014	Post6	1x	1
S2	2014	Post6	0x	0
S2	2014	Post6	1x	0
V	2014	Post5	0x	0
V	2014	Post5	1x	0
V	2014	Post5	2x	0
V	2014	Post6	0x	2
V	2014	Post6	1x	3
V	2014	Post6	2x	0
H	2014	Post4	0x	1
H	2014	Post4	1x	1
H	2014	Post4	2x	0
H	2014	Post5	0x	3
H	2014	Post5	1x	0
H	2014	Post5	2x	1
H	2014	Post6	0x	0
H	2014	Post6	1x	1
H	2014	Post6	2x	2

;

```

Proc mixed method = type3;
class site year timing treatment;
model NE = year site timing treatment timing*treatment / ddfm = satterth;
slice timing*treatment / sliceby = timing diff lines;

run;
quit;

```

**Appendix J:** Bee abundance values collected in 2013 from prairie hay fields with blue cross vane traps and SAS 9.2 code used.

```
data Bee;
input timing $ site $ treatment $ bees;
cards;
Post1  H      0x    11
Post1  H      1x    25
Post1  H      2x    26
Post1  V      0x     2
Post1  V      1x     0
Post1  V      2x     1
Post2  H      0x    42
Post2  H      1x    34
Post2  H      2x    37
Post2  V      0x     2
Post2  V      1x     3
Post2  V      2x     3
Post3  H      0x    37
Post3  H      1x     5
Post3  H      2x    35
Post3  V      0x     2
Post3  V      1x     0
Post3  V      2x     3
Post4  H      0x    11
Post4  H      1x     6
Post4  H      2x     6
Post4  S1     0x     8
Post4  S1     1x     7
Post4  S1     1x    12
Post4  S2     0x     8
Post4  S2     1x     1
Post4  S2     1x     1
Post4  V      0x     0
Post4  V      1x     0
Post4  V      1x     0
Post5  H      0x    17
Post5  H      1x    18
Post5  H      2x    17
Post5  S1     0x     0
Post5  S1     1x     2
Post5  S1     1x     6
Post5  S2     0x     4
Post5  S2     1x     2
Post5  S2     1x     1
Post5  V      0x     6
Post5  V      1x     1
Post5  V      2x     0
Post6  H      0x    23
Post6  H      1x    25
```

**Appendix J.2:** Bee abundance values collected in 2013 from prairie hay fields with blue cross vane traps and SAS 9.2 code used.

Post6	H	2x	22
Post6	S1	0x	2
Post6	S1	1x	11
Post6	S1	1x	3
Post6	S2	0x	5
Post6	S2	1x	4
Post6	S2	1x	1
Post6	V	0x	3
Post6	V	1x	3
Post6	V	2x	2
Pre	H	0x	21
Pre	H	1x	13
Pre	H	2x	10
Pre	S1	0x	1
Pre	S1	1x	0
Pre	S1	1x	11
Pre	S2	0x	7
Pre	S2	1x	6
Pre	S2	1x	3
Pre	S2	1x	0
Pre	V	0x	3
Pre	V	1x	8
Pre	V	2x	1

;

```

Proc mixed method = type3;
class site timing treatment;
model bees = site timing treatment timing*treatment / ddfm = satterth;
lsmeans Treatment/pdiff;

run;
quit;

```

**Appendix K:** Bee abundance values collected in 2014 from prairie hay fields with blue cross vane traps and SAS 9.2 code used.

```
data Bee;
input timing $ site $ treatment $ bees;
cards;
Post1  H      0x      3
Post1  H      1x      7
Post1  H      2x     31
Post1  V      0x      1
Post1  V      1x      0
Post1  V      2x      0
Post2  H      0x      1
Post2  H      1x      0
Post2  H      2x      1
Post2  V      0x      2
Post2  V      1x      0
Post2  V      2x      0
Post3  H      0x      1
Post3  H      1x      1
Post3  H      2x      3
Post3  V      0x      1
Post3  V      1x      1
Post3  V      2x      0
Post4  H      0x     116
Post4  H      1x     178
Post4  H      2x     250
Post4  S1     0x      22
Post4  S1     1x       2
Post4  S1     1x       6
Post4  S2     0x      11
Post4  S2     1x      16
Post4  V      0x       3
Post4  V      1x       0
Post4  V      2x       5
Post5  H      0x      55
Post5  H      1x      42
Post5  H      2x      50
Post5  S1     0x      40
Post5  S1     1x      10
Post5  S1     1x       8
Post5  S2     0x       5
Post5  S2     1x      12
Post5  V      0x      19
Post5  V      1x      24
Post5  V      2x      21
Post6  H      0x       9
Post6  H      1x      10
Post6  H      2x      16
Post6  S1     0x       2
```



**Appendix K.2:** Bee abundance values collected in 2014 from prairie hay fields with blue cross vane traps and SAS 9.2 code used.

Post6	S1	1x	3
Post6	S1	1x	1
Post6	S2	0x	3
Post6	S2	1x	2
Post6	V	0x	14
Post6	V	1x	5
Post6	V	2x	17
Pre	H	0x	75
Pre	H	1x	5
Pre	H	2x	50
Pre	S1	0x	3
Pre	S1	1x	2
Pre	S1	1x	2
Pre	S2	0x	1
Pre	S2	1x	0
Pre	V	0x	28
Pre	V	1x	6
Pre	V	2x	4

;

```

Proc mixed method = type3;
class site timing treatment;
model bees = site timing treatment timing*treatment / ddfm = satterth;
lsmeans Treatment/pdiff;

run;
quit;

```

**Appendix L:** Bee abundance values collected in 2013/2014 combined from prairie hay fields with blue cross vane traps and SAS 9.2 code used.

data Bee;

input year \$ timing \$ site \$ treatment \$ bees;

cards;

2013	Post1	H	0x	11
2013	Post1	H	1x	25
2013	Post1	H	2x	26
2013	Post1	V	0x	2
2013	Post1	V	1x	0
2013	Post1	V	2x	1
2013	Post2	H	0x	42
2013	Post2	H	1x	34
2013	Post2	H	2x	37
2013	Post2	V	0x	2
2013	Post2	V	1x	3
2013	Post2	V	2x	3
2013	Post3	H	0x	37
2013	Post3	H	1x	5
2013	Post3	H	2x	35
2013	Post3	V	0x	2
2013	Post3	V	1x	0
2013	Post3	V	2x	3
2013	Post4	H	0x	11
2013	Post4	H	1x	6
2013	Post4	H	2x	6
2013	Post4	S1	0x	8
2013	Post4	S1	1x	7
2013	Post4	S1	1x	12
2013	Post4	S2	0x	8
2013	Post4	S2	1x	1
2013	Post4	S2	1x	1
2013	Post4	V	0x	0
2013	Post4	V	1x	0
2013	Post4	V	1x	0
2013	Post5	H	0x	17
2013	Post5	H	1x	18
2013	Post5	H	2x	17
2013	Post5	S1	0x	0
2013	Post5	S1	1x	2
2013	Post5	S1	1x	6
2013	Post5	S2	0x	4
2013	Post5	S2	1x	2
2013	Post5	S2	1x	1
2013	Post5	V	0x	6
2013	Post5	V	1x	1
2013	Post5	V	2x	0
2013	Post6	H	0x	23
2013	Post6	H	1x	25

**Appendix L.2:** Bee abundance values collected in 2013/2014 combined from prairie hay fields with blue cross vane traps and SAS 9.2 code used.

2013	Post6	H	2x	22
2013	Post6	S1	0x	2
2013	Post6	S1	1x	11
2013	Post6	S1	1x	3
2013	Post6	S2	0x	5
2013	Post6	S2	1x	4
2013	Post6	S2	1x	1
2013	Post6	V	0x	3
2013	Post6	V	1x	3
2013	Post6	V	2x	2
2013	Pre	H	0x	21
2013	Pre	H	1x	13
2013	Pre	H	2x	10
2013	Pre	S1	0x	1
2013	Pre	S1	1x	0
2013	Pre	S1	1x	11
2013	Pre	S2	0x	7
2013	Pre	S2	1x	6
2013	Pre	S2	1x	3
2013	Pre	S2	1x	0
2013	Pre	V	0x	3
2013	Pre	V	1x	8
2013	Pre	V	2x	1
2014	Post1	H	0x	3
2014	Post1	H	1x	7
2014	Post1	H	2x	31
2014	Post1	V	0x	1
2014	Post1	V	1x	0
2014	Post1	V	2x	0
2014	Post2	H	0x	1
2014	Post2	H	1x	0
2014	Post2	H	2x	1
2014	Post2	V	0x	2
2014	Post2	V	1x	0
2014	Post2	V	2x	0
2014	Post3	H	0x	1
2014	Post3	H	1x	1
2014	Post3	H	2x	3
2014	Post3	V	0x	1
2014	Post3	V	1x	1
2014	Post3	V	2x	0
2014	Post4	H	0x	116
2014	Post4	H	1x	178
2014	Post4	H	2x	250
2014	Post4	S1	0x	22
2014	Post4	S1	1x	2
2014	Post4	S1	1x	6

**Appendix L.3:** Bee abundance values collected in 2013/2014 combined from prairie hay fields with blue cross vane traps and SAS 9.2 code used.

2014	Post4	S2	0x	11
2014	Post4	S2	1x	16
2014	Post4	V	0x	3
2014	Post4	V	1x	0
2014	Post4	V	2x	5
2014	Post5	H	0x	55
2014	Post5	H	1x	42
2014	Post5	H	2x	50
2014	Post5	S1	0x	40
2014	Post5	S1	1x	10
2014	Post5	S1	1x	8
2014	Post5	S2	0x	5
2014	Post5	S2	1x	12
2014	Post5	V	0x	19
2014	Post5	V	1x	24
2014	Post5	V	2x	21
2014	Post6	H	0x	9
2014	Post6	H	1x	10
2014	Post6	H	2x	16
2014	Post6	S1	0x	2
2014	Post6	S1	1x	3
2014	Post6	S1	1x	1
2014	Post6	S2	0x	3
2014	Post6	S2	1x	2
2014	Post6	V	0x	14
2014	Post6	V	1x	5
2014	Post6	V	2x	17
2014	Pre	H	0x	75
2014	Pre	H	1x	5
2014	Pre	H	2x	50
2014	Pre	S1	0x	3
2014	Pre	S1	1x	2
2014	Pre	S1	1x	2
2014	Pre	S2	0x	1
2014	Pre	S2	1x	0
2014	Pre	V	0x	28
2014	Pre	V	1x	6
2014	Pre	V	2x	4

;

```
Proc mixed method = type3;
class year site timing treatment;
model bees = year site timing treatment timing*treatment / ddfm = satterth;
lsmeans Treatment/pdiff;
```

```
run;
quit;
```

**Appendix M.** Beneficial arthropod taxa collected in prairie hay meadows with yellow sticky cards in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Pre</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	1	1	2
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	1	0	1	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	1	0	0	0	0	0	0
Dolicopodidae	0	0	0	0	0	0	0	4	2	0	1	2
Syrphidae	0	0	0	1	4	1	0	2	0	0	0	0
<i>Orius insidiosus</i>	1	0	0	0	0	0	0	0	0	0	0	0
Apoidea	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps <sup>2</sup>	4	2	1	5	0	0	0	0	7	4	5	4
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	1	0	3	0	0	1	0	0	0
<b>Post 1</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	3
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
<i>Cycloneda munda</i>	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	2	4	5
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	1
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Apoidea	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps <sup>2</sup>	5	2	3	NA	NA	NA	NA	NA	NA	0	0	2
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 2</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix M.2.** Beneficial arthropod taxa collected in prairie hay meadows with yellow sticky cards in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post2</b>												
<i>Coccinella septumpunctata</i>	0	1	1	NA	NA	NA	NA	NA	NA	0	1	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	1	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	2	5	3
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Apoidea	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps <sup>2</sup>	2	0	2	NA	NA	NA	NA	NA	NA	3	4	5
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	2	0	0
<b>Post 3</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	1	0	NA	NA	NA	NA	NA	NA	0	3	1
Syrphidae	2	1	13	NA	NA	NA	NA	NA	NA	0	0	1
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Apoidea	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps <sup>2</sup>	3	3	3	NA	NA	NA	NA	NA	NA	1	2	3
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
<b>Post 4</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix M.3.** Beneficial arthropod taxa collected in prairie hay meadows with yellow sticky cards in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post4</b>												
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	5	1	1	0	0	0	0	0	0	0	0	0
Syrphidae	0	0	0	0	0	0	0	1	0	1	2	4
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Apoidea	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps <sup>2</sup>	8	1	5	4	9	3	3	2	2	2	0	2
Tiphidae	0	1	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	2	0	0	0	0	0	0	0	0	0
<b>Post 5</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Brachiacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septempunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	1	0	1	0	0	0	1
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	1	0	0	0	0	0	1	2	1
Syrphidae	1	0	0	0	1	0	0	1	1	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Apoidea	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps <sup>2</sup>	2	3	2	0	1	1	2	36	2	4	1	1
Tiphidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Brachiacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septempunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	1	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	1	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix M.4.** Beneficial arthropod taxa collected in prairie hay meadows with yellow sticky cards in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 6</b>												
Dolichopodidae	0	1	1	0	0	0	0	0	0	2	4	2
Syrphidae	0	0	0	0	1	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Apoidea	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps <sup>2</sup>	6	3	3	2	10	0	0	3	8	0	3	2
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	1	1	0	0	0	2	1	0	1



**Appendix N.** Beneficial arthropod taxa collected in prairie hay meadows with yellow sticky cards in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Pre</b>											
Araneae	1	0	0	1	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	1	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	10	9	15	0	2	9	10	7
Syrphidae	0	0	0	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Apoidea	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	7	10	10	2	4	4	2	11	1	1	1
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	2	0	0	0	2	1	0	0	0	1
<b>Post 1</b>											
Araneae	0	0	1	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	1	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	3	0	0	NA	NA	NA	NA	NA	0	0	2
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	0	3
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Apoidea	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	2	1	5	NA	NA	NA	NA	NA	2	5	8
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	1	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 2</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix N.2.** Beneficial arthropod taxa collected in prairie hay meadows with yellow sticky cards in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 2</b>											
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	0	0	0	NA	NA	NA	NA	NA	7	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	0	2
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Apoidea	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	1	2	NA	NA	NA	NA	NA	9	6	8
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	1	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 3</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	1	0	NA	NA	NA	NA	NA	1	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	3	4	0	NA	NA	NA	NA	NA	9	3	6
Syrphidae	1	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Apoidea	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	0	0	1	NA	NA	NA	NA	NA	4	6	10
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 4</b>											
Araneae	1	0	0	2	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	1	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0

**Appendix N.3.** Beneficial arthropod taxa collected in prairie hay meadows with yellow sticky cards in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 4</b>											
<i>Hippodamia convergens</i>	0	1	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	2	1	0	1	0	2	2	2
Syrphidae	3	0	1	1	0	1	3	0	0	0	2
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Apoidea	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	37	6	18	3	6	8	12	5	8	6	8
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 5</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	1	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	1	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	2	0	0	1	0	0	0	4	3	1
Syrphidae	2	2	3	0	0	2	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	1	0
Apoidea	0	1	0	0	0	0	0	1	0	0	0
Parasitic wasps	128	132	217	0	3	3	4	4	1	0	1
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0

**Appendix N.4.** Beneficial arthropod taxa collected in prairie hay meadows with yellow sticky cards in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6</b>											
Dolichopodidae	0	0	0	0	0	0	2	0	17	8	20
Syrphidae	0	0	0	0	1	2	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Apoidea	0	0	0	0	1	0	0	0	0	0	0
Parasitic wasps	15	18	19	5	5	9	8	3	6	2	4
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0

**Appendix O.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Pre</b>												
Anypheanidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.0	0.0	1.5	0.0	1.5	0.5	3.0	9.0	4.0	6.5
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Opilones	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Carabidae	0.0	1.0	1.0	0.0	0.5	0.5	0.0	0.5	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bombyliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Apoidea	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	1.0	0.0	0.5	1.5	1.0	1.5	3.5	0.5	1.0	0.5	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 1</b>												
Anypheanidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	1.0	0.5	NA	NA	NA	NA	NA	NA	2.5	1.0	0.0

**Appendix O.2.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 1</b>												
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opilones	0.0	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	1.0	0.5	2.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	1.0	0.0
Bombyliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Apoidea	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.5	1.5	1.0	NA	NA	NA	NA	NA	NA	0.5	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2</b>												
Anypheanidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.5	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	1.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.0	0.5	0.0	NA	NA	NA	NA	NA	NA	2.0	0.5	7.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix O.3.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 2</b>												
Thomisidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	1.0	0.0
Opilones	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	1.0	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Bombyliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocridae	0.0	0.0	1.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Apoidea	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	6.0	0.0	2.0	NA	NA	NA	NA	NA	NA	1.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 3</b>												
Anypheanidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.5	0.5	0.0	NA	NA	NA	NA	NA	NA	0.5	0.5	0.5
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	0.0	0.0
Opilones	0.0	0.0	1.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	5.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix O.4.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 3</b>												
Bombyliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	1.5
Apoidea	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	0.0	0.0
Formicidae	0.5	0.5	0.0	NA	NA	NA	NA	NA	NA	1.0	1.0	0.5
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 4</b>												
Anypheanidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	1.0	0.5	0.0	0.5	0.5	0.5	0.5	0.0	1.5	0.0	0.0	1.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.5	1.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Opilones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Carabidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	1.0	0.0	1.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bombyliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocridae	1.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Apoidea	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.0	0.0	1.0	1.0	0.0	3.0	2.5	0.5	0.0	1.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



**Appendix O.5.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 4</b>												
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 5</b>												
Anypheanidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.0	0.0	1.0	0.0	0.5	0.0	0.0	1.0	0.5	1.5
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Opilones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0
Carabidae	0.0	0.5	0.0	0.5	0.5	1.0	0.0	1.0	1.0	0.0	0.5	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Bombyliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Apoidea	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	1.0	0.0	1.0	3.5	0.0	1.0	2.0	2.5	0.0	2.0	0.5	0.0
Mutillidae	0.5	2.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix O.6.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 6</b>												
Anypheanidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	0.0	1.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.5	0.5	1.0	1.0	0.5	0.5	0.0	0.0	0.0	0.0
Opilones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.0	0.0	0.0	0.5	1.0	0.5	0.0	0.0	1.0	0.0	2.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bombyliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocridae	0.0	0.5	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
Apoidea	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	1.0	0.5	4.0	4.0	3.0	4.0	0.5	0.0	0.0	0.0	0.0
Mutillidae	0.5	1.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.5	0.0	0.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix P.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	S2 0x	1x	0x	V 1x	2x
<b>Pre</b>											
Anypheanidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	1.5	0.0	0.5	0.0	0.5	0.5	0.0	0.0	2.0	1.0	1.0
Linyphiidae	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	1.5	0.0	0.5	0.5	0.0	0.0	0.5	3.5	1.5	1.5
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Opiliones	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	1.0
Carabidae	1.5	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Histeridae	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	1.5	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bombyliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0
Apoidea	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	21.5	17.5	0.5	12.0	1.5	5.0	1.5	2.0	3.0	0.0	1.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.5	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.5	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.5	0.0	0.0	1.0	0.0	0.0	0.0
<b>Post 1</b>											
Anypheanidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.5
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.0	0.0	0.5	NA	NA	NA	NA	NA	1.0	1.5	0.5

**Appendix P.2.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 1</b>											
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	1.5	1.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5
Carabidae	1.0	2.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.5	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Bombyliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Apoidea	0.5	0.5	1.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	3.0	2.5	6.0	NA	NA	NA	NA	NA	3.0	1.5	2.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.5	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	1.0	0.5	NA	NA	NA	NA	NA	0.0	0.5	1.0
<b>Post 2</b>											
Anypheanidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	1.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	1.0	2.5	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix P.3.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 2</b>											
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	1.0
Carabidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	1.5	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Bombyliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Apoidea	0.0	1.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	1.5	1.5	2.0	NA	NA	NA	NA	NA	2.5	5.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.5	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.5
<b>Post 3</b>											
Anypheanidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	0.5	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	3.0	0.5	1.0	NA	NA	NA	NA	NA	0.5	0.5	0.5
Oxyopidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pisauridae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Opiliones	1.5	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	1.5	0.0	NA	NA	NA	NA	NA	2.0	1.0	0.0
Histeridae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.5	0.0
Staphylinidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix P.4.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 3</b>											
Bombyliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Apoidea	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	6.0	5.0	0.5	NA	NA	NA	NA	NA	20.5	3.0	7.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	1.0	1.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
<b>Post 4</b>											
Anypheanidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	1.5	0.0	0.5	1.5	0.0	0.5	0.0	2.0	0.5	0.0	0.5
Oxyopidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Opiliones	0.0	0.0	0.0	2.5	1.5	0.5	1.0	4.0	0.0	0.0	0.0
Carabidae	0.0	1.0	1.5	0.0	0.5	0.0	0.0	1.0	0.5	1.0	0.5
Histeridae	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.5
Staphylinidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Bombyliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Apoidea	0.0	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	1.5	3.5	4.5	11.0	3.5	1.0	51.5	2.5	2.5	0.0	1.0
Mutillidae	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0

**Appendix P.5.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 4</b>											
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.5	1.0	0.0	0.0	0.0	0.5
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	1.0	1.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
<b>Post 5</b>											
Anypheanidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.5	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.0	3.0	0.5	0.0	0.5	1.5	0.5	0.5	0.5
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.5	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	1.0	1.5	0.5	0.5	0.5	0.0	0.0	0.5
Carabidae	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Bombyliidae	0.0	0.0	0.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Apoidea	0.0	1.0	2.5	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.5
Formicidae	1.0	4.5	7.0	2.0	2.0	0.5	11.5	1.0	4.0	2.5	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.5	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0

**Appendix P.6.** Beneficial arthropod taxa collected in prairie hay meadows with pitfall traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6</b>											
Anypheanidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.5	0.0	0.5	1.0	0.0	0.0	0.5	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	1.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pisauridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.5	2.0	0.5	0.0	1.0	0.5	1.0	0.0
Carabidae	0.5	0.0	1.0	1.5	0.5	0.5	0.0	0.0	1.0	1.0	0.0
Histeridae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	1.5	0.5	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.5	1.5	0.0
Bombyliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Apoidea	0.0	0.0	0.0	0.5	0.0	1.0	1.0	0.0	0.5	0.0	0.0
Formicidae	0.5	6.5	19.0	5.0	3.0	6.5	4.0	2.5	0.0	3.0	0.5
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Parasitic wasp	0.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0



**Appendix Q.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Pre</b>												
Araneidae	0	0	0	0	0	0	0	0	0	0	0	0
Oxyopidae	0	0	0	0	0	0	0	0	0	0	1	0
Philodramidae	0	0	0	0	0	0	0	0	0	0	0	0
Salticidae	0	0	0	0	0	0	0	0	0	0	0	0
Tetragnathidae	0	0	0	0	0	0	0	0	0	0	0	0
Thomisidae	0	1	0	0	0	0	0	0	0	1	2	0
Unidentified spider	0	0	0	0	0	0	0	0	0	0	0	0
Carabidae	0	0	1	0	0	0	0	1	0	0	0	0
Coccinellidae	0	0	0	0	1	0	0	0	0	0	0	0
Cleridae	0	0	0	1	0	0	0	0	0	0	0	0
Asilidae	0	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	0	0	0	3	5	0	4	0	15	0	0	0
Berytidae	0	0	0	0	0	0	0	0	0	0	0	0
Geocridae	0	0	0	0	0	0	0	0	0	0	0	0
Nabidae	0	0	0	0	0	0	0	0	0	0	0	0
Reduviidae	0	0	1	0	0	0	0	0	0	0	0	0
Braconidae	0	0	0	0	0	0	0	2	0	0	0	0
Formicidae	1	1	0	0	0	0	1	0	0	0	1	0
Ichneumonidae	0	0	0	1	0	0	0	0	0	0	0	0
Mutillidae	0	0	0	0	0	0	0	0	0	0	0	0
Sphecidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 1</b>												
Araneidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Oxyopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Philodramidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Salticidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Tetragnathidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Thomisidae	2	3	0	NA	NA	NA	NA	NA	NA	0	0	0
Unidentified spider	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix Q.2.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 1</b>												
Carabidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Coccinellidae	1	0	1	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Asilidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Berytidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Geocridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Nabidae	0	1	0	NA	NA	NA	NA	NA	NA	0	0	0
Reduviidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Braconidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Formicidae	2	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Ichneumonidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Mutillidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Sphecidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 2</b>												
Araneidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Oxyopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Philodramidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Salticidae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Tetragnathidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Thomisidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Unidentified spider	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Carabidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Coccinellidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Asilidae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Syrphidae	0	1	0	0	0	0	0	0	0	0	0	0
Berytidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Geocridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix Q.3.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 2</b>												
Nabidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Reduviidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Braconidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Formicidae	0	0	0	NA	NA	NA	NA	NA	NA	3	2	5
Ichneumonidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Mutillidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Sphecidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 3</b>												
Araneidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Oxyopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Philodramidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Salticidae	1	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Tetragnathidae	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
Thomisidae	0	0	0	NA	NA	NA	NA	NA	NA	0	1	0
Unidentified spider	0	2	0	NA	NA	NA	NA	NA	NA	0	0	0
Carabidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Coccinellidae	1	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Asilidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Syrphidae	1	2	0	NA	NA	NA	NA	NA	NA	0	1	0
Berytidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Geocridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Nabidae	1	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Reduviidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Braconidae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Formicidae	0	0	0	NA	NA	NA	NA	NA	NA	0	1	0
Ichneumonidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Mutillidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Sphecidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix Q.4.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 3</b>												
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 4</b>												
Araneidae	0	0	0	0	0	0	0	0	0	0	0	0
Oxyopidae	0	0	0	0	0	0	0	0	0	0	0	0
Philodramidae	0	0	0	0	0	0	0	0	0	0	0	0
Salticidae	0	0	0	0	0	0	0	0	0	0	0	0
Tetragnathidae	0	0	0	0	0	0	0	0	0	0	0	0
Thomisidae	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified spider	0	0	0	0	0	0	0	0	0	0	0	0
Carabidae	0	0	0	0	0	0	0	0	0	0	0	0
Coccinellidae	0	0	0	0	1	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
Asilidae	0	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	0	0	0	0	0	0	0	0	0	0	0	0
Berytidae	0	0	2	0	0	0	0	0	0	0	0	0
Geocridae	0	0	0	0	0	0	0	1	0	0	0	0
Nabidae	0	1	0	0	2	0	0	0	0	0	0	0
Reduviidae	0	0	0	0	0	0	0	0	0	0	0	0
Braconidae	0	0	0	0	0	0	0	0	0	0	0	0
Formicidae	0	0	2	0	2	0	0	2	4	0	0	0
Ichneumonidae	0	0	0	0	0	0	0	0	0	0	0	0
Mutillidae	0	0	0	0	0	0	0	0	0	0	0	0
Sphecidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 5</b>												
Araneidae	0	0	0	0	0	0	0	0	0	0	0	0
Oxyopidae	0	0	0	0	0	0	0	0	0	0	0	0
Philodramidae	1	1	0	0	0	0	0	0	0	0	0	0
Salticidae	0	0	0	0	0	0	0	0	0	0	0	0
Tetragnathidae	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix Q.5.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 5</b>												
Thomisidae	0	0	0	0	0	0	0	0	0	0	0	1
Unidentified spider	0	0	0	0	0	0	0	0	0	0	0	0
Carabidae	0	0	0	0	0	0	0	0	0	0	0	0
Coccinellidae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
Asilidae	1	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	0	0	1	0	0	0	0	0	0	0	0	0
Berytidae	0	0	0	0	0	0	0	0	0	0	0	1
Geocridae	0	0	0	1	0	0	0	0	0	0	0	0
Nabidae	1	0	0	2	0	0	0	0	2	0	0	0
Reduviidae	0	0	0	0	0	0	0	0	0	0	0	0
Braconidae	0	0	0	0	0	0	0	0	0	0	1	0
Formicidae	0	0	1	0	2	0	0	2	0	0	2	0
Ichneumonidae	0	0	0	0	1	0	0	0	0	0	0	0
Mutilidae	0	0	0	0	0	0	0	0	0	0	0	0
Sphecidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6</b>												
Araneidae	0	0	0	0	0	0	0	0	0	0	0	0
Oxyopidae	0	0	0	0	0	0	0	0	0	0	0	0
Philodramidae	0	0	0	0	0	0	0	0	0	0	0	0
Salticidae	0	0	0	0	0	0	0	0	0	0	0	0
Tetragnathidae	0	0	0	0	0	0	0	0	0	0	0	0
Thomisidae	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified spider	0	0	0	0	0	0	0	0	0	0	0	0
Carabidae	0	0	0	0	0	0	0	0	0	0	0	0
Coccinellidae	0	0	1	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
Asilidae	0	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	0	1	0	0	1	0	0	0	0	0	0	0

**Appendix Q.6.** Beneficial arthropod taxa in prairie hay meadows collected with a sweep net in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 6</b>												
Berytidae	4	1	0	0	0	0	0	0	0	0	0	0
Geocridae	0	0	0	0	0	0	0	0	0	0	0	0
Nabidae	0	0	0	0	0	0	0	1	1	0	0	0
Reduviidae	0	0	0	0	0	0	0	0	0	0	0	0
Braconidae	0	0	0	0	0	0	0	0	0	0	0	0
Formicidae	0	0	0	0	1	0	1	8	14	0	0	0
Ichneumonidae	0	0	0	0	0	0	0	0	0	0	0	0
Mutillidae	0	0	0	0	0	0	0	0	0	0	0	0
Sphecidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0	1

**Appendix R.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Pre</b>											
Araneidae	0	0	0	0	0	0	0	0	0	0	0
Oxyopidae	0	0	0	0	0	0	0	0	0	0	0
Philodramidae	0	0	0	0	0	0	0	0	0	0	0
Salticidae	0	0	0	0	0	0	0	0	0	0	0
Tetragnathidae	0	0	0	0	0	0	0	0	0	0	0
Thomisidae	1	7	1	0	0	0	0	0	0	0	4
Unidentified spider	0	0	0	0	0	0	0	0	0	0	0
Carabidae	1	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
Coccinellidae	0	0	7	0	1	0	0	1	0	0	0
Asilidae	0	0	1	0	0	0	0	0	0	0	0
Syrphidae	0	1	0	1	0	2	1	0	0	2	0
Berytidae	0	0	0	0	0	0	0	0	0	0	0
Geocoridae	0	0	0	0	0	0	0	0	0	0	0
Nabidae	0	0	2	0	0	0	0	0	0	0	0
Reduviidae	0	0	0	0	0	0	0	0	0	0	0
Braconidae	0	0	0	0	0	0	0	0	0	0	0
Formicidae	0	0	0	0	0	0	9	0	0	0	0
Ichneumonidae	0	1	0	0	0	0	0	0	0	0	0
Mutillidae	0	0	0	0	0	0	0	0	0	0	0
Sphecidae	0	0	0	1	0	0	0	0	0	0	0
Chrysopidae	0	1	0	0	0	0	0	0	0	0	0
<b>Post 1</b>											
Araneidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Oxyopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Philodramidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Salticidae	2	0	0	NA	NA	NA	NA	NA	0	0	0
Tetragnathidae	0	0	0	NA	NA	NA	NA	NA	1	0	0
Thomisidae	1	0	0	NA	NA	NA	NA	NA	2	0	0
Unidentified spider	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix R.2.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 1</b>											
Carabidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Coccinellidae	0	1	1	NA	NA	NA	NA	NA	0	0	0
Asilidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	1	0
Berytidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Geocoridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Nabidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Reduviidae	0	1	0	NA	NA	NA	NA	NA	0	0	0
Braconidae	0	0	1	NA	NA	NA	NA	NA	0	0	0
Formicidae	0	0	2	NA	NA	NA	NA	NA	0	0	1
Ichneumonidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Mutillidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Sphecidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	1	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 2</b>											
Araneidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Oxyopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Philodramidae	0	0	0	NA	NA	NA	NA	NA	0	1	0
Salticidae	0	0	0	NA	NA	NA	NA	NA	1	0	0
Tetragnathidae	0	0	0	NA	NA	NA	NA	NA	1	0	0
Thomisidae	0	0	0	NA	NA	NA	NA	NA	0	1	1
Unidentified spider	0	0	0	NA	NA	NA	NA	NA	0	0	0
Carabidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Coccinellidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Asilidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Syrphidae	7	1	0	NA	NA	NA	NA	NA	0	0	0
Berytidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Geocoridae	0	0	0	NA	NA	NA	NA	NA	0	0	0



**Appendix R.3.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 2</b>											
Nabidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Reduviidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Braconidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Formicidae	0	0	0	NA	NA	NA	NA	NA	0	0	1
Ichneumonidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Mutillidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Sphecidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 3</b>											
Araneidae	0	0	1	NA	NA	NA	NA	NA	0	0	0
Oxyopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Philodramidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Salticidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Tetragnathidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Thomisidae	1	1	0	NA	NA	NA	NA	NA	0	0	0
Unidentified spider	0	0	0	NA	NA	NA	NA	NA	0	0	0
Carabidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Coccinellidae	0	0	0	NA	NA	NA	NA	NA	0	0	1
Asilidae	0	0	0	NA	NA	NA	NA	NA	1	0	0
Syrphidae	0	1	0	NA	NA	NA	NA	NA	0	0	0
Berytidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Geocoridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Nabidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Reduviidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Braconidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Formicidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Ichneumonidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Mutillidae	0	0	1	NA	NA	NA	NA	NA	0	0	0
Sphecidae	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix R.4.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 3</b>											
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 4</b>											
Araneidae	0	0	0	0	0	0	0	0	0	0	0
Oxyopidae	0	0	0	0	0	0	0	0	0	0	0
Philodramidae	0	0	0	0	0	0	0	0	0	0	0
Salticidae	0	0	0	0	0	0	0	0	0	0	0
Tetragnathidae	0	0	0	0	0	0	0	0	0	0	0
Thomisidae	1	0	0	0	0	0	0	1	0	0	0
Unidentified spider	0	0	0	0	0	0	0	0	0	0	0
Carabidae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
Coccinellidae	0	0	0	0	0	0	0	0	0	0	0
Asilidae	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	0	1	0	0	0	1	0	0	0	0	0
Berytidae	0	0	0	0	0	0	0	0	0	0	0
Geocoridae	0	0	0	0	0	0	0	1	0	0	0
Nabidae	0	0	0	0	0	0	0	0	0	0	0
Reduviidae	0	0	0	0	0	0	0	0	0	0	0
Braconidae	0	0	0	0	0	0	0	0	0	0	0
Formicidae	0	0	0	0	3	0	0	0	0	0	0
Ichneumonidae	0	0	0	0	1	0	0	0	0	0	0
Mutillidae	0	0	0	0	0	0	0	0	0	0	0
Sphecidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 5</b>											
Araneidae	2	0	0	0	0	0	0	0	0	0	0
Oxyopidae	0	0	0	0	0	0	0	0	0	0	0
Philodramidae	0	0	0	0	0	0	0	0	0	0	0
Salticidae	1	0	0	0	0	0	0	0	0	0	0
Tetragnathidae	0	0	0	0	0	0	0	0	0	0	0

**Appendix R.5.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 5</b>											
Thomisidae	0	0	0	0	0	0	0	0	0	0	0
Unidentified spider	0	0	0	0	0	0	0	0	0	0	0
Carabidae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
Coccinellidae	0	0	0	0	0	0	0	0	0	0	0
Asilidae	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	0	0	0	2	0	0	0	0	0	0	0
Berytidae	0	0	0	0	0	0	0	0	0	0	0
Geocoridae	0	0	1	0	0	0	0	0	0	0	0
Nabidae	0	0	0	1	0	0	0	0	0	0	0
Reduviidae	0	0	0	0	0	0	0	0	0	0	0
Braconidae	0	0	0	0	1	0	0	0	0	0	0
Formicidae	0	0	0	0	0	0	0	0	0	0	0
Ichneumonidae	0	0	0	0	0	0	0	0	0	0	0
Mutillidae	0	0	0	0	0	0	0	0	0	0	0
Sphecidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6</b>											
Araneidae	0	0	0	0	0	0	0	0	0	0	0
Oxyopidae	0	0	0	0	0	0	0	0	0	0	0
Philodramidae	0	0	0	0	0	0	0	0	0	0	0
Salticidae	0	0	0	0	0	0	0	0	0	0	0
Tetragnathidae	0	0	0	0	0	0	0	0	1	0	0
Thomisidae	0	0	0	0	0	0	0	0	0	0	0
Unidentified spider	0	0	0	0	0	0	0	0	0	0	0
Carabidae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
Coccinellidae	0	1	0	0	0	0	0	0	0	0	0
Asilidae	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	0	0	1	0	0	0	0	0	1	0	0

**Appendix R.6.** Beneficial arthropod taxa collected in prairie hay meadows with a sweep net in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6</b>											
Berytidae	0	0	0	0	0	0	0	0	0	0	0
Geocoridae	0	0	0	0	0	0	0	0	0	2	0
Nabidae	0	0	1	0	0	0	0	0	0	0	0
Reduviidae	0	0	0	0	0	0	0	0	0	0	0
Braconidae	0	0	0	0	0	0	0	0	0	0	0
Formicidae	0	0	0	0	0	0	0	0	0	1	0
Ichneumonidae	0	0	0	0	1	0	0	0	0	0	0
Mutillidae	0	0	0	0	0	0	0	0	0	0	0
Sphecidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0

**Appendix S.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Pre</b>												
<i>Agapostemon</i>	0	0	0	1	7	0	1	2	3	1	4	0
<i>Anthophora</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Apis</i>	1	1	0	0	0	0	0	0	0	0	0	0
<i>Augochlorella</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Augochloropsis</i>	0	0	1	0	0	0	0	0	0	0	0	0
<i>Bombus</i>	0	0	0	0	1	0	3	0	0	0	0	0
<i>Coelioxys</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Eucera</i>	19	8	9	0	1	0	0	0	0	0	1	0
<i>Epeoloides</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Florilegus</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Halictus</i>	0	1	0	0	1	0	2	2	0	0	0	1
<i>Hoplitis</i>	0	1	0	0	0	0	0	0	0	1	2	0
<i>Lasioglossum</i>	1	2	0	0	0	0	1	1	0	1	1	0
<i>Megachile</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Melissodes</i>	0	0	0	0	1	0	0	1	0	0	0	0
<i>Melitoma</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Osmia</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Peponapis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Nomada</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Sphecodes</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Svastra</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Triepeolus</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Xeromelicta</i>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 1</b>												
<i>Agapostemon</i>	2	11	7	NA	NA	NA	NA	NA	NA	0	0	0
<i>Anthophora</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Apis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Augochlorella</i>	1	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Augochloropsis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Bombus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix S.2.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 1</b>												
<i>Coelioxys</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Eucera</i>	7	8	12	NA	NA	NA	NA	NA	NA	0	0	0
<i>Epeoloides</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Florilegus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Halictus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hoplitis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Lasioglossum</i>	1	6	6	NA	NA	NA	NA	NA	NA	0	0	0
<i>Megachile</i>	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
<i>Melissodes</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Melitoma</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Osmia</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Peponapis</i>	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Nomada</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Sphecodes</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Svastra</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Triepeolus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Xeromelicta</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 2</b>												
<i>Agapostemon</i>	24	6	7	NA	NA	NA	NA	NA	NA	0	0	0
<i>Anthophora</i>	1	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Apis</i>	1	1	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Augochlorella</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Augochloropsis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Bombus</i>	2	0	0	NA	NA	NA	NA	NA	NA	1	0	0
<i>Coelioxys</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Eucera</i>	9	22	13	NA	NA	NA	NA	NA	NA	0	0	0
<i>Epeoloides</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Florilegus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Halictus</i>	1	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hoplitis</i>	3	2	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix S.3.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 2</b>												
<i>Lasioglossum</i>	0	3	3	NA	NA	NA	NA	NA	NA	0	2	1
<i>Megachile</i>	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Melissodes</i>	1	0	11	NA	NA	NA	NA	NA	NA	1	1	1
<i>Melitoma</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Osmia</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Peponapis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Nomada</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Sphecodes</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Svastra</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Triepeolus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Xeromelicta</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 3</b>												
<i>Agapostemon</i>	13	0	8	NA	NA	NA	NA	NA	NA	0	1	0
<i>Anthophora</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Apis</i>	0	2	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Augochlorella</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Augochloropsis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Bombus</i>	2	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coelioxys</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Eucera</i>	17	0	18	NA	NA	NA	NA	NA	NA	0	0	0
<i>Epeoloides</i>	0	2	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Florilegus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Halictus</i>	2	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hoplitis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Lasioglossum</i>	1	1	8	NA	NA	NA	NA	NA	NA	0	0	0
<i>Megachile</i>	1	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Melissodes</i>	0	0	0	NA	NA	NA	NA	NA	NA	2	2	0
<i>Melitoma</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Osmia</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Peponapis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix S.4.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 3</b>												
<i>Nomada</i>	1	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Sphecodes</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Svastra</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Triepeolus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Xeromelicta</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 4</b>												
<i>Agapostemon</i>	1	0	0	2	1	4	1	0	0	0	0	0
<i>Anthophora</i>	4	3	0	0	0	0	0	0	0	0	0	0
<i>Apis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Augochlorella</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Augochloropsis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Bombus</i>	3	0	0	0	0	0	0	0	0	0	0	0
<i>Coelioxys</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Eucera</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Epeoloides</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Florilegus</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Halictus</i>	0	0	0	0	0	2	2	0	0	0	0	0
<i>Hoplitis</i>	0	0	0	0	1	0	0	0	0	0	0	0
<i>Lasioglossum</i>	1	1	2	1	3	2	4	0	1	0	0	0
<i>Megachile</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Melissodes</i>	2	2	4	5	2	5	1	1	0	0	0	0
<i>Melitoma</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Osmia</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Peponapis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Nomada</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Sphecodes</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Svastra</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Triepeolus</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Xeromelicta</i>	0	0	0	0	0	0	0	0	0	0	0	0



**Appendix S.5.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 5</b>												
<i>Agapostemon</i>	1	1	2	0	3	0	0	0	0	0	0	0
<i>Anthophora</i>	1	2	4	0	0	0	0	0	0	0	0	0
<i>Apis</i>	0	0	1	0	0	0	0	0	0	0	0	0
<i>Augochlorella</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Augochloropsis</i>	0	0	0	0	1	0	0	0	0	0	0	0
<i>Bombus</i>	0	3	0	0	1	0	0	1	0	1	0	0
<i>Coelioxys</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Eucera</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Epeoloides</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Florilegus</i>	0	0	0	0	0	1	0	0	0	0	0	0
<i>Halictus</i>	0	0	1	0	1	0	4	1	0	0	0	0
<i>Hoplitis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lasioglossum</i>	0	0	1	0	0	1	0	0	0	0	0	0
<i>Megachile</i>	0	1	0	0	0	0	0	0	0	0	0	0
<i>Melissodes</i>	15	11	6	0	0	0	0	0	1	4	1	0
<i>Melitoma</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Osmia</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Peponapis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Nomada</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Sphecodes</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Svastra</i>	0	0	2	0	0	0	0	0	0	1	0	0
<i>Triepeolus</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Xeromelicta</i>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6</b>												
<i>Agapostemon</i>	2	1	0	0	0	0	0	1	0	0	0	0
<i>Anthophora</i>	1	1	1	0	0	0	0	0	0	0	2	0
<i>Apis</i>	1	0	0	0	0	0	0	0	0	0	0	0
<i>Augochlorella</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Augochloropsis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Bombus</i>	2	1	1	0	0	0	0	1	1	0	0	1

**Appendix S.6.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2013 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 6</b>												
<i>Coelioxys</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Halictus</i>	0	0	0	0	2	0	1	0	0	0	0	0
<i>Eucera</i>	0	0	0	0	4	0	0	0	0	0	0	0
<i>Epeoloides</i>	0	0	0	0	0	1	0	0	0	0	0	0
<i>Florilegus</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hoplitis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lasioglossum</i>	0	1	0	0	3	0	1	1	0	0	0	0
<i>Megachile</i>	0	0	0	0	0	0	0	1	0	0	0	0
<i>Melissodes</i>	11	10	14	2	2	2	2	0	0	3	1	0
<i>Melitoma</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Osmia</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Peponapis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Nomada</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Sphecodes</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Svastra</i>	6	10	5	0	0	0	1	0	0	0	0	0
<i>Triepeolus</i>	0	1	1	0	0	0	0	0	0	0	0	1
<i>Xeromelicta</i>	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix T.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Pre</b>											
<i>Agapostemon</i>	47	1	14	2	0	1	0	0	2	0	0
<i>Anthophora</i>	0	0	1	0	0	0	0	0	0	0	0
<i>Apis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Augochorella</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Augochloropsis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Bombus</i>	2	0	0	1	1	0	0	0	0	0	0
<i>Coelioxys</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Eucera</i>	0	0	0	0	0	0	0	0	0	5	2
<i>Epeoloides</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Florilegus</i>	7	1	18	0	0	0	0	0	20	0	1
<i>Halictus</i>	0	0	2	0	0	0	0	0	6	1	0
<i>Hoplitis</i>	2	0	3	0	0	0	0	0	0	0	0
<i>Lasioglossum</i>	16	3	11	0	1	0	1	0	0	0	1
<i>Megachile</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Melessodes</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Melitoma</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Osmia</i>	0	0	1	0	0	1	0	0	0	0	0
<i>Peponapis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Nomada</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Sphecodes</i>	1	0	0	0	0	0	0	0	0	0	0
<i>Svastra</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Triepeolus</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Xeromelicta</i>	0	0	0	0	0	0	0	0	0	0	0
<b>Post 1</b>											
<i>Agapostemon</i>	1	0	3	NA	NA	NA	NA	NA	0	0	0
<i>Anthophora</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Apis</i>	0	0	0	NA	NA	NA	NA	NA	1	0	0
<i>Augochorella</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Augochloropsis</i>	0	2	0	NA	NA	NA	NA	NA	0	0	0
<i>Bombus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix T.2.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 1</b>											
<i>Coelioxys</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Eucera</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Epeoloides</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Florilegus</i>	1	3	22	NA	NA	NA	NA	NA	0	0	0
<i>Halictus</i>	0	0	1	NA	NA	NA	NA	NA	0	0	0
<i>Hoplitis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Lasioglossum</i>	0	1	5	NA	NA	NA	NA	NA	0	0	0
<i>Megachile</i>	1	1	0	NA	NA	NA	NA	NA	0	0	0
<i>Melessodes</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Melitoma</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Osmia</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Peponapis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Nomada</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Sphecodes</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Svastra</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Triepeolus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Xeromelicta</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 2</b>											
<i>Agapostemon</i>	0	0	0	NA	NA	NA	NA	NA	1	0	0
<i>Anthophora</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Apis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Augochorella</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Augochloropsis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Bombus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coelioxys</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Eucera</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Epeoloides</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Florilegus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Halictus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hoplitis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix T.3.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 2</b>											
<i>Lasioglossum</i>	1	0	1	NA	NA	NA	NA	NA	1	0	0
<i>Megachile</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Melessodes</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Melitoma</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Osmia</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Peponapis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Nomada</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Sphecodes</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Svastra</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Triepeolus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Xeromelicta</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 3</b>											
<i>Agapostemon</i>	0	0	1	NA	NA	NA	NA	NA	0	0	0
<i>Anthophora</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Apis</i>	0	0	2	NA	NA	NA	NA	NA	1	0	0
<i>Augochorella</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Augochloropsis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Bombus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coelioxys</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Eucera</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Epeoloides</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Florilegus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Halictus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hoplitis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Lasioglossum</i>	1	0	0	NA	NA	NA	NA	NA	0	1	0
<i>Megachile</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Melessodes</i>	0	1	0	NA	NA	NA	NA	NA	0	0	0
<i>Melitoma</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Osmia</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Peponapis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix T.4.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 3</b>											
<i>Nomada</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Sphecodes</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Svastra</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Triepeolus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Xeromelicta</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 4</b>											
<i>Agapostemon</i>	8	4	1	0	0	1	3	2	0	0	2
<i>Anthophora</i>	0	1	1	1	0	0	1	1	0	0	0
<i>Apis</i>	5	1	1	0	0	0	0	0	0	0	0
<i>Augochorella</i>	0	0	0	2	0	0	0	0	0	0	0
<i>Augochloropsis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Bombus</i>	3	1	2	4	0	1	0	0	0	0	2
<i>Coelioxys</i>	1	0	0	0	0	0	0	0	0	0	0
<i>Eucera</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Epeoloides</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Florilegus</i>	0	0	0	0	0	2	0	0	1	0	0
<i>Halictus</i>	0	1	0	4	0	2	2	2	0	0	0
<i>Hoplitis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Lasioglossum</i>	1	4	2	5	0	0	2	6	1	0	0
<i>Megachile</i>	0	0	0	0	0	0	1	0	0	0	0
<i>Melessodes</i>	90	159	237	6	1	0	2	5	1	0	1
<i>Melitoma</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Osmia</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Peponapis</i>	0	1	0	0	1	0	0	0	0	0	0
<i>Nomada</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Sphecodes</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Svastra</i>	8	6	5	0	0	0	0	0	0	0	0
<i>Triepeolus</i>	0	0	1	0	0	0	0	0	0	0	0
<i>Xeromelicta</i>	0	0	0	0	0	0	0	0	0	0	0

**Appendix T.5.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 5</b>											
<i>Agapostemon</i>	5	0	9	1	0	0	0	1	0	0	0
<i>Anthophora</i>	2	1	0	0	2	0	0	0	0	0	0
<i>Apis</i>	4	2	2	1	0	1	0	0	0	0	1
<i>Augochorella</i>	0	0	0	2	0	0	0	0	0	0	0
<i>Augochloropsis</i>	1	0	0	0	0	0	0	0	0	0	0
<i>Bombus</i>	0	0	0	3	0	0	0	1	3	6	3
<i>Coelioxys</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Eucera</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Epeoloides</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Florilegus</i>	0	0	0	0	0	0	1	0	0	0	0
<i>Halictus</i>	5	1	2	3	0	0	0	0	2	1	4
<i>Hoplitis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Lasioglossum</i>	5	3	3	0	1	0	1	0	0	2	1
<i>Megachile</i>	0	1	1	1	1	0	0	2	0	0	0
<i>Melessodes</i>	32	33	31	22	3	4	3	8	13	15	11
<i>Melitoma</i>	0	0	0	4	0	0	0	0	0	0	0
<i>Osmia</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Peponapis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Nomada</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Sphecodes</i>	0	0	0	1	0	0	0	0	0	0	0
<i>Svastra</i>	1	0	2	2	3	3	0	0	1	0	1
<i>Triepeolus</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Xeromelicta</i>	0	1	0	0	0	0	0	0	0	0	0
<b>Post 6</b>											
<i>Agapostemon</i>	1	2	0	0	1	0	0	0	0	0	0
<i>Anthophora</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Apis</i>	1	1	0	0	0	0	0	1	0	0	0
<i>Augochorella</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Augochloropsis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Bombus</i>	1	0	0	0	1	0	0	1	1	0	1

**Appendix T.6.** Bee taxa collected in prairie hay meadows with blue cross vane traps in 2014 and used in community analysis for each site by treatment and timing

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6</b>											
<i>Coelioxys</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Eucera</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Epeoloides</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Florilegus</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Halictus</i>	0	0	0	0	0	0	0	0	2	0	0
<i>Hoplitis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Lasioglossum</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Megachile</i>	0	0	0	0	0	0	0	1	0	0	0
<i>Melessodes</i>	6	6	16	2	1	1	2	0	8	3	10
<i>Melitoma</i>	0	0	0	0	0	0	0	0	0	0	1
<i>Osmia</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Peponapis</i>	0	0	0	0	0	0	0	0	2	1	3
<i>Nomada</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Sphecodes</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Svastra</i>	0	1	0	0	0	0	0	0	1	1	1
<i>Tripeolus</i>	0	0	0	0	0	0	0	0	0	0	1
<i>Xeromelicta</i>	0	0	0	0	0	0	0	0	0	0	0



**Appendix U.** Plant taxa along with their importance value, sum of relative percent cover and relative frequency, for each site by treatment surveyed in 2013

Plant species	0x	H 1x	2x	S1 0x	S2 0x	0x	V 1x	2x
<i>Achillea millefolium</i>	0.0000	0.0000	0.0000	0.0198	0.1111	0.0734	0.0763	0.0891
<i>Allium</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0166	0.0000	0.0000
<i>Ambrosia</i> spp.	0.0195	0.0109	0.0188	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Amorpha canescens</i>	0.2157	0.0940	0.1035	0.0000	0.0000	0.0000	0.0000	0.0630
<i>Andropogon gerardii</i>	0.0655	0.0367	0.2431	0.1998	0.1943	0.0705	0.2672	0.1936
<i>Anemone canadensis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0350	0.0000	0.0000
<i>Antennaria neglecta</i>	0.0000	0.0000	0.0138	0.0000	0.0000	0.0000	0.0265	0.0557
<i>Apocynum cannabinum</i>	0.0000	0.0000	0.0000	0.0311	0.0298	0.0000	0.0124	0.0000
<i>Artemisia ludoviciana</i>	0.0566	0.0373	0.0471	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Asclepias syriaca</i>	0.0000	0.0000	0.0000	0.0166	0.0149	0.0000	0.0000	0.0000
<i>Aster</i> spp.	0.0000	0.0088	0.0000	0.0000	0.0000	0.1600	0.0000	0.0189
<i>Astragalus</i> sp.	0.0000	0.0238	0.0282	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Bouteloua curtipendula</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0672	0.0000
<i>Bromus inermis</i>	0.3277	0.1064	0.0471	0.2064	0.0253	0.0000	0.0000	0.0137
<i>Calamovilfa longifolia</i>	0.0000	0.0264	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Carex</i> spp.	0.0195	0.0529	0.0326	0.0000	0.0000	0.0000	0.0672	0.0000
<i>Chenopodium album</i>	0.0425	0.0461	0.0282	0.0000	0.0492	0.0000	0.0000	0.0000
<i>Cirsium</i> spp.	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0274
<i>Comandra umbellatum</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0474	0.0283
<i>Convolvulus arvensis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Conyza canadensis</i>	0.0098	0.0461	0.0094	0.0000	0.0633	0.0000	0.0000	0.0000
<i>Coreopsis</i> sp.	0.0098	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Cyperus schweinitzii</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Dactylis glomerata</i>	0.0000	0.0000	0.0000	0.1211	0.0000	0.0000	0.0000	0.0000
<i>Dianthus ameria</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0094
<i>Dichanthelium oligosanthes</i>	0.0918	0.1575	0.1281	0.0000	0.0976	0.1468	0.2887	0.2500
<i>Echinacea pallida</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0189
<i>Equisetum</i> sp.	0.0000	0.0000	0.0000	0.0778	0.0000	0.0000	0.0622	0.0283
<i>Erigeron annuus</i>	0.0000	0.0000	0.0094	0.0000	0.0127	0.0166	0.0000	0.0000
<i>Eriogonum annuum</i>	0.0000	0.0000	0.0094	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Euphorbia dentata</i>	0.0264	0.0212	0.0094	0.0000	0.0000	0.0000	0.0000	0.0000

**Appendix U.2.** Plant taxa along with their importance value, sum of relative percent cover and relative frequency, for each site by treatment surveyed in 2013

Plant species	0x	H 1x	2x	S1 0x	S2 0x	0x	V 1x	2x
<i>Euphorbia esula</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0124	0.0000
<i>Euphorbia maculata</i>	0.0672	0.0964	0.2221	0.0000	0.0000	0.0000	0.0000	0.0094
<i>Fraxinus</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Galium</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Helianthus tuberosus</i>	0.0195	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0189
<i>Hesperostipa comata</i>	0.2680	0.2054	0.2265	0.2505	0.0000	0.0951	0.1206	0.1330
<i>Heterotheca stenophylla</i>	0.0000	0.0000	0.0116	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Hymenopappus tenuifolius</i>	0.0000	0.0088	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Hypoxis</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0137
<i>Juniperus virginiana</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0094
<i>Lactuca</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Leucanthemum</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Liatris</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0166	0.0000	0.0000
<i>Linum sulcatum</i>	0.0000	0.0000	0.0094	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Lithospermum incisum</i>	0.0000	0.0176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Lithospermum</i> sp.	0.0293	0.0264	0.0587	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Lycopus</i> spp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Medicago lupulina</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Mimosa</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0124	0.0000
<i>Mirabilis nyctaginea</i>	0.0098	0.0511	0.0094	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Mollugo verticillata</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.1571	0.0141	0.0094
<i>Oenothera biennis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Oligoneuron riddellii</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Opuntia fragilis</i>	0.0000	0.0000	0.0094	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Opuntia polyacantha</i>	0.0310	0.0549	0.0377	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Oxalis stricta</i>	0.1471	0.1493	0.1563	0.0000	0.1275	0.0000	0.0598	0.0745
<i>Packera tridenticulata</i>	0.0000	0.0088	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Panicum virgatum</i>	0.0000	0.0259	0.0094	0.0343	0.1634	0.1508	0.1441	0.2076
<i>Paspalum setaceum</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Phalaris arundinacea</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0333	0.0158	0.0000
<i>Phleum pratense</i>	0.0000	0.0000	0.0000	0.1352	0.0850	0.0717	0.0548	0.0116

**Appendix U.3.** Plant taxa along with their importance value, sum of relative percent cover and relative frequency, for each site by treatment surveyed in 2013

Plant species	0x	H 1x	2x	S1 0x	S2 0x	0x	V 1x	2x
<i>Physalis heterophylla</i>	0.0505	0.0558	0.0188	0.0156	0.0000	0.0000	0.0000	0.0000
<i>Physalis virginiana</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Plantago patagonica</i>	0.0505	0.1317	0.1042	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Plantago</i> spp.	0.0115	0.0000	0.0000	0.0467	0.1971	0.0000	0.0000	0.0000
<i>Poa pratensis</i>	0.0000	0.0000	0.0000	0.6358	0.3985	0.4671	0.4340	0.2162
<i>Polygonum convolvulus</i>	0.0195	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Polygonum ramosissimum</i>	0.0000	0.0000	0.0116	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Potentilla</i> sp.	0.0000	0.0000	0.0094	0.0322	0.0425	0.0000	0.0158	0.0472
<i>Prunus americana</i>	0.0217	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Prunus pumila</i>	0.0332	0.1005	0.0825	0.0000	0.0000	0.0666	0.0658	0.0517
<i>Prunus virginiana</i>	0.0166	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Psoralegium</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Pycnanthemum virginianum</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0166	0.0000	0.0000
<i>Ratibida pinnata</i>	0.0722	0.0958	0.0304	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Rosa</i> sp.	0.1054	0.0000	0.0695	0.0241	0.0343	0.0000	0.0141	0.0000
<i>Rudbeckia hirta</i>	0.0000	0.0353	0.0094	0.0000	0.0000	0.0166	0.0366	0.0536
<i>Rumex acetosella</i>	0.0000	0.0000	0.0000	0.0156	0.1779	0.0000	0.0000	0.0000
<i>Rumex crispus</i>	0.0000	0.0109	0.0000	0.0000	0.0380	0.0000	0.0000	0.0000
<i>Salsola colina</i>	0.0000	0.0279	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Schizachyrium scoparium</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0242	0.0000
<i>Scutellaria parvula</i>	0.0000	0.0000	0.0000	0.0311	0.0000	0.0166	0.0124	0.0116
<i>Senecio platensis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0124	0.0000
<i>Solidago</i> spp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Sorghastrum nutans</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Spartina pectinata</i>	0.0217	0.0000	0.0000	0.0209	0.0846	0.2791	0.0000	0.0000
<i>Spiranthes</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Sporobolus heterolepis</i>	0.0000	0.0306	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Tradescantia</i> sp.	0.0000	0.0088	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Taraxacum officinale</i>	0.0408	0.0264	0.0818	0.0322	0.0127	0.0734	0.0000	0.0861
<i>Thlaspi arvense</i>	0.0327	0.0429	0.0282	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Tragopogon dubius</i>	0.0115	0.0000	0.0188	0.0000	0.0000	0.0000	0.0000	0.0000

**Appendix U.4.** Plant taxa along with their importance value, sum of relative percent cover and relative frequency, for each site by treatment surveyed in 2013

Plant species	0x	H 1x	2x	S1 0x	S2 0x	0x	V 1x	2x
<i>Trifolium pratense</i>	0.0000	0.0000	0.0000	0.0156	0.0127	0.0000	0.0000	0.1007
<i>Verbena bracteata</i>	0.0000	0.0532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Verbena</i> sp.	0.0391	0.0088	0.0282	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Vernonia</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0201	0.0000	0.0000
<i>Viola</i> spp.	0.0000	0.0000	0.0282	0.0156	0.0127	0.0166	0.0531	0.1019
Unknown 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unknown 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0094
Unknown 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**Appendix V.** Plant taxa along with their importance value, sum of relative percent cover and relative frequency, for each site by treatment surveyed in 2014

Plant species	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<i>Achillea millefolium</i>	0.0000	0.0102	0.0000	0.0000	0.0608	0.1747	0.1369	0.0866	0.0928	0.0827	0.0853
<i>Allium</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0096
<i>Ambrosia</i> spp.	0.0709	0.0226	0.0264	0.0000	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Amorpha canescens</i>	0.2105	0.0986	0.1949	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0546	0.0502
<i>Andropogon gerardii</i>	0.1246	0.0210	0.2427	0.5235	0.2089	0.2392	0.1227	0.1819	0.1012	0.1669	0.1872
<i>Anemone canadensis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0533	0.0000	0.0000
<i>Antennaria neglecta</i>	0.0000	0.0000	0.0469	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0089	0.0385
<i>Apocynum cannabinum</i>	0.0000	0.0000	0.0000	0.0349	0.0146	0.0000	0.0000	0.0366	0.0000	0.0000	0.0000
<i>Artemisia ludoviciana</i>	0.0258	0.0582	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Asclepias syriaca</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0183	0.0000	0.0000	0.0000
<i>Aster</i> spp.	0.0387	0.0102	0.0182	0.0000	0.0000	0.0000	0.0000	0.0000	0.3378	0.0266	0.0192
<i>Astragalus</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Bouteloua curtipendula</i>	0.0000	0.0737	0.0580	0.0000	0.0000	0.0000	0.0479	0.0000	0.0000	0.0177	0.0192
<i>Bromus inermis</i>	0.3050	0.1994	0.0750	0.2323	0.0949	0.0162	0.0160	0.0582	0.0000	0.0384	0.0000
<i>Calamovilfa longifolia</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Carex</i> spp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Chenopodium album</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0543	0.0000	0.0000	0.0000	0.0000
<i>Cirsium</i> spp.	0.0129	0.0000	0.0000	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0446	0.0615
<i>Comandra umbellatum</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0384	0.0213
<i>Convolvulus arvensis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0354	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Conyza canadensis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0160	0.0000	0.0000	0.0000	0.0000
<i>Coreopsis</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Cyperus schweinitzii</i>	0.0000	0.0000	0.0246	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Dactylis glomerata</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Dianthus ameria</i>	0.0000	0.0102	0.0082	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0192
<i>Dichanthelium oligosanthes</i>	0.1697	0.2016	0.2259	0.0000	0.0146	0.0899	0.1369	0.1165	0.0371	0.3186	0.3121
<i>Echinacea pallida</i>	0.0666	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0089	0.0192
<i>Equisetum</i> sp.	0.0000	0.0000	0.0000	0.0175	0.0437	0.0000	0.0160	0.0183	0.0800	0.0620	0.0385
<i>Erigeron annuus</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Eriogonum annuum</i>	0.0258	0.1331	0.1242	0.0000	0.0000	0.0000	0.0479	0.0217	0.0000	0.0369	0.0096
<i>Euphorbia dentate</i>	0.0129	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Euphorbia esula</i>	0.0000	0.0000	0.0000	0.0000	0.0146	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**Appendix V.2.** Plant taxa along with their importance value, sum of relative percent cover and relative frequency, for each site by treatment surveyed in 2014

Plant species	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<i>Euphorbia maculata</i>	0.0000	0.0307	0.0246	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0096
<i>Fraxinus</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0146	0.0000	0.0000	0.0000	0.0186	0.0000	0.0000
<i>Galium</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2728	0.0000	0.0192
<i>Helianthus tuberosus</i>	0.0236	0.0102	0.0164	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Hesperostipa comata</i>	0.3286	0.3074	0.1961	0.0000	0.0809	0.1393	0.1582	0.0183	0.2031	0.4314	0.1608
<i>Heterotheca stenophylla</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Hymenopappus tenuifolius</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Hypoxis</i> sp.	0.0000	0.0102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0886	0.0288
<i>Juniperus virginiana</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0192
<i>Lactuca</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0096
<i>Leucanthemum</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0366	0.0000	0.0000	0.0000
<i>Liatris</i> sp.	0.0000	0.0102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0089	0.0000
<i>Linum sulcatum</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Lithospermum incisum</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Lithospermum</i> sp.	0.0000	0.0613	0.0246	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Lycopus</i> spp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0186	0.0000	0.0000
<i>Medicago lupulina</i>	0.0000	0.0000	0.0000	0.0572	0.0778	0.0737	0.0000	0.0183	0.0000	0.0000	0.0000
<i>Mimosa</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Mirabilis nyctaginea</i>	0.0000	0.0000	0.0082	0.0000	0.0000	0.0000	0.0160	0.0000	0.0000	0.0000	0.0000
<i>Mollugo verticillata</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Oenothera biennis</i>	0.0000	0.0102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Oligoneuron riddellii</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0186	0.0104	0.0096
<i>Opuntia fragilis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Opuntia polyacantha</i>	0.0000	0.0985	0.0410	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Oxalis stricta</i>	0.0000	0.0000	0.0000	0.0175	0.0291	0.0325	0.0000	0.0000	0.0000	0.0089	0.0192
<i>Packera tridenticulata</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Panicum virgatum</i>	0.0258	0.0399	0.0287	0.2167	0.0758	0.0540	0.1602	0.1819	0.0857	0.0638	0.1374
<i>Paspalum setaceum</i>	0.0000	0.0000	0.0199	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Phalaris arundinacea</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0590	0.0000	0.0000
<i>Phleum pratense</i>	0.0000	0.0000	0.0000	0.0715	0.0000	0.0000	0.0854	0.0000	0.0000	0.0443	0.0096
<i>Physalis heterophylla</i>	0.1117	0.0554	0.0527	0.0381	0.0146	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Physalis virginiana</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0089	0.0000

**Appendix V.3.** Plant taxa along with their importance value, sum of relative percent cover and relative frequency, for each site by treatment surveyed in 2014

Plant species	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<i>Plantago patagonica</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Plantago</i> spp.	0.0000	0.0307	0.0234	0.0000	0.2210	0.0940	0.0319	0.0982	0.0000	0.0000	0.0096
<i>Poa pratensis</i>	0.2041	0.0000	0.0357	0.5395	0.6129	0.4880	0.4237	0.6678	0.0719	0.1472	0.2291
<i>Polygonum convolvulus</i>	0.0000	0.0120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Polygonum ramosissimum</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Potentilla</i> sp.	0.0193	0.0000	0.0592	0.0349	0.0778	0.2375	0.1789	0.0765	0.0000	0.0089	0.0481
<i>Prunus americana</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Prunus pumila</i>	0.0258	0.1538	0.0217	0.0000	0.0000	0.0000	0.1216	0.0000	0.0000	0.0119	0.0615
<i>Prunus virginiana</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Psoralegium</i> sp.	0.0000	0.0409	0.0246	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Pycnanthemum virginianum</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0096
<i>Ratibida pinnata</i>	0.0408	0.1012	0.0451	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Rosa</i> sp.	0.1182	0.0124	0.0849	0.0349	0.0000	0.0162	0.0440	0.0000	0.0000	0.0089	0.0096
<i>Rudbeckia hirta</i>	0.0000	0.0000	0.0082	0.0000	0.0146	0.0191	0.0000	0.0000	0.0000	0.0089	0.0096
<i>Rumex acetosella</i>	0.0000	0.0269	0.0645	0.0000	0.0146	0.1132	0.1378	0.0799	0.0000	0.0000	0.0000
<i>Rumex crispus</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Salsola colina</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Schizachyrium scoparium</i>	0.0000	0.0544	0.0082	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0089	0.0000
<i>Scutellaria parvula</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Senecio platensis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Solidago</i> spp.	0.0129	0.0124	0.0082	0.0383	0.0000	0.0000	0.0000	0.0000	0.0991	0.0089	0.0000
<i>Sorghastrum nutans</i>	0.0000	0.0102	0.0000	0.0715	0.0372	0.0191	0.0160	0.0000	0.0958	0.0518	0.0000
<i>Spartina pectinata</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2246	0.0000	0.0000
<i>Spiranthes</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Sporobolus heterolepis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Taraxacum officinale</i>	0.0000	0.0000	0.0510	0.0000	0.0000	0.0000	0.0000	0.0183	0.0557	0.0000	0.0544
<i>Thlaspi arvense</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0183	0.0000	0.0000	0.0000
<i>Tradescantia</i> sp.	0.0000	0.0328	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Tragopogon dubius</i>	0.0000	0.0102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Trifolium pratense</i>	0.0000	0.0000	0.0000	0.0000	0.2165	0.0928	0.0160	0.2112	0.0000	0.0281	0.1138
<i>Verbena bracteata</i>	0.0000	0.0102	0.0082	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Verbena</i> sp.	0.0258	0.0000	0.0410	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**Appendix V.4.** Plant taxa along with their importance value, sum of relative percent cover and relative frequency, for each site by treatment surveyed in 2014

Plant species	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<i>Vernonia</i> sp.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<i>Viola</i> spp.	0.0000	0.0102	0.0346	0.0540	0.0437	0.0325	0.0160	0.0366	0.0557	0.0901	0.0790
Unknown 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000
Unknown 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0096
Unknown 3	0.0000	0.0000	0.0082	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



**Appendix W:** Natural enemy abundance values collected in 2013 from crop fields with yellow sticky cards and SAS 9.2 code used.

data NE;

input site \$ timing \$ treatment \$ distance \$ NE;  
cards;

H	Pre	0x	0m	3
H	Pre	1x	0m	2
H	Pre	2x	0m	4
H	Post1	0x	0m	12
H	Post1	1x	0m	3
H	Post1	2x	0m	2
H	Post2	0x	0m	2
H	Post2	1x	0m	3
H	Post2	2x	0m	2
H	Post3	0x	0m	5
H	Post3	1x	0m	7
H	Post3	2x	0m	6
H	Post4	0x	0m	11
H	Post4	1x	0m	19
H	Post4	2x	0m	23
H	Post5	0x	0m	15
H	Post5	1x	0m	30
H	Post5	2x	0m	17
H	Post6	0x	0m	4
H	Post6	1x	0m	13
H	Post6	2x	0m	12
S1	Pre	0x	0m	9
S1	Pre	1x	0m	4
S1	Pre	1x	0m	4
S1	Post4	0x	0m	19
S1	Post4	1x	0m	7
S1	Post4	1x	0m	6
S1	Post5	0x	0m	2
S1	Post5	1x	0m	1
S1	Post5	1x	0m	2
S1	Post6	0x	0m	0
S1	Post6	1x	0m	4
S1	Post6	1x	0m	2
S2	Pre	0x	0m	1
S2	Pre	1x	0m	2
S2	Pre	1x	0m	4
S2	Post4	0x	0m	3
S2	Post4	2x	0m	5
S2	Post5	0x	0m	0
S2	Post5	2x	0m	1
S2	Post6	0x	0m	5
S2	Post4	1x	0m	21
S2	Post6	2x	0m	2
S2	Post5	1x	0m	1
S2	Post6	1x	0m	3
V	Pre	0x	0m	8
V	Pre	1x	0m	11
V	Pre	2x	0m	10
V	Post1	0x	0m	6
V	Post1	1x	0m	2
V	Post1	2x	0m	4

**Appendix W.2:** Natural enemy abundance values collected in 2013 from crop fields with yellow sticky cards and SAS 9.2 code used.

V	Post2	0x	0m	24
V	Post2	1x	0m	5
V	Post2	2x	0m	11
V	Post3	0x	0m	5
V	Post3	1x	0m	7
V	Post3	2x	0m	1
V	Post4	0x	0m	9
V	Post4	1x	0m	8
V	Post4	2x	0m	1
V	Post5	0x	0m	4
V	Post5	1x	0m	3
V	Post5	2x	0m	8
V	Post6	0x	0m	13
V	Post6	1x	0m	2
V	Post6	2x	0m	9
H	Pre	0x	10m	2
H	Pre	1x	10m	4
H	Pre	2x	10m	0
H	Post1	0x	10m	1
H	Post1	1x	10m	1
H	Post1	2x	10m	2
H	Post2	0x	10m	7
H	Post2	1x	10m	5
H	Post2	2x	10m	3
H	Post3	0x	10m	4
H	Post3	1x	10m	3
H	Post3	2x	10m	3
H	Post4	0x	10m	15
H	Post4	1x	10m	4
H	Post4	2x	10m	20
H	Post5	0x	10m	8
H	Post5	1x	10m	5
H	Post5	2x	10m	4
H	Post6	0x	10m	3
H	Post6	1x	10m	7
H	Post6	2x	10m	6
S1	Pre	0x	10m	3
S1	Pre	1x	10m	6
S1	Pre	2x	10m	1
S1	Post4	0x	10m	2
S1	Post4	1x	10m	4
S1	Post4	1x	10m	2
S1	Post5	0x	10m	0
S1	Post5	1x	10m	1
S1	Post5	1x	10m	2
S1	Post6	0x	10m	0
S1	Post6	1x	10m	6
S1	Post6	1x	10m	2
S2	Pre	0x	10m	1
S2	Pre	1x	10m	3
S2	Pre	1x	10m	2
S2	Post4	0x	10m	3
S2	Post4	1x	10m	3
S2	Post5	0x	10m	0

**Appendix W.3:** Natural enemy abundance values collected in 2013 from crop fields with yellow sticky cards and SAS 9.2 code used.

S2	Post5	1x	10m	0
S2	Post6	0x	10m	1
S2	Post4	1x	10m	5
S2	Post6	1x	10m	3
S2	Post5	1x	10m	2
S2	Post6	1x	10m	6
V	Pre	0x	10m	3
V	Pre	1x	10m	7
V	Pre	2x	10m	3
V	Post1	0x	10m	3
V	Post1	1x	10m	1
V	Post1	2x	10m	4
V	Post2	0x	10m	7
V	Post2	1x	10m	2
V	Post2	2x	10m	5
V	Post3	0x	10m	3
V	Post3	1x	10m	1
V	Post3	2x	10m	5
V	Post4	0x	10m	0
V	Post4	1x	10m	1
V	Post4	2x	10m	0
V	Post5	0x	10m	4
V	Post5	1x	10m	0
V	Post5	2x	10m	1
V	Post6	0x	10m	2
V	Post6	1x	10m	1
V	Post6	2x	10m	2
H	Pre	0x	25m	0
H	Pre	1x	25m	1
H	Pre	2x	25m	2
H	Post1	0x	25m	4
H	Post1	1x	25m	3
H	Post1	2x	25m	7
H	Post2	0x	25m	2
H	Post2	1x	25m	3
H	Post2	2x	25m	4
H	Post3	0x	25m	1
H	Post3	1x	25m	5
H	Post3	2x	25m	2
H	Post4	0x	25m	12
H	Post4	1x	25m	2
H	Post4	2x	25m	18
H	Post5	0x	25m	17
H	Post5	1x	25m	4
H	Post5	2x	25m	18
H	Post6	0x	25m	5
H	Post6	1x	25m	10
H	Post6	2x	25m	9
S1	Pre	0x	25m	6
S1	Pre	1x	25m	0
S1	Pre	1x	25m	3
S1	Post4	0x	25m	3
S1	Post4	1x	25m	3
S1	Post4	1x	25m	1

**Appendix W.4:** Natural enemy abundance values collected in 2013 from crop fields with yellow sticky cards and SAS 9.2 code used.

S1	Post5	0x	25m	0
S1	Post5	1x	25m	1
S1	Post5	1x	25m	3
S1	Post6	0x	25m	4
S1	Post6	1x	25m	2
S1	Post6	1x	25m	1
S2	Pre	0x	25m	2
S2	Pre	1x	25m	1
S2	Pre	1x	25m	1
S2	Post4	0x	25m	2
S2	Post4	1x	25m	1
S2	Post5	0x	25m	1
S2	Post5	1x	25m	2
S2	Post6	0x	25m	42
S2	Post4	1x	25m	1
S2	Post6	1x	25m	0
S2	Post5	1x	25m	0
S2	Post6	1x	25m	2
V	Pre	0x	25m	5
V	Pre	1x	25m	3
V	Pre	2x	25m	2
V	Post1	0x	25m	2
V	Post1	1x	25m	0
V	Post1	2x	25m	0
V	Post2	0x	25m	7
V	Post2	1x	25m	3
V	Post2	2x	25m	5
V	Post3	0x	25m	6
V	Post3	1x	25m	1
V	Post3	2x	25m	4
V	Post4	0x	25m	0
V	Post4	1x	25m	0
V	Post4	2x	25m	0
V	Post5	0x	25m	0
V	Post5	1x	25m	0
V	Post5	2x	25m	1
V	Post6	0x	25m	1
V	Post6	1x	25m	1
V	Post6	2x	25m	0
H	Pre	0x	50m	3
H	Pre	1x	50m	2
H	Pre	2x	50m	3
H	Post1	0x	50m	0
H	Post1	1x	50m	5
H	Post1	2x	50m	4
H	Post2	0x	50m	2
H	Post2	1x	50m	1
H	Post2	2x	50m	0
H	Post3	0x	50m	2
H	Post3	1x	50m	5
H	Post3	2x	50m	4
H	Post4	0x	50m	27
H	Post4	1x	50m	4
H	Post4	2x	50m	6

**Appendix W.5:** Natural enemy abundance values collected in 2013 from crop fields with yellow sticky cards and SAS 9.2 code used.

H	Post5	0x	50m	13
H	Post5	1x	50m	4
H	Post5	2x	50m	8
H	Post6	0x	50m	4
H	Post6	1x	50m	6
H	Post6	2x	50m	8
S1	Pre	0x	50m	1
S1	Pre	1x	50m	0
S1	Pre	1x	50m	5
S1	Post4	0x	50m	3
S1	Post4	1x	50m	2
S1	Post4	1x	50m	1
S1	Post5	0x	50m	1
S1	Post5	1x	50m	0
S1	Post5	1x	50m	1
S1	Post6	0x	50m	4
S1	Post6	1x	50m	2
S1	Post6	1x	50m	0
S2	Pre	0x	50m	6
S2	Pre	1x	50m	6
S2	Pre	1x	50m	3
S2	Post4	0x	50m	6
S2	Post4	1x	50m	2
S2	Post5	0x	50m	1
S2	Post5	1x	50m	1
S2	Post6	0x	50m	6
S2	Post4	1x	50m	12
S2	Post6	1x	50m	7
S2	Post5	1x	50m	10
S2	Post6	1x	50m	1
V	Pre	0x	50m	2
V	Pre	1x	50m	2
V	Pre	2x	50m	0
V	Post1	0x	50m	1
V	Post1	1x	50m	0
V	Post1	2x	50m	3
V	Post2	0x	50m	5
V	Post2	1x	50m	1
V	Post2	2x	50m	0
V	Post3	0x	50m	3
V	Post3	1x	50m	2
V	Post3	2x	50m	5
V	Post4	0x	50m	0
V	Post4	1x	50m	0
V	Post4	2x	50m	0
V	Post5	0x	50m	0
V	Post5	1x	50m	1
V	Post5	2x	50m	0
V	Post6	0x	50m	0
V	Post6	1x	50m	0
V	Post6	2x	50m	1
H	Pre	0x	5m	1
H	Pre	1x	5m	3
H	Pre	2x	5m	1

**Appendix W.6:** Natural enemy abundance values collected in 2013 from crop fields with yellow sticky cards and SAS 9.2 code used.

H	Post1	0x	5m	4
H	Post1	1x	5m	1
H	Post1	2x	5m	10
H	Post2	0x	5m	0
H	Post2	1x	5m	2
H	Post2	2x	5m	2
H	Post3	0x	5m	3
H	Post3	1x	5m	3
H	Post3	2x	5m	3
H	Post4	0x	5m	12
H	Post4	1x	5m	8
H	Post4	2x	5m	20
H	Post5	0x	5m	8
H	Post5	1x	5m	4
H	Post5	2x	5m	13
H	Post6	0x	5m	8
H	Post6	1x	5m	3
H	Post6	2x	5m	4
S1	Pre	0x	5m	3
S1	Pre	1x	5m	4
S1	Pre	1x	5m	1
S1	Post4	0x	5m	2
S1	Post4	1x	5m	4
S1	Post4	1x	5m	2
S1	Post5	0x	5m	0
S1	Post5	1x	5m	0
S1	Post5	1x	5m	1
S1	Post6	0x	5m	0
S1	Post6	1x	5m	4
S1	Post6	1x	5m	2
S2	Pre	0x	5m	2
S2	Pre	1x	5m	2
S2	Pre	1x	5m	4
S2	Post4	0x	5m	8
S2	Post4	1x	5m	5
S2	Post5	0x	5m	2
S2	Post5	1x	5m	1
S2	Post6	0x	5m	2
S2	Post4	1x	5m	1
S2	Post6	1x	5m	5
S2	Post5	1x	5m	4
S2	Post6	1x	5m	3
V	Pre	0x	5m	2
V	Pre	1x	5m	4
V	Pre	2x	5m	4
V	Post1	0x	5m	7
V	Post1	1x	5m	2
V	Post1	2x	5m	0
V	Post2	0x	5m	5
V	Post2	1x	5m	4
V	Post2	2x	5m	6
V	Post3	0x	5m	4
V	Post3	1x	5m	3
V	Post3	2x	5m	2

**Appendix W.7:** Natural enemy abundance values collected in 2013 from crop fields with yellow sticky cards and SAS 9.2 code used.

V	Post4	0x	5m	0
V	Post4	1x	5m	0
V	Post4	2x	5m	1
V	Post5	0x	5m	2
V	Post5	1x	5m	2
V	Post5	2x	5m	2
V	Post6	0x	5m	3
V	Post6	1x	5m	1
V	Post6	2x	5m	2

;

```
Proc mixed method = type3;
class site timing treatment distance;
model NE = site timing treatment distance timing*treatment*distance / ddfm = satterth;
slice timing*treatment*distance / sliceby = timing*distance diff lines;
run;
quit;
```

**Appendix X:** Natural enemy abundance values collected in 2014 from crop fields with yellow sticky cards and SAS 9.2 code used.

```
data NE;
input site $ timing $ treatment $ distance $ NE;
cards;
H      Pre      0x      0m      2
H      Pre      1x      0m      3
H      Pre      2x      0m      0
H      Post1    0x      0m      15
H      Post1    1x      0m      6
H      Post1    2x      0m      6
H      Post2    0x      0m      1
H      Post2    1x      0m      2
H      Post2    2x      0m      1
H      Post3    0x      0m      3
H      Post3    1x      0m      2
H      Post3    2x      0m      2
H      Post4    0x      0m      3
H      Post4    1x      0m      1
H      Post4    2x      0m      2
H      Post5    0x      0m      1
H      Post5    1x      0m      4
H      Post5    2x      0m      4
H      Post6    0x      0m      1
H      Post6    1x      0m      2
H      Post6    2x      0m      1
S1     Pre      0x      0m      7
S1     Pre      1x      0m      11
S1     Pre      2x      0m      10
S1     Post4    0x      0m      5
S1     Post4    1x      0m      5
S1     Post4    1x      0m      5
S1     Post5    0x      0m      4
S1     Post5    1x      0m      2
S1     Post5    1x      0m      10
S1     Post6    1x      0m      2
S1     Post6    0x      0m      1
S1     Post6    1x      0m      4
S2     Pre      0x      0m      1
S2     Pre      1x      0m      2
S2     Post4    0x      0m      1
S2     Post4    1x      0m      2
S2     Post5    0x      0m      1
S2     Post5    1x      0m      1
S2     Post6    0x      0m      1
S2     Post6    1x      0m      2
V      Pre      0x      0m      5
V      Pre      1x      0m      13
V      Pre      2x      0m      4
V      Post1    0x      0m      0
V      Post1    1x      0m      4
V      Post1    2x      0m      0
V      Post2    0x      0m      2
V      Post2    1x      0m      0
V      Post2    2x      0m      0
V      Post3    0x      0m      9
```



**Appendix X.2:** Natural enemy abundance values collected in 2014 from crop fields with yellow sticky cards and SAS 9.2 code used.

V	Post3	1x	0m	8
V	Post3	2x	0m	1
V	Post4	2x	0m	0
V	Post4	0x	0m	1
V	Post4	1x	0m	4
V	Post5	0x	0m	4
V	Post5	1x	0m	21
V	Post5	2x	0m	0
V	Post6	0x	0m	13
V	Post6	1x	0m	25
V	Post6	2x	0m	4
H	Pre	0x	10m	0
H	Pre	1x	10m	1
H	Pre	2x	10m	1
H	Post1	0x	10m	4
H	Post1	1x	10m	4
H	Post1	2x	10m	3
H	Post2	0x	10m	0
H	Post2	1x	10m	0
H	Post2	2x	10m	0
H	Post3	0x	10m	0
H	Post3	1x	10m	1
H	Post3	2x	10m	1
H	Post4	0x	10m	3
H	Post4	1x	10m	4
H	Post4	2x	10m	3
H	Post5	0x	10m	4
H	Post5	1x	10m	3
H	Post5	2x	10m	5
H	Post6	0x	10m	2
H	Post6	1x	10m	0
H	Post6	2x	10m	2
S1	Pre	0x	10m	1
S1	Pre	1x	10m	2
S1	Pre	1x	10m	7
S1	Post4	0x	10m	0
S1	Post4	1x	10m	0
S1	Post4	1x	10m	0
S1	Post5	0x	10m	1
S1	Post5	1x	10m	1
S1	Post5	1x	10m	1
S1	Post6	1x	10m	1
S1	Post6	0x	10m	0
S1	Post6	1x	10m	2
S2	Pre	0x	10m	2
S2	Pre	1x	10m	0
S2	Post4	0x	10m	1
S2	Post4	1x	10m	0
S2	Post5	0x	10m	0
S2	Post5	1x	10m	0
S2	Post6	0x	10m	0
S2	Post6	1x	10m	1
V	Pre	0x	10m	4
V	Pre	1x	10m	3

**Appendix X.3:** Natural enemy abundance values collected in 2014 from crop fields with yellow sticky cards and SAS 9.2 code used.

V	Pre	2x	10m	5
V	Post1	0x	10m	0
V	Post1	1x	10m	2
V	Post1	2x	10m	1
V	Post2	0x	10m	0
V	Post2	1x	10m	1
V	Post2	2x	10m	1
V	Post3	0x	10m	0
V	Post3	1x	10m	2
V	Post3	2x	10m	2
V	Post4	2x	10m	0
V	Post4	0x	10m	0
V	Post4	1x	10m	1
V	Post5	0x	10m	5
V	Post5	1x	10m	4
V	Post5	2x	10m	2
V	Post6	0x	10m	12
V	Post6	1x	10m	10
V	Post6	2x	10m	2
H	Pre	0x	25m	0
H	Pre	1x	25m	0
H	Pre	2x	25m	0
H	Post1	0x	25m	22
H	Post1	1x	25m	4
H	Post1	2x	25m	10
H	Post2	0x	25m	4
H	Post2	1x	25m	0
H	Post2	2x	25m	1
H	Post3	0x	25m	2
H	Post3	1x	25m	0
H	Post3	2x	25m	1
H	Post4	0x	25m	3
H	Post4	1x	25m	4
H	Post4	2x	25m	3
H	Post5	0x	25m	4
H	Post5	1x	25m	2
H	Post5	2x	25m	6
H	Post6	0x	25m	1
H	Post6	1x	25m	5
H	Post6	2x	25m	2
S1	Pre	0x	25m	3
S1	Pre	1x	25m	3
S1	Pre	1x	25m	1
S1	Post4	0x	25m	1
S1	Post4	1x	25m	1
S1	Post4	1x	25m	2
S1	Post5	0x	25m	0
S1	Post5	1x	25m	0
S1	Post5	1x	25m	2
S1	Post6	1x	25m	0
S1	Post6	0x	25m	2
S1	Post6	1x	25m	1
S2	Pre	0x	25m	1
S2	Pre	1x	25m	1

**Appendix X.4:** Natural enemy abundance values collected in 2014 from crop fields with yellow sticky cards and SAS 9.2 code used.

S2	Post4	0x	25m	3
S2	Post4	1x	25m	2
S2	Post5	0x	25m	1
S2	Post5	1x	25m	1
S2	Post6	0x	25m	3
S2	Post6	1x	25m	0
V	Pre	0x	25m	3
V	Pre	1x	25m	1
V	Pre	2x	25m	2
V	Post1	0x	25m	1
V	Post1	1x	25m	0
V	Post1	2x	25m	1
V	Post2	0x	25m	3
V	Post2	1x	25m	0
V	Post2	2x	25m	0
V	Post3	0x	25m	0
V	Post3	1x	25m	1
V	Post3	2x	25m	1
V	Post4	2x	25m	2
V	Post4	0x	25m	0
V	Post4	1x	25m	0
V	Post5	0x	25m	0
V	Post5	1x	25m	0
V	Post5	2x	25m	3
V	Post6	0x	25m	2
V	Post6	1x	25m	9
V	Post6	2x	25m	0
H	Pre	0x	50m	1
H	Pre	1x	50m	0
H	Pre	2x	50m	0
H	Post1	0x	50m	14
H	Post1	1x	50m	7
H	Post1	2x	50m	12
H	Post2	0x	50m	0
H	Post2	1x	50m	0
H	Post2	2x	50m	0
H	Post3	0x	50m	2
H	Post3	1x	50m	1
H	Post3	2x	50m	4
H	Post4	0x	50m	1
H	Post4	1x	50m	6
H	Post4	2x	50m	2
H	Post5	0x	50m	1
H	Post5	1x	50m	3
H	Post5	2x	50m	7
H	Post6	0x	50m	0
H	Post6	1x	50m	2
H	Post6	2x	50m	0
S1	Pre	0x	50m	2
S1	Pre	1x	50m	1
S1	Pre	1x	50m	5
S1	Post4	0x	50m	0
S1	Post4	1x	50m	2
S1	Post4	1x	50m	2

**Appendix X.5:** Natural enemy abundance values collected in 2014 from crop fields with yellow sticky cards and SAS 9.2 code used.

S1	Post5	0x	50m	0
S1	Post5	1x	50m	0
S1	Post5	1x	50m	0
S1	Post6	1x	50m	0
S1	Post6	0x	50m	7
S1	Post6	1x	50m	2
S2	Pre	0x	50m	42
S2	Pre	1x	50m	4
S2	Post4	0x	50m	.
S2	Post4	1x	50m	.
S2	Post5	0x	50m	0
S2	Post5	1x	50m	1
S2	Post6	0x	50m	0
S2	Post6	1x	50m	5
V	Pre	0x	50m	2
V	Pre	1x	50m	2
V	Pre	2x	50m	1
V	Post1	0x	50m	0
V	Post1	1x	50m	1
V	Post1	2x	50m	0
V	Post2	0x	50m	1
V	Post2	1x	50m	0
V	Post2	2x	50m	1
V	Post3	0x	50m	1
V	Post3	1x	50m	2
V	Post3	2x	50m	3
V	Post4	2x	50m	0
V	Post4	0x	50m	0
V	Post4	1x	50m	0
V	Post5	0x	50m	1
V	Post5	1x	50m	1
V	Post5	2x	50m	1
V	Post6	0x	50m	0
V	Post6	1x	50m	6
V	Post6	2x	50m	1
H	Pre	0x	5m	1
H	Pre	1x	5m	0
H	Pre	2x	5m	0
H	Post1	0x	5m	6
H	Post1	1x	5m	1
H	Post1	2x	5m	3
H	Post2	0x	5m	0
H	Post2	1x	5m	1
H	Post2	2x	5m	0
H	Post3	0x	5m	1
H	Post3	1x	5m	3
H	Post3	2x	5m	1
H	Post4	0x	5m	3
H	Post4	1x	5m	7
H	Post4	2x	5m	4
H	Post5	0x	5m	5
H	Post5	1x	5m	2
H	Post5	2x	5m	2
H	Post6	0x	5m	3

**Appendix X.6:** Natural enemy abundance values collected in 2014 from crop fields with yellow sticky cards and SAS 9.2 code used.

H	Post6	1x	5m	2
H	Post6	2x	5m	0
S1	Pre	0x	5m	1
S1	Pre	1x	5m	2
S1	Pre	1x	5m	0
S1	Post4	0x	5m	1
S1	Post4	1x	5m	2
S1	Post4	1x	5m	5
S1	Post5	0x	5m	0
S1	Post5	1x	5m	1
S1	Post5	1x	5m	0
S1	Post6	1x	5m	0
S1	Post6	0x	5m	0
S1	Post6	1x	5m	1
S2	Pre	0x	5m	4
S2	Pre	1x	5m	2
S2	Post4	0x	5m	2
S2	Post4	1x	5m	0
S2	Post5	0x	5m	0
S2	Post5	1x	5m	1
S2	Post6	0x	5m	5
S2	Post6	1x	5m	1
V	Pre	0x	5m	3
V	Pre	1x	5m	3
V	Pre	2x	5m	3
V	Post1	0x	5m	1
V	Post1	1x	5m	0
V	Post1	2x	5m	0
V	Post2	0x	5m	0
V	Post2	1x	5m	0
V	Post2	2x	5m	0
V	Post3	0x	5m	6
V	Post3	1x	5m	3
V	Post3	2x	5m	0
V	Post4	2x	5m	0
V	Post4	0x	5m	0
V	Post4	1x	5m	6
V	Post5	0x	5m	5
V	Post5	1x	5m	4
V	Post5	2x	5m	2
V	Post6	0x	5m	5
V	Post6	1x	5m	15
V	Post6	2x	5m	0

;

```

Proc mixed method = type3;
class site timing treatment distance;
model NE = site timing treatment distance timing*treatment*distance / ddfm = satterth;
slice timing*treatment*distance / sliceby = timing*distance diff lines;

run;
quit;
```

**Appendix Y:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

data NE;

input year \$ site \$ timing \$ treatment \$ distance \$ NE;

cards;

2013	H	Pre	0x	0m	3
2013	H	Pre	1x	0m	2
2013	H	Pre	2x	0m	4
2013	H	Post1	0x	0m	12
2013	H	Post1	1x	0m	3
2013	H	Post1	2x	0m	2
2013	H	Post2	0x	0m	2
2013	H	Post2	1x	0m	3
2013	H	Post2	2x	0m	2
2013	H	Post3	0x	0m	5
2013	H	Post3	1x	0m	7
2013	H	Post3	2x	0m	6
2013	H	Post4	0x	0m	11
2013	H	Post4	1x	0m	19
2013	H	Post4	2x	0m	23
2013	H	Post5	0x	0m	15
2013	H	Post5	1x	0m	30
2013	H	Post5	2x	0m	17
2013	H	Post6	0x	0m	4
2013	H	Post6	1x	0m	13
2013	H	Post6	2x	0m	12
2013	S1	Pre	0x	0m	9
2013	S1	Pre	1x	0m	4
2013	S1	Pre	2x	0m	4
2013	S1	Post4	0x	0m	19
2013	S1	Post4	1x	0m	7
2013	S1	Post4	1x	0m	6
2013	S1	Post5	0x	0m	2
2013	S1	Post5	1x	0m	1
2013	S1	Post5	1x	0m	2
2013	S1	Post6	0x	0m	0
2013	S1	Post6	1x	0m	4
2013	S1	Post6	1x	0m	2
2013	S2	Pre	0x	0m	1
2013	S2	Pre	1x	0m	2
2013	S2	Pre	1x	0m	4
2013	S2	Post4	0x	0m	3
2013	S2	Post4	1x	0m	5
2013	S2	Post5	0x	0m	0
2013	S2	Post5	1x	0m	1
2013	S2	Post6	0x	0m	5
2013	S2	Post4	1x	0m	21
2013	S2	Post6	1x	0m	2
2013	S2	Post5	1x	0m	1
2013	S2	Post6	1x	0m	3
2013	V	Pre	0x	0m	8
2013	V	Pre	1x	0m	11
2013	V	Pre	2x	0m	10
2013	V	Post1	0x	0m	6
2013	V	Post1	1x	0m	2

**Appendix Y.2:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2013	V	Post1	2x	0m	4
2013	V	Post2	0x	0m	24
2013	V	Post2	1x	0m	5
2013	V	Post2	2x	0m	11
2013	V	Post3	0x	0m	5
2013	V	Post3	1x	0m	7
2013	V	Post3	2x	0m	1
2013	V	Post4	0x	0m	9
2013	V	Post4	1x	0m	8
2013	V	Post4	2x	0m	1
2013	V	Post5	0x	0m	4
2013	V	Post5	1x	0m	3
2013	V	Post5	2x	0m	8
2013	V	Post6	0x	0m	13
2013	V	Post6	1x	0m	2
2013	V	Post6	2x	0m	9
2013	H	Pre	0x	10m	2
2013	H	Pre	1x	10m	4
2013	H	Pre	2x	10m	0
2013	H	Post1	0x	10m	1
2013	H	Post1	1x	10m	1
2013	H	Post1	2x	10m	2
2013	H	Post2	0x	10m	7
2013	H	Post2	1x	10m	5
2013	H	Post2	2x	10m	3
2013	H	Post3	0x	10m	4
2013	H	Post3	1x	10m	3
2013	H	Post3	2x	10m	3
2013	H	Post4	0x	10m	15
2013	H	Post4	1x	10m	4
2013	H	Post4	2x	10m	20
2013	H	Post5	0x	10m	8
2013	H	Post5	1x	10m	5
2013	H	Post5	2x	10m	4
2013	H	Post6	0x	10m	3
2013	H	Post6	1x	10m	7
2013	H	Post6	2x	10m	6
2013	S1	Pre	0x	10m	3
2013	S1	Pre	1x	10m	6
2013	S1	Pre	1x	10m	1
2013	S1	Post4	0x	10m	2
2013	S1	Post4	1x	10m	4
2013	S1	Post4	1x	10m	2
2013	S1	Post5	0x	10m	0
2013	S1	Post5	1x	10m	1
2013	S1	Post5	1x	10m	2
2013	S1	Post6	0x	10m	0
2013	S1	Post6	1x	10m	6
2013	S1	Post6	1x	10m	2
2013	S2	Pre	0x	10m	1
2013	S2	Pre	1x	10m	3
2013	S2	Pre	2x	10m	2
2013	S2	Post4	0x	10m	3
2013	S2	Post4	1x	10m	3

**Appendix Y.3:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2013	S2	Post5	0x	10m	0
2013	S2	Post5	1x	10m	0
2013	S2	Post6	0x	10m	1
2013	S2	Post4	1x	10m	5
2013	S2	Post6	1x	10m	3
2013	S2	Post5	1x	10m	2
2013	S2	Post6	1x	10m	6
2013	V	Pre	0x	10m	3
2013	V	Pre	1x	10m	7
2013	V	Pre	2x	10m	3
2013	V	Post1	0x	10m	3
2013	V	Post1	1x	10m	1
2013	V	Post1	2x	10m	4
2013	V	Post2	0x	10m	7
2013	V	Post2	1x	10m	2
2013	V	Post2	2x	10m	5
2013	V	Post3	0x	10m	3
2013	V	Post3	1x	10m	1
2013	V	Post3	2x	10m	5
2013	V	Post4	0x	10m	0
2013	V	Post4	1x	10m	1
2013	V	Post4	2x	10m	0
2013	V	Post5	0x	10m	4
2013	V	Post5	1x	10m	0
2013	V	Post5	2x	10m	1
2013	V	Post6	0x	10m	2
2013	V	Post6	1x	10m	1
2013	V	Post6	2x	10m	2
2013	H	Pre	0x	25m	0
2013	H	Pre	1x	25m	1
2013	H	Pre	2x	25m	2
2013	H	Post1	0x	25m	4
2013	H	Post1	1x	25m	3
2013	H	Post1	2x	25m	7
2013	H	Post2	0x	25m	2
2013	H	Post2	1x	25m	3
2013	H	Post2	2x	25m	4
2013	H	Post3	0x	25m	1
2013	H	Post3	1x	25m	5
2013	H	Post3	2x	25m	2
2013	H	Post4	0x	25m	12
2013	H	Post4	1x	25m	2
2013	H	Post4	2x	25m	18
2013	H	Post5	0x	25m	17
2013	H	Post5	1x	25m	4
2013	H	Post5	2x	25m	18
2013	H	Post6	0x	25m	5
2013	H	Post6	1x	25m	10
2013	H	Post6	2x	25m	9
2013	S1	Pre	0x	25m	6
2013	S1	Pre	1x	25m	0
2013	S1	Pre	1x	25m	3
2013	S1	Post4	0x	25m	3
2013	S1	Post4	1x	25m	3



**Appendix Y.4:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2013	S1	Post4	1x	25m	1
2013	S1	Post5	0x	25m	0
2013	S1	Post5	1x	25m	1
2013	S1	Post5	1x	25m	3
2013	S1	Post6	0x	25m	4
2013	S1	Post6	1x	25m	2
2013	S1	Post6	1x	25m	1
2013	S2	Pre	0x	25m	2
2013	S2	Pre	1x	25m	1
2013	S2	Pre	1x	25m	1
2013	S2	Post4	0x	25m	2
2013	S2	Post4	2x	25m	1
2013	S2	Post5	0x	25m	1
2013	S2	Post5	2x	25m	2
2013	S2	Post6	0x	25m	42
2013	S2	Post4	1x	25m	1
2013	S2	Post6	2x	25m	0
2013	S2	Post5	1x	25m	0
2013	S2	Post6	1x	25m	2
2013	V	Pre	0x	25m	5
2013	V	Pre	1x	25m	3
2013	V	Pre	2x	25m	2
2013	V	Post1	0x	25m	2
2013	V	Post1	1x	25m	0
2013	V	Post1	2x	25m	0
2013	V	Post2	0x	25m	7
2013	V	Post2	1x	25m	3
2013	V	Post2	2x	25m	5
2013	V	Post3	0x	25m	6
2013	V	Post3	1x	25m	1
2013	V	Post3	2x	25m	4
2013	V	Post4	0x	25m	0
2013	V	Post4	1x	25m	0
2013	V	Post4	2x	25m	0
2013	V	Post5	0x	25m	0
2013	V	Post5	1x	25m	0
2013	V	Post5	2x	25m	1
2013	V	Post6	0x	25m	1
2013	V	Post6	1x	25m	1
2013	V	Post6	2x	25m	0
2013	H	Pre	0x	50m	3
2013	H	Pre	1x	50m	2
2013	H	Pre	2x	50m	3
2013	H	Post1	0x	50m	0
2013	H	Post1	1x	50m	5
2013	H	Post1	2x	50m	4
2013	H	Post2	0x	50m	2
2013	H	Post2	1x	50m	1
2013	H	Post2	2x	50m	0
2013	H	Post3	0x	50m	2
2013	H	Post3	1x	50m	5
2013	H	Post3	2x	50m	4
2013	H	Post4	0x	50m	27
2013	H	Post4	1x	50m	4

**Appendix Y.5:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2013	H	Post4	2x	50m	6
2013	H	Post5	0x	50m	13
2013	H	Post5	1x	50m	4
2013	H	Post5	2x	50m	8
2013	H	Post6	0x	50m	4
2013	H	Post6	1x	50m	6
2013	H	Post6	2x	50m	8
2013	S1	Pre	0x	50m	1
2013	S1	Pre	1x	50m	0
2013	S1	Pre	1x	50m	5
2013	S1	Post4	0x	50m	3
2013	S1	Post4	1x	50m	2
2013	S1	Post4	1x	50m	1
2013	S1	Post5	0x	50m	1
2013	S1	Post5	1x	50m	0
2013	S1	Post5	1x	50m	1
2013	S1	Post6	0x	50m	4
2013	S1	Post6	1x	50m	2
2013	S1	Post6	1x	50m	0
2013	S2	Pre	0x	50m	6
2013	S2	Pre	1x	50m	6
2013	S2	Pre	1x	50m	3
2013	S2	Post4	0x	50m	6
2013	S2	Post4	1x	50m	2
2013	S2	Post5	0x	50m	1
2013	S2	Post5	1x	50m	1
2013	S2	Post6	0x	50m	6
2013	S2	Post4	1x	50m	12
2013	S2	Post6	1x	50m	7
2013	S2	Post5	1x	50m	10
2013	S2	Post6	1x	50m	1
2013	V	Pre	0x	50m	2
2013	V	Pre	1x	50m	2
2013	V	Pre	2x	50m	0
2013	V	Post1	0x	50m	1
2013	V	Post1	1x	50m	0
2013	V	Post1	2x	50m	3
2013	V	Post2	0x	50m	5
2013	V	Post2	1x	50m	1
2013	V	Post2	2x	50m	0
2013	V	Post3	0x	50m	3
2013	V	Post3	1x	50m	2
2013	V	Post3	2x	50m	5
2013	V	Post4	0x	50m	0
2013	V	Post4	1x	50m	0
2013	V	Post4	2x	50m	0
2013	V	Post5	0x	50m	0
2013	V	Post5	1x	50m	1
2013	V	Post5	2x	50m	0
2013	V	Post6	0x	50m	0
2013	V	Post6	1x	50m	0
2013	V	Post6	2x	50m	1
2013	H	Pre	0x	5m	1
2013	H	Pre	1x	5m	3

**Appendix Y.6:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2013	H	Pre	2x	5m	1
2013	H	Post1	0x	5m	4
2013	H	Post1	1x	5m	1
2013	H	Post1	2x	5m	10
2013	H	Post2	0x	5m	0
2013	H	Post2	1x	5m	2
2013	H	Post2	2x	5m	2
2013	H	Post3	0x	5m	3
2013	H	Post3	1x	5m	3
2013	H	Post3	2x	5m	3
2013	H	Post4	0x	5m	12
2013	H	Post4	1x	5m	8
2013	H	Post4	2x	5m	20
2013	H	Post5	0x	5m	8
2013	H	Post5	1x	5m	4
2013	H	Post5	2x	5m	13
2013	H	Post6	0x	5m	8
2013	H	Post6	1x	5m	3
2013	H	Post6	2x	5m	4
2013	S1	Pre	0x	5m	3
2013	S1	Pre	1x	5m	4
2013	S1	Pre	1x	5m	1
2013	S1	Post4	0x	5m	2
2013	S1	Post4	1x	5m	4
2013	S1	Post4	1x	5m	2
2013	S1	Post5	0x	5m	0
2013	S1	Post5	1x	5m	0
2013	S1	Post5	1x	5m	1
2013	S1	Post6	0x	5m	0
2013	S1	Post6	1x	5m	4
2013	S1	Post6	1x	5m	2
2013	S2	Pre	0x	5m	2
2013	S2	Pre	1x	5m	2
2013	S2	Pre	1x	5m	4
2013	S2	Post4	0x	5m	8
2013	S2	Post4	1x	5m	5
2013	S2	Post5	0x	5m	2
2013	S2	Post5	1x	5m	1
2013	S2	Post6	0x	5m	2
2013	S2	Post4	1x	5m	1
2013	S2	Post6	1x	5m	5
2013	S2	Post5	1x	5m	4
2013	S2	Post6	1x	5m	3
2013	V	Pre	0x	5m	2
2013	V	Pre	1x	5m	4
2013	V	Pre	2x	5m	4
2013	V	Post1	0x	5m	7
2013	V	Post1	1x	5m	2
2013	V	Post1	2x	5m	0
2013	V	Post2	0x	5m	5
2013	V	Post2	1x	5m	4
2013	V	Post2	2x	5m	6
2013	V	Post3	0x	5m	4
2013	V	Post3	1x	5m	3

**Appendix Y.7:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2013	V	Post3	2x	5m	2
2013	V	Post4	0x	5m	0
2013	V	Post4	1x	5m	0
2013	V	Post4	2x	5m	1
2013	V	Post5	0x	5m	2
2013	V	Post5	1x	5m	2
2013	V	Post5	2x	5m	2
2013	V	Post6	0x	5m	3
2013	V	Post6	1x	5m	1
2013	V	Post6	2x	5m	2
2014	H	Pre	0x	0m	2
2014	H	Pre	1x	0m	3
2014	H	Pre	2x	0m	0
2014	H	Post1	0x	0m	15
2014	H	Post1	1x	0m	6
2014	H	Post1	2x	0m	6
2014	H	Post2	0x	0m	1
2014	H	Post2	1x	0m	2
2014	H	Post2	2x	0m	1
2014	H	Post3	0x	0m	3
2014	H	Post3	1x	0m	2
2014	H	Post3	2x	0m	2
2014	H	Post4	0x	0m	3
2014	H	Post4	1x	0m	1
2014	H	Post4	2x	0m	2
2014	H	Post5	0x	0m	1
2014	H	Post5	1x	0m	4
2014	H	Post5	2x	0m	4
2014	H	Post6	0x	0m	1
2014	H	Post6	1x	0m	2
2014	H	Post6	2x	0m	1
2014	S1	Pre	0x	0m	7
2014	S1	Pre	1x	0m	11
2014	S1	Pre	2x	0m	10
2014	S1	Post4	0x	0m	5
2014	S1	Post4	1x	0m	5
2014	S1	Post4	1x	0m	5
2014	S1	Post5	0x	0m	4
2014	S1	Post5	1x	0m	2
2014	S1	Post5	1x	0m	10
2014	S1	Post6	1x	0m	2
2014	S1	Post6	0x	0m	1
2014	S1	Post6	1x	0m	4
2014	S2	Pre	0x	0m	1
2014	S2	Pre	1x	0m	2
2014	S2	Post4	0x	0m	1
2014	S2	Post4	1x	0m	2
2014	S2	Post5	0x	0m	1
2014	S2	Post5	1x	0m	1
2014	S2	Post6	0x	0m	1
2014	S2	Post6	1x	0m	2
2014	V	Pre	0x	0m	5
2014	V	Pre	1x	0m	13
2014	V	Pre	2x	0m	4

**Appendix Y.8:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2014	V	Post1	0x	0m	0
2014	V	Post1	1x	0m	4
2014	V	Post1	2x	0m	0
2014	V	Post2	0x	0m	2
2014	V	Post2	1x	0m	0
2014	V	Post2	2x	0m	0
2014	V	Post3	0x	0m	9
2014	V	Post3	1x	0m	8
2014	V	Post3	2x	0m	1
2014	V	Post4	2x	0m	0
2014	V	Post4	0x	0m	1
2014	V	Post4	1x	0m	4
2014	V	Post5	0x	0m	4
2014	V	Post5	1x	0m	21
2014	V	Post5	2x	0m	0
2014	V	Post6	0x	0m	13
2014	V	Post6	1x	0m	25
2014	V	Post6	2x	0m	4
2014	H	Pre	0x	10m	0
2014	H	Pre	1x	10m	1
2014	H	Pre	2x	10m	1
2014	H	Post1	0x	10m	4
2014	H	Post1	1x	10m	4
2014	H	Post1	2x	10m	3
2014	H	Post2	0x	10m	0
2014	H	Post2	1x	10m	0
2014	H	Post2	2x	10m	0
2014	H	Post3	0x	10m	0
2014	H	Post3	1x	10m	1
2014	H	Post3	2x	10m	1
2014	H	Post4	0x	10m	3
2014	H	Post4	1x	10m	4
2014	H	Post4	2x	10m	3
2014	H	Post5	0x	10m	4
2014	H	Post5	1x	10m	3
2014	H	Post5	2x	10m	5
2014	H	Post6	0x	10m	2
2014	H	Post6	1x	10m	0
2014	H	Post6	2x	10m	2
2014	S1	Pre	0x	10m	1
2014	S1	Pre	1x	10m	2
2014	S1	Pre	1x	10m	7
2014	S1	Post4	0x	10m	0
2014	S1	Post4	1x	10m	0
2014	S1	Post4	1x	10m	0
2014	S1	Post5	0x	10m	1
2014	S1	Post5	1x	10m	1
2014	S1	Post5	1x	10m	1
2014	S1	Post6	1x	10m	1
2014	S1	Post6	0x	10m	0
2014	S1	Post6	1x	10m	2
2014	S2	Pre	0x	10m	2
2014	S2	Pre	1x	10m	0
2014	S2	Post4	0x	10m	1

**Appendix Y.8:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2014	S2	Post4	1x	10m	0
2014	S2	Post5	0x	10m	0
2014	S2	Post5	1x	10m	0
2014	S2	Post6	0x	10m	0
2014	S2	Post6	1x	10m	1
2014	V	Pre	0x	10m	4
2014	V	Pre	1x	10m	3
2014	V	Pre	2x	10m	5
2014	V	Post1	0x	10m	0
2014	V	Post1	1x	10m	2
2014	V	Post1	2x	10m	1
2014	V	Post2	0x	10m	0
2014	V	Post2	1x	10m	1
2014	V	Post2	2x	10m	1
2014	V	Post3	0x	10m	0
2014	V	Post3	1x	10m	2
2014	V	Post3	2x	10m	2
2014	V	Post4	2x	10m	0
2014	V	Post4	0x	10m	0
2014	V	Post4	1x	10m	1
2014	V	Post5	0x	10m	5
2014	V	Post5	1x	10m	4
2014	V	Post5	2x	10m	2
2014	V	Post6	0x	10m	12
2014	V	Post6	1x	10m	10
2014	V	Post6	2x	10m	2
2014	H	Pre	0x	25m	0
2014	H	Pre	1x	25m	0
2014	H	Pre	2x	25m	0
2014	H	Post1	0x	25m	22
2014	H	Post1	1x	25m	4
2014	H	Post1	2x	25m	10
2014	H	Post2	0x	25m	4
2014	H	Post2	1x	25m	0
2014	H	Post2	2x	25m	1
2014	H	Post3	0x	25m	2
2014	H	Post3	1x	25m	0
2014	H	Post3	2x	25m	1
2014	H	Post4	0x	25m	3
2014	H	Post4	1x	25m	4
2014	H	Post4	2x	25m	3
2014	H	Post5	0x	25m	4
2014	H	Post5	1x	25m	2
2014	H	Post5	2x	25m	6
2014	H	Post6	0x	25m	1
2014	H	Post6	1x	25m	5
2014	H	Post6	2x	25m	2
2014	S1	Pre	0x	25m	3
2014	S1	Pre	1x	25m	3
2014	S1	Pre	1x	25m	1
2014	S1	Post4	0x	25m	1
2014	S1	Post4	1x	25m	1
2014	S1	Post4	1x	25m	2
2014	S1	Post5	0x	25m	0

**Appendix Y.9:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2014	S1	Post5	1x	25m	0
2014	S1	Post5	1x	25m	2
2014	S1	Post6	1x	25m	0
2014	S1	Post6	0x	25m	2
2014	S1	Post6	1x	25m	1
2014	S2	Pre	0x	25m	1
2014	S2	Pre	1x	25m	1
2014	S2	Post4	0x	25m	3
2014	S2	Post4	1x	25m	2
2014	S2	Post5	0x	25m	1
2014	S2	Post5	1x	25m	1
2014	S2	Post6	0x	25m	3
2014	S2	Post6	1x	25m	0
2014	V	Pre	0x	25m	3
2014	V	Pre	1x	25m	1
2014	V	Pre	2x	25m	2
2014	V	Post1	0x	25m	1
2014	V	Post1	1x	25m	0
2014	V	Post1	2x	25m	1
2014	V	Post2	0x	25m	3
2014	V	Post2	1x	25m	0
2014	V	Post2	2x	25m	0
2014	V	Post3	0x	25m	0
2014	V	Post3	1x	25m	1
2014	V	Post3	2x	25m	1
2014	V	Post4	2x	25m	2
2014	V	Post4	0x	25m	0
2014	V	Post4	1x	25m	0
2014	V	Post5	0x	25m	0
2014	V	Post5	1x	25m	0
2014	V	Post5	2x	25m	3
2014	V	Post6	0x	25m	2
2014	V	Post6	1x	25m	9
2014	V	Post6	2x	25m	0
2014	H	Pre	0x	50m	1
2014	H	Pre	1x	50m	0
2014	H	Pre	2x	50m	0
2014	H	Post1	0x	50m	14
2014	H	Post1	1x	50m	7
2014	H	Post1	2x	50m	12
2014	H	Post2	0x	50m	0
2014	H	Post2	1x	50m	0
2014	H	Post2	2x	50m	0
2014	H	Post3	0x	50m	2
2014	H	Post3	1x	50m	1
2014	H	Post3	2x	50m	4
2014	H	Post4	0x	50m	1
2014	H	Post4	1x	50m	6
2014	H	Post4	2x	50m	2
2014	H	Post5	0x	50m	1
2014	H	Post5	1x	50m	3
2014	H	Post5	2x	50m	7
2014	H	Post6	0x	50m	0
2014	H	Post6	1x	50m	2

**Appendix Y.10:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2014	H	Post6	2x	50m	0
2014	S1	Pre	0x	50m	2
2014	S1	Pre	1x	50m	1
2014	S1	Pre	1x	50m	5
2014	S1	Post4	0x	50m	0
2014	S1	Post4	1x	50m	2
2014	S1	Post4	1x	50m	2
2014	S1	Post5	0x	50m	0
2014	S1	Post5	1x	50m	0
2014	S1	Post5	1x	50m	0
2014	S1	Post6	1x	50m	0
2014	S1	Post6	0x	50m	7
2014	S1	Post6	1x	50m	2
2014	S2	Pre	0x	50m	42
2014	S2	Pre	1x	50m	4
2014	S2	Post4	0x	50m	.
2014	S2	Post4	1x	50m	.
2014	S2	Post5	0x	50m	0
2014	S2	Post5	1x	50m	1
2014	S2	Post6	0x	50m	0
2014	S2	Post6	1x	50m	5
2014	V	Pre	0x	50m	2
2014	V	Pre	1x	50m	2
2014	V	Pre	2x	50m	1
2014	V	Post1	0x	50m	0
2014	V	Post1	1x	50m	1
2014	V	Post1	2x	50m	0
2014	V	Post2	0x	50m	1
2014	V	Post2	1x	50m	0
2014	V	Post2	2x	50m	1
2014	V	Post3	0x	50m	1
2014	V	Post3	1x	50m	2
2014	V	Post3	2x	50m	3
2014	V	Post4	2x	50m	0
2014	V	Post4	0x	50m	0
2014	V	Post4	1x	50m	0
2014	V	Post5	0x	50m	1
2014	V	Post5	1x	50m	1
2014	V	Post5	2x	50m	1
2014	V	Post6	0x	50m	0
2014	V	Post6	1x	50m	6
2014	V	Post6	2x	50m	1
2014	H	Pre	0x	5m	1
2014	H	Pre	1x	5m	0
2014	H	Pre	2x	5m	0
2014	H	Post1	0x	5m	6
2014	H	Post1	1x	5m	1
2014	H	Post1	2x	5m	3
2014	H	Post2	0x	5m	0
2014	H	Post2	1x	5m	1
2014	H	Post2	2x	5m	0
2014	H	Post3	0x	5m	1
2014	H	Post3	1x	5m	3
2014	H	Post3	2x	5m	1



**Appendix Y.11:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

2014	H	Post4	0x	5m	3
2014	H	Post4	1x	5m	7
2014	H	Post4	2x	5m	4
2014	H	Post5	0x	5m	5
2014	H	Post5	1x	5m	2
2014	H	Post5	2x	5m	2
2014	H	Post6	0x	5m	3
2014	H	Post6	1x	5m	2
2014	H	Post6	2x	5m	0
2014	S1	Pre	0x	5m	1
2014	S1	Pre	1x	5m	2
2014	S1	Pre	1x	5m	0
2014	S1	Post4	0x	5m	1
2014	S1	Post4	1x	5m	2
2014	S1	Post4	1x	5m	5
2014	S1	Post5	0x	5m	0
2014	S1	Post5	1x	5m	1
2014	S1	Post5	1x	5m	0
2014	S1	Post6	1x	5m	0
2014	S1	Post6	0x	5m	0
2014	S1	Post6	1x	5m	1
2014	S2	Pre	0x	5m	4
2014	S2	Pre	1x	5m	2
2014	S2	Post4	0x	5m	2
2014	S2	Post4	1x	5m	0
2014	S2	Post5	0x	5m	0
2014	S2	Post5	1x	5m	1
2014	S2	Post6	0x	5m	5
2014	S2	Post6	1x	5m	1
2014	V	Pre	0x	5m	3
2014	V	Pre	1x	5m	3
2014	V	Pre	2x	5m	3
2014	V	Post1	0x	5m	1
2014	V	Post1	1x	5m	0
2014	V	Post1	2x	5m	0
2014	V	Post2	0x	5m	0
2014	V	Post2	1x	5m	0
2014	V	Post2	2x	5m	0
2014	V	Post3	0x	5m	6
2014	V	Post3	1x	5m	3
2014	V	Post3	2x	5m	0
2014	V	Post4	2x	5m	0
2014	V	Post4	0x	5m	0
2014	V	Post4	1x	5m	6
2014	V	Post5	0x	5m	5
2014	V	Post5	1x	5m	4
2014	V	Post5	2x	5m	2
2014	V	Post6	0x	5m	5
2014	V	Post6	1x	5m	15
2014	V	Post6	2x	5m	0

;

**Appendix Y.12:** Natural enemy abundance values collected in 2013/2014 combined from crop fields with yellow sticky cards and SAS 9.2 code used.

```
Proc mixed method = type3;  
class year site timing treatment distance;  
model NE = year site timing treatment timing*treatment*distance / ddfm = satterth;  
slice timing*treatment*distance / sliceby = timing*distance diff lines;  
  
run;  
quit;
```

**Appendix Z:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

data NE;

input site \$ timing \$ treatment \$ distance \$ trap \$ NE;

cards;

H	Pre	0x	0m	1	6
H	Pre	0x	0m	2	1
H	Pre	1x	0m	1	5
H	Pre	1x	0m	2	1
H	Pre	2x	0m	1	4
H	Pre	2x	0m	2	4
H	Post1	0x	0m	1	6
H	Post1	0x	0m	2	1
H	Post1	1x	0m	1	7
H	Post1	1x	0m	2	5
H	Post1	2x	0m	1	9
H	Post1	2x	0m	2	12
V	Pre	0x	0m	1	7
V	Pre	0x	0m	2	16
V	Pre	1x	0m	1	4
V	Pre	1x	0m	2	4
V	Pre	2x	0m	1	23
V	Pre	2x	0m	2	17
H	Post2	0x	0m	1	2
H	Post2	0x	0m	2	2
H	Post2	1x	0m	1	2
H	Post2	1x	0m	2	4
H	Post2	2x	0m	1	1
H	Post2	2x	0m	2	5
H	Post3	0x	0m	1	1
H	Post3	0x	0m	2	4
H	Post3	1x	0m	1	2
H	Post3	1x	0m	2	1
H	Post3	2x	0m	1	6
H	Post3	2x	0m	2	10
V	Post1	0x	0m	1	13
V	Post1	0x	0m	2	5
V	Post1	1x	0m	1	0
V	Post1	1x	0m	2	2
V	Post1	2x	0m	1	13
V	Post1	2x	0m	2	14
V	Post2	0x	0m	1	1
V	Post2	0x	0m	2	4
V	Post2	1x	0m	1	4
V	Post2	1x	0m	2	2
V	Post2	2x	0m	1	5
V	Post2	2x	0m	2	10
S1	Pre	0x	0m	1	14
S1	Pre	0x	0m	1	10

**Appendix Z.2:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

S1	Pre	1x	0m	1	2
S1	Pre	1x	0m	2	4
S1	Pre	2x	0m	1	3
S1	Pre	2x	0m	2	3
S2	Pre	0x	0m	1	2
S2	Pre	0x	0m	2	4
S2	Pre	1x	0m	1	8
S2	Pre	1x	0m	2	11
S2	Pre	2x	0m	1	1
S2	Pre	2x	0m	2	4
V	Post3	0x	0m	1	7
V	Post3	0x	0m	2	5
V	Post3	1x	0m	1	4
V	Post3	1x	0m	2	0
V	Post3	2x	0m	1	6
V	Post3	2x	0m	2	19
S1	Post4	0x	0m	1	2
S1	Post4	0x	0m	2	3
S1	Post4	1x	0m	1	5
S1	Post4	1x	0m	2	6
S1	Post4	2x	0m	1	2
S1	Post4	2x	0m	2	3
S2	Post4	0x	0m	1	5
S2	Post4	0x	0m	2	3
S2	Post4	2x	0m	1	1
S2	Post4	2x	0m	2	0
S1	Post5	0x	0m	1	2
S1	Post5	0x	0m	2	7
S1	Post5	1x	0m	1	5
S1	Post5	1x	0m	2	0
S1	Post5	2x	0m	1	4
S1	Post5	2x	0m	2	1
S2	Post5	0x	0m	1	3
S2	Post5	0x	0m	2	6
S2	Post5	2x	0m	1	3
S2	Post5	2x	0m	2	1
S1	Post6	0x	0m	1	2
S1	Post6	0x	0m	2	.
S1	Post6	1x	0m	1	2
S1	Post6	1x	0m	2	4
S1	Post6	2x	0m	1	3
S1	Post6	2x	0m	2	0
S2	Post6	0x	0m	1	0
S2	Post6	0x	0m	2	5
S2	Post4	1x	0m	1	0
S2	Post4	1x	0m	2	3
S2	Post6	2x	0m	1	3

**Appendix Z.3:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

S2	Post6	2x	0m	2	2
S2	Post5	1x	0m	1	0
S2	Post5	1x	0m	2	0
S2	Post6	1x	0m	1	1
S2	Post6	1x	0m	2	3
V	Post4	0x	0m	1	0
V	Post4	0x	0m	2	1
V	Post4	1x	0m	1	0
V	Post4	1x	0m	2	0
V	Post4	2x	0m	1	3
V	Post4	2x	0m	2	3
V	Post5	0x	0m	1	5
V	Post5	0x	0m	2	3
V	Post5	1x	0m	1	3
V	Post5	1x	0m	2	3
V	Post5	2x	0m	1	2
V	Post5	2x	0m	2	3
V	Post6	0x	0m	1	2
V	Post6	0x	0m	2	0
V	Post6	1x	0m	1	8
V	Post6	1x	0m	2	0
V	Post6	2x	0m	1	3
V	Post6	2x	0m	2	11
H	Post4	0x	0m	1	0
H	Post4	0x	0m	2	2
H	Post4	1x	0m	1	4
H	Post4	1x	0m	2	16
H	Post4	2x	0m	1	21
H	Post4	2x	0m	2	11
H	Post5	0x	0m	1	.
H	Post5	0x	0m	2	3
H	Post5	1x	0m	1	7
H	Post5	1x	0m	2	10
H	Post5	2x	0m	1	21
H	Post5	2x	0m	2	9
H	Post6	0x	0m	1	11
H	Post6	0x	0m	2	3
H	Post6	1x	0m	1	13
H	Post6	1x	0m	2	4
H	Post6	2x	0m	1	19
H	Post6	2x	0m	2	24
H	Pre	0x	10m	1	0
H	Pre	0x	10m	2	2
H	Pre	1x	10m	1	0
H	Pre	1x	10m	2	1
H	Pre	2x	10m	1	0
H	Pre	2x	10m	2	0

**Appendix Z.4:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

H	Post1	0x	10m	1	1
H	Post1	0x	10m	2	1
H	Post1	1x	10m	1	5
H	Post1	1x	10m	2	4
H	Post1	2x	10m	1	6
H	Post1	2x	10m	2	2
V	Pre	0x	10m	1	7
V	Pre	0x	10m	2	7
V	Pre	1x	10m	1	2
V	Pre	1x	10m	2	1
V	Pre	2x	10m	1	3
V	Pre	2x	10m	2	1
H	Post2	0x	10m	1	0
H	Post2	0x	10m	2	1
H	Post2	1x	10m	1	0
H	Post2	1x	10m	2	0
H	Post2	2x	10m	1	1
H	Post2	2x	10m	2	1
H	Post3	0x	10m	1	2
H	Post3	0x	10m	2	0
H	Post3	1x	10m	1	1
H	Post3	1x	10m	2	0
H	Post3	2x	10m	1	0
H	Post3	2x	10m	2	3
V	Post1	0x	10m	1	2
V	Post1	0x	10m	2	1
V	Post1	1x	10m	1	2
V	Post1	1x	10m	2	0
V	Post1	2x	10m	1	3
V	Post1	2x	10m	2	0
V	Post2	0x	10m	1	.
V	Post2	0x	10m	2	1
V	Post2	1x	10m	1	2
V	Post2	1x	10m	2	6
V	Post2	2x	10m	1	.
V	Post2	2x	10m	2	.
S1	Pre	0x	10m	1	4
S1	Pre	0x	10m	2	5
S1	Pre	1x	10m	1	4
S1	Pre	1x	10m	2	1
S1	Pre	2x	10m	1	1
S1	Pre	2x	10m	2	1
S2	Pre	0x	10m	1	5
S2	Pre	0x	10m	2	1
S2	Pre	1x	10m	1	0
S2	Pre	1x	10m	2	22
S2	Pre	2x	10m	1	1

**Appendix Z.5:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

S2	Pre	2x	10m	2	0
V	Post3	0x	10m	1	6
V	Post3	0x	10m	2	.
V	Post3	1x	10m	1	0
V	Post3	1x	10m	2	7
V	Post3	2x	10m	1	0
V	Post3	2x	10m	2	0
S1	Post4	0x	10m	1	3
S1	Post4	0x	10m	2	5
S1	Post4	1x	10m	1	0
S1	Post4	1x	10m	2	1
S1	Post4	2x	10m	1	2
S1	Post4	2x	10m	2	2
S2	Post4	0x	10m	1	0
S2	Post4	0x	10m	2	6
S2	Post4	2x	10m	1	2
S2	Post4	2x	10m	2	5
S1	Post5	0x	10m	1	0
S1	Post5	0x	10m	2	0
S1	Post5	1x	10m	1	1
S1	Post5	1x	10m	2	1
S1	Post5	2x	10m	1	2
S1	Post5	2x	10m	2	0
S2	Post5	0x	10m	1	4
S2	Post5	0x	10m	2	0
S2	Post5	2x	10m	1	0
S2	Post5	2x	10m	2	3
S1	Post6	0x	10m	1	2
S1	Post6	0x	10m	1	2
S1	Post6	1x	10m	1	2
S1	Post6	1x	10m	2	1
S1	Post6	2x	10m	1	0
S1	Post6	2x	10m	2	1
S2	Post6	0x	10m	1	4
S2	Post6	0x	10m	2	1
S2	Post4	1x	10m	1	1
S2	Post4	1x	10m	2	2
S2	Post6	2x	10m	1	0
S2	Post6	2x	10m	2	0
S2	Post5	1x	10m	1	2
S2	Post5	1x	10m	2	2
S2	Post6	1x	10m	1	1
S2	Post6	1x	10m	2	0
V	Post4	0x	10m	1	.
V	Post4	0x	10m	2	.
V	Post4	1x	10m	1	0
V	Post4	1x	10m	2	1

**Appendix Z.6:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

V	Post4	2x	10m	1	.
V	Post4	2x	10m	2	.
V	Post5	0x	10m	1	.
V	Post5	0x	10m	2	0
V	Post5	1x	10m	1	2
V	Post5	1x	10m	2	2
V	Post5	2x	10m	1	1
V	Post5	2x	10m	2	0
V	Post6	0x	10m	1	.
V	Post6	0x	10m	2	.
V	Post6	1x	10m	1	4
V	Post6	1x	10m	2	0
V	Post6	2x	10m	1	0
V	Post6	2x	10m	2	1
H	Post4	0x	10m	1	1
H	Post4	0x	10m	2	9
H	Post4	1x	10m	1	6
H	Post4	1x	10m	2	6
H	Post4	2x	10m	1	16
H	Post4	2x	10m	2	17
H	Post5	0x	10m	1	22
H	Post5	0x	10m	2	44
H	Post5	1x	10m	1	1
H	Post5	1x	10m	2	5
H	Post5	2x	10m	1	30
H	Post5	2x	10m	2	14
H	Post6	0x	10m	1	21
H	Post6	0x	10m	2	28
H	Post6	1x	10m	1	3
H	Post6	1x	10m	2	1
H	Post6	2x	10m	1	44
H	Post6	2x	10m	2	38
H	Pre	0x	25m	1	1
H	Pre	0x	25m	2	0
H	Pre	1x	25m	1	2
H	Pre	1x	25m	2	0
H	Pre	2x	25m	1	3
H	Pre	2x	25m	2	2
H	Post1	0x	25m	1	2
H	Post1	0x	25m	2	0
H	Post1	1x	25m	1	6
H	Post1	1x	25m	2	4
H	Post1	2x	25m	1	0
H	Post1	2x	25m	2	3
V	Pre	0x	25m	1	4
V	Pre	0x	25m	2	7
V	Pre	1x	25m	1	4



**Appendix Z.7:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

V	Pre	1x	25m	2	0
V	Pre	2x	25m	1	7
V	Pre	2x	25m	2	25
H	Post2	0x	25m	1	2
H	Post2	0x	25m	2	2
H	Post2	1x	25m	1	3
H	Post2	1x	25m	2	4
H	Post2	2x	25m	1	1
H	Post2	2x	25m	2	3
H	Post3	0x	25m	1	25
H	Post3	0x	25m	2	2
H	Post3	1x	25m	1	0
H	Post3	1x	25m	2	1
H	Post3	2x	25m	1	0
H	Post3	2x	25m	2	0
V	Post1	0x	25m	1	5
V	Post1	0x	25m	2	3
V	Post1	1x	25m	1	1
V	Post1	1x	25m	2	1
V	Post1	2x	25m	1	3
V	Post1	2x	25m	2	0
V	Post2	0x	25m	1	2
V	Post2	0x	25m	2	0
V	Post2	1x	25m	1	2
V	Post2	1x	25m	2	3
V	Post2	2x	25m	1	.
V	Post2	2x	25m	2	1
S1	Pre	0x	25m	1	1
S1	Pre	0x	25m	2	0
S1	Pre	1x	25m	1	0
S1	Pre	1x	25m	2	4
S1	Pre	2x	25m	2	2
S2	Pre	0x	25m	1	3
S2	Pre	0x	25m	2	2
S2	Pre	1x	25m	1	7
S2	Pre	1x	25m	2	1
S2	Pre	2x	25m	1	4
S2	Pre	2x	25m	2	2
V	Post3	0x	25m	1	0
V	Post3	0x	25m	2	3
V	Post3	1x	25m	1	4
V	Post3	1x	25m	2	0
V	Post3	2x	25m	1	1
V	Post3	2x	25m	2	0
S1	Post4	0x	25m	1	0
S1	Post4	0x	25m	2	1
S1	Post4	1x	25m	1	0

**Appendix Z.8:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

S1	Post4	1x	25m	2	1
S1	Post4	2x	25m	1	3
S1	Post4	2x	25m	2	2
S2	Post4	0x	25m	1	0
S2	Post4	0x	25m	2	3
S2	Post4	2x	25m	1	0
S2	Post4	2x	25m	2	2
S1	Post5	0x	25m	1	1
S1	Post5	0x	25m	2	0
S1	Post5	1x	25m	1	2
S1	Post5	1x	25m	2	0
S1	Post5	2x	25m	1	2
S1	Post5	2x	25m	2	0
S2	Post5	0x	25m	1	1
S2	Post5	0x	25m	2	2
S2	Post5	2x	25m	1	2
S2	Post5	2x	25m	2	1
S1	Post6	0x	25m	1	.
S1	Post6	0x	25m	2	0
S1	Post6	1x	25m	1	.
S1	Post6	1x	25m	2	.
S1	Post6	2x	25m	1	2
S1	Post6	2x	25m	2	0
S2	Post6	0x	25m	1	1
S2	Post6	0x	25m	2	0
S2	Post4	1x	25m	1	2
S2	Post4	1x	25m	2	3
S2	Post6	2x	25m	1	1
S2	Post6	2x	25m	2	0
S2	Post5	1x	25m	1	0
S2	Post5	1x	25m	2	1
S2	Post6	1x	25m	1	2
S2	Post6	1x	25m	2	1
V	Post4	0x	25m	1	.
V	Post4	0x	25m	2	.
V	Post4	1x	25m	1	.
V	Post4	1x	25m	2	.
V	Post4	2x	25m	1	.
V	Post4	2x	25m	2	.
V	Post5	0x	25m	1	.
V	Post5	0x	25m	2	0
V	Post5	1x	25m	1	1
V	Post5	1x	25m	2	1
V	Post5	2x	25m	1	.
V	Post5	2x	25m	2	.
V	Post6	0x	25m	1	0
V	Post6	0x	25m	2	0

**Appendix Z.9:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

V	Post6	1x	25m	1	2
V	Post6	1x	25m	2	1
V	Post6	2x	25m	1	.
V	Post6	2x	25m	2	.
H	Post4	0x	25m	1	0
H	Post4	0x	25m	2	1
H	Post4	1x	25m	1	1
H	Post4	1x	25m	2	1
H	Post4	2x	25m	1	43
H	Post4	2x	25m	2	2
H	Post5	0x	25m	1	31
H	Post5	0x	25m	2	21
H	Post5	1x	25m	1	0
H	Post5	1x	25m	2	0
H	Post5	2x	25m	1	3
H	Post5	2x	25m	2	36
H	Post6	0x	25m	1	10
H	Post6	0x	25m	2	16
H	Post6	1x	25m	1	5
H	Post6	1x	25m	2	3
H	Post6	2x	25m	1	9
H	Post6	2x	25m	2	26
S1	Pre	2x	25m	1	1
H	Pre	0x	50m	1	4
H	Pre	0x	50m	2	1
H	Pre	1x	50m	1	21
H	Pre	1x	50m	2	2
H	Pre	2x	50m	1	3
H	Pre	2x	50m	2	2
H	Post1	0x	50m	1	1
H	Post1	0x	50m	2	16
H	Post1	1x	50m	1	14
H	Post1	1x	50m	2	8
H	Post1	2x	50m	1	2
H	Post1	2x	50m	2	1
V	Pre	0x	50m	1	2
V	Pre	0x	50m	2	5
V	Pre	1x	50m	1	2
V	Pre	1x	50m	2	2
V	Pre	2x	50m	1	8
V	Pre	2x	50m	2	2
H	Post2	0x	50m	1	3
H	Post2	0x	50m	2	2
H	Post2	1x	50m	1	2
H	Post2	1x	50m	2	1
H	Post2	2x	50m	1	0
H	Post2	2x	50m	2	0

**Appendix Z.10:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

H	Post3	0x	50m	1	0
H	Post3	0x	50m	2	1
H	Post3	1x	50m	1	0
H	Post3	1x	50m	2	0
H	Post3	2x	50m	1	0
H	Post3	2x	50m	2	0
V	Post1	0x	50m	1	3
V	Post1	0x	50m	2	0
V	Post1	1x	50m	1	2
V	Post1	1x	50m	2	1
V	Post1	2x	50m	1	1
V	Post1	2x	50m	2	0
V	Post2	0x	50m	1	.
V	Post2	0x	50m	2	1
V	Post2	1x	50m	1	.
V	Post2	1x	50m	2	0
V	Post2	2x	50m	1	1
V	Post2	2x	50m	2	1
S1	Pre	0x	50m	1	1
S1	Pre	0x	50m	2	1
S1	Pre	1x	50m	1	8
S1	Pre	1x	50m	2	3
S1	Pre	2x	50m	1	0
S1	Pre	2x	50m	2	1
S2	Pre	0x	50m	1	1
S2	Pre	0x	50m	2	3
S2	Pre	1x	50m	1	0
S2	Pre	1x	50m	2	3
S2	Pre	2x	50m	1	5
S2	Pre	2x	50m	2	2
V	Post3	0x	50m	1	.
V	Post3	0x	50m	2	.
V	Post3	1x	50m	1	0
V	Post3	1x	50m	2	1
V	Post3	2x	50m	1	0
V	Post3	2x	50m	2	3
S1	Post4	0x	50m	1	2
S1	Post4	0x	50m	2	2
S1	Post4	1x	50m	1	3
S1	Post4	1x	50m	2	8
S1	Post4	2x	50m	1	4
S1	Post4	2x	50m	2	0
S2	Post4	0x	50m	1	2
S2	Post4	0x	50m	1	0
S2	Post4	2x	50m	1	2
S2	Post4	2x	50m	2	3
S1	Post6	0x	50m	1	0

**Appendix Z.11:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

S1	Post6	0x	50m	2	1
S1	Post6	1x	50m	1	1
S1	Post6	1x	50m	2	2
S1	Post6	2x	50m	1	0
S1	Post6	2x	50m	2	0
S2	Post6	0x	50m	1	1
S2	Post6	0x	50m	2	0
S2	Post4	1x	50m	1	2
S2	Post4	1x	50m	2	3
S2	Post6	2x	50m	1	0
S2	Post6	2x	50m	2	1
V	Post6	2x	50m	2	2
H	Post4	0x	50m	1	2
H	Post4	0x	50m	2	0
H	Post4	1x	50m	1	0
H	Post4	1x	50m	2	0
H	Post4	2x	50m	1	13
H	Post4	2x	50m	2	1
H	Post5	0x	50m	1	1
H	Post5	0x	50m	2	9
H	Post5	1x	50m	1	0
H	Post5	1x	50m	2	0
H	Post5	2x	50m	1	0
H	Post5	2x	50m	2	7
H	Post6	0x	50m	1	20
H	Post6	0x	50m	2	3
H	Post6	1x	50m	1	2
H	Post6	1x	50m	2	0
H	Post6	2x	50m	1	11
H	Post6	2x	50m	2	15
S1	Post5	0x	50m	1	2
S1	Post5	0x	50m	2	2
S1	Post5	1x	50m	1	1
S1	Post5	1x	50m	2	3
S1	Post5	2x	50m	1	0
S1	Post5	2x	50m	2	0
S2	Post5	0x	50m	1	1
S2	Post5	0x	50m	2	1
S2	Post5	2x	50m	1	1
S2	Post5	2x	50m	2	0
S2	Post5	1x	50m	1	0
S2	Post5	1x	50m	2	1
S2	Post6	1x	50m	1	3
S2	Post6	1x	50m	2	1
V	Post4	0x	50m	1	.
V	Post4	0x	50m	2	.
V	Post4	1x	50m	1	.

**Appendix Z.12:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

V	Post4	1x	50m	2	.
V	Post4	2x	50m	1	.
V	Post4	2x	50m	2	.
V	Post5	0x	50m	1	.
V	Post5	0x	50m	2	0
V	Post5	1x	50m	1	.
V	Post5	1x	50m	2	0
V	Post5	2x	50m	1	0
V	Post5	2x	50m	2	1
V	Post6	0x	50m	1	.
V	Post6	0x	50m	2	0
V	Post6	1x	50m	1	.
V	Post6	1x	50m	2	.
V	Post6	2x	50m	1	0
H	Pre	0x	5m	1	1
H	Pre	0x	5m	2	4
H	Pre	1x	5m	1	4
H	Pre	1x	5m	2	2
H	Pre	2x	5m	1	3
H	Pre	2x	5m	2	2
H	Post1	0x	5m	1	0
H	Post1	0x	5m	2	1
H	Post1	1x	5m	1	6
H	Post1	1x	5m	2	0
H	Post1	2x	5m	1	1
H	Post1	2x	5m	2	1
V	Pre	0x	5m	1	6
V	Pre	0x	5m	2	4
V	Pre	1x	5m	1	1
V	Pre	1x	5m	2	1
V	Pre	2x	5m	1	6
V	Pre	2x	5m	2	5
H	Post2	0x	5m	1	0
H	Post2	0x	5m	1	1
H	Post2	1x	5m	1	0
H	Post2	1x	5m	2	0
H	Post2	2x	5m	1	1
H	Post2	2x	5m	2	0
H	Post3	0x	5m	1	4
H	Post3	0x	5m	2	1
H	Post3	1x	5m	1	3
H	Post3	1x	5m	2	0
H	Post3	2x	5m	1	1
H	Post3	2x	5m	2	0
V	Post1	0x	5m	1	5
V	Post1	0x	5m	2	0
V	Post1	1x	5m	1	0

**Appendix Z.13:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

V	Post1	1x	5m	2	2
V	Post1	2x	5m	1	3
V	Post1	2x	5m	2	1
V	Post2	0x	5m	1	4
V	Post2	0x	5m	2	3
V	Post2	1x	5m	1	.
V	Post2	1x	5m	2	0
V	Post2	2x	5m	1	2
V	Post2	2x	5m	2	0
S1	Pre	0x	5m	1	2
S1	Pre	0x	5m	2	7
S1	Pre	1x	5m	1	1
S1	Pre	1x	5m	2	1
S1	Pre	2x	5m	1	0
S1	Pre	2x	5m	2	1
S2	Pre	0x	5m	1	3
S2	Pre	0x	5m	2	1
S2	Pre	1x	5m	1	7
S2	Pre	1x	5m	2	6
S2	Pre	2x	5m	1	2
S2	Pre	2x	5m	2	3
V	Post3	0x	5m	1	3
V	Post3	0x	5m	2	0
V	Post3	1x	5m	1	8
V	Post3	1x	5m	2	0
V	Post3	2x	5m	1	1
V	Post3	2x	5m	2	2
S1	Post4	0x	5m	1	3
S1	Post4	0x	5m	2	0
S1	Post4	1x	5m	1	1
S1	Post4	1x	5m	2	8
S1	Post4	2x	5m	1	1
S1	Post4	2x	5m	2	0
S2	Post4	0x	5m	1	1
S2	Post4	0x	5m	2	1
S2	Post4	2x	5m	1	2
S2	Post4	2x	5m	2	4
S1	Post5	0x	5m	1	2
S1	Post5	0x	5m	2	0
S1	Post5	1x	5m	1	1
S1	Post5	1x	5m	2	2
S1	Post5	2x	5m	1	0
S1	Post5	2x	5m	2	0
S2	Post5	0x	5m	1	0
S2	Post5	0x	5m	2	3
S2	Post5	2x	5m	1	0
S2	Post5	2x	5m	2	0

**Appendix Z.14:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

S1	Post6	0x	5m	1	.
S1	Post6	0x	5m	2	.
S1	Post6	1x	5m	1	0
S1	Post6	1x	5m	2	1
S1	Post6	2x	5m	1	.
S1	Post6	2x	5m	2	1
S2	Post6	0x	5m	1	1
S2	Post6	0x	5m	2	0
S2	Post4	1x	5m	1	3
S2	Post4	1x	5m	2	4
S2	Post6	2x	5m	1	1
S2	Post6	2x	5m	2	2
S2	Post5	1x	5m	1	1
S2	Post5	1x	5m	2	1
S2	Post6	1x	5m	1	0
S2	Post6	1x	5m	2	2
V	Post4	0x	5m	1	.
V	Post4	0x	5m	2	.
V	Post4	1x	5m	1	2
V	Post4	1x	5m	2	1
V	Post4	2x	5m	1	0
V	Post4	2x	5m	2	0
V	Post5	0x	5m	1	0
V	Post5	0x	5m	2	1
V	Post5	1x	5m	1	0
V	Post5	1x	5m	2	1
V	Post5	2x	5m	1	0
V	Post5	2x	5m	2	0
V	Post6	0x	5m	1	0
V	Post6	0x	5m	2	0
V	Post6	1x	5m	1	.
V	Post6	1x	5m	2	.
V	Post6	2x	5m	1	1
V	Post6	2x	5m	2	2
H	Post4	0x	5m	1	4
H	Post4	0x	5m	2	20
H	Post4	1x	5m	1	2
H	Post4	1x	5m	2	5
H	Post4	2x	5m	1	52
H	Post4	2x	5m	2	31
H	Post5	0x	5m	1	18
H	Post5	0x	5m	2	25
H	Post5	1x	5m	1	13
H	Post5	1x	5m	2	2
H	Post5	2x	5m	1	32
H	Post5	2x	5m	2	44
H	Post6	0x	5m	1	38



**Appendix Z.15:** Beneficial arthropod abundance values collected in 2013 from crop fields with pitfall traps and SAS 9.2 code used.

H	Post6	0x	5m	2	28
H	Post6	1x	5m	1	11
H	Post6	1x	5m	2	11
H	Post6	2x	5m	1	34
H	Post6	2x	5m	2	48

;

proc sort data=NE;

by site timing treatment distance;

run;

proc means data=NE;

by site timing treatment distance;

var NE;

output out=mean\_NE mean=mean\_NE;

run;

proc mixed data=mean\_NE;

class site timing distance treatment;

model mean\_NE=site timing treatment distance timing\*treatment\*distance / ddfm = satterth;

slice timing\*treatment\*distance / sliceby = timing\*distance diff lines;

run;

**Appendix AA:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

data NE;

input site \$ timing \$ treatment \$ distance \$ trap \$ NE;

cards;

H	Pre	0x	0m	1	11
H	Pre	0x	0m	2	9
H	Pre	1x	0m	1	15
H	Pre	1x	0m	2	11
H	Pre	2x	0m	1	3
H	Pre	2x	0m	2	8
V	Pre	0x	0m	1	2
V	Pre	0x	0m	2	5
V	Pre	1x	0m	1	6
V	Pre	1x	0m	2	11
V	Pre	2x	0m	1	27
V	Pre	2x	0m	2	20
H	Post1	0x	0m	1	4
H	Post1	0x	0m	2	14
H	Post1	1x	0m	1	6
H	Post1	1x	0m	2	7
H	Post1	2x	0m	1	8
H	Post1	2x	0m	2	14
V	Post1	0x	0m	1	1
V	Post1	0x	0m	2	2
V	Post1	1x	0m	1	7
V	Post1	1x	0m	2	0
V	Post1	2x	0m	1	8
V	Post1	2x	0m	2	14
H	Post2	0x	0m	1	13
H	Post2	0x	0m	2	8
H	Post2	1x	0m	1	6
H	Post2	1x	0m	2	6
H	Post2	2x	0m	1	3
H	Post2	2x	0m	2	4
H	Post3	0x	0m	1	11
H	Post3	0x	0m	2	3
H	Post3	1x	0m	1	2
H	Post3	1x	0m	2	9
H	Post3	2x	0m	1	5
H	Post3	2x	0m	2	8
V	Post2	0x	0m	1	11
V	Post2	0x	0m	2	0
V	Post2	1x	0m	1	1
V	Post2	1x	0m	2	2
V	Post2	2x	0m	1	5
V	Post2	2x	0m	2	4
S1	Pre	0x	0m	1	19
S1	Pre	0x	0m	2	27

**Appendix AA.2:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

S1	Pre	1x	0m	1	9
S1	Pre	1x	0m	2	10
S1	Pre	1x	0m	1	1
S1	Pre	1x	0m	2	7
S2	Pre	0x	0m	1	5
S2	Pre	0x	0m	2	116
S2	Pre	1x	0m	1	2
S2	Pre	1x	0m	2	2
V	Post3	0x	0m	1	3
V	Post3	0x	0m	2	3
V	Post3	1x	0m	1	0
V	Post3	1x	0m	2	0
V	Post3	2x	0m	1	3
V	Post3	2x	0m	2	9
S1	Post4	0x	0m	1	13
S1	Post4	0x	0m	2	6
S1	Post4	1x	0m	1	2
S1	Post4	1x	0m	2	15
S1	Post4	1x	0m	1	7
S1	Post4	1x	0m	2	5
S2	Post4	0x	0m	1	13
S2	Post4	0x	0m	2	5
S2	Post4	1x	0m	1	2
S2	Post4	1x	0m	2	14
S1	Post5	0x	0m	1	.
S1	Post5	0x	0m	2	.
S1	Post5	1x	0m	1	14
S1	Post5	1x	0m	2	7
S1	Post5	1x	0m	1	.
S1	Post5	1x	0m	2	14
S2	Post5	0x	0m	1	5
S2	Post5	0x	0m	2	3
S2	Post5	1x	0m	1	6
S2	Post5	1x	0m	2	1
V	Post4	0x	0m	1	2
V	Post4	0x	0m	2	3
V	Post4	1x	0m	1	.
V	Post4	1x	0m	2	0
V	Post4	2x	0m	1	3
V	Post4	2x	0m	2	3
S1	Post6	0x	0m	1	5
S1	Post6	0x	0m	2	3
S1	Post6	1x	0m	1	10
S1	Post6	1x	0m	2	3
S1	Post6	1x	0m	1	7
S1	Post6	1x	0m	2	3
S2	Post6	0x	0m	1	14

**Appendix AA.3:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

S2	Post6	0x	0m	2	9
S2	Post6	1x	0m	1	11
S2	Post6	1x	0m	2	1
V	Post5	0x	0m	1	0
V	Post5	0x	0m	2	0
V	Post5	1x	0m	1	2
V	Post5	1x	0m	2	0
V	Post5	2x	0m	1	6
V	Post5	2x	0m	2	4
V	Post6	0x	0m	1	2
V	Post6	0x	0m	2	0
V	Post6	1x	0m	1	1
V	Post6	1x	0m	2	0
V	Post6	2x	0m	1	0
V	Post6	2x	0m	2	2
H	Post4	0x	0m	1	9
H	Post4	0x	0m	2	6
H	Post4	1x	0m	1	11
H	Post4	1x	0m	2	7
H	Post4	2x	0m	1	4
H	Post4	2x	0m	2	22
H	Post5	0x	0m	1	12
H	Post5	0x	0m	2	11
H	Post5	1x	0m	1	25
H	Post5	1x	0m	2	17
H	Post5	2x	0m	1	19
H	Post5	2x	0m	2	15
H	Post6	0x	0m	1	2
H	Post6	0x	0m	2	13
H	Post6	1x	0m	1	19
H	Post6	1x	0m	2	19
H	Post6	2x	0m	1	16
H	Post6	2x	0m	2	14
H	Pre	0x	10m	1	6
H	Pre	0x	10m	2	19
H	Pre	1x	10m	1	3
H	Pre	1x	10m	2	6
H	Pre	2x	10m	1	7
H	Pre	2x	10m	2	7
V	Pre	0x	10m	1	4
V	Pre	0x	10m	2	10
V	Pre	1x	10m	1	10
V	Pre	1x	10m	2	3
V	Pre	2x	10m	1	9
V	Pre	2x	10m	2	5
H	Post1	0x	10m	1	1
H	Post1	0x	10m	2	3

**Appendix AA.4:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

H	Post1	1x	10m	1	2
H	Post1	1x	10m	2	4
H	Post1	2x	10m	1	4
H	Post1	2x	10m	2	10
V	Post1	0x	10m	1	0
V	Post1	0x	10m	2	0
V	Post1	1x	10m	1	4
V	Post1	1x	10m	2	0
V	Post1	2x	10m	1	0
V	Post1	2x	10m	2	1
H	Post2	0x	10m	1	19
H	Post2	0x	10m	2	3
H	Post2	1x	10m	1	4
H	Post2	1x	10m	2	0
H	Post2	2x	10m	1	6
H	Post2	2x	10m	2	17
H	Post3	0x	10m	1	5
H	Post3	0x	10m	2	4
H	Post3	1x	10m	1	0
H	Post3	1x	10m	2	2
H	Post3	2x	10m	1	8
H	Post3	2x	10m	2	9
V	Post2	0x	10m	1	3
V	Post2	0x	10m	2	2
V	Post2	1x	10m	1	1
V	Post2	1x	10m	2	1
V	Post2	2x	10m	1	2
V	Post2	2x	10m	2	0
S1	Pre	0x	10m	1	1
S1	Pre	0x	10m	2	2
S1	Pre	1x	10m	1	1
S1	Pre	1x	10m	2	1
S1	Pre	1x	10m	1	1
S1	Pre	1x	10m	2	0
S2	Pre	0x	10m	1	4
S2	Pre	0x	10m	2	2
S2	Pre	1x	10m	1	1
S2	Pre	1x	10m	2	2
V	Post3	0x	10m	1	2
V	Post3	0x	10m	2	4
V	Post3	1x	10m	1	0
V	Post3	1x	10m	2	1
V	Post3	2x	10m	1	0
V	Post3	2x	10m	2	3
S1	Post4	0x	10m	1	3
S1	Post4	0x	10m	2	0
S1	Post4	1x	10m	1	0

**Appendix AA.5:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

S1	Post4	1x	10m	2	0
S1	Post4	1x	10m	1	0
S1	Post4	1x	10m	2	3
S2	Post4	0x	10m	1	1
S2	Post4	0x	10m	2	2
S2	Post4	1x	10m	1	1
S2	Post4	1x	10m	2	1
S1	Post5	0x	10m	1	1
S1	Post5	0x	10m	2	1
S1	Post5	1x	10m	1	2
S1	Post5	1x	10m	2	1
S1	Post5	1x	10m	1	1
S1	Post5	1x	10m	2	1
S2	Post5	0x	10m	1	0
S2	Post5	0x	10m	2	5
S2	Post5	1x	10m	1	0
S2	Post5	1x	10m	2	1
V	Post4	0x	10m	1	.
V	Post4	0x	10m	2	.
V	Post4	1x	10m	1	1
V	Post4	1x	10m	2	2
V	Post4	2x	10m	1	.
V	Post4	2x	10m	2	.
S1	Post6	0x	10m	1	0
S1	Post6	0x	10m	2	0
S1	Post6	1x	10m	1	0
S1	Post6	1x	10m	2	1
S1	Post6	1x	10m	1	2
S1	Post6	1x	10m	2	0
S2	Post6	0x	10m	1	0
S2	Post6	0x	10m	2	0
S2	Post6	1x	10m	1	1
S2	Post6	1x	10m	2	2
V	Post5	0x	10m	1	1
V	Post5	0x	10m	2	0
V	Post5	1x	10m	1	1
V	Post5	1x	10m	2	2
V	Post5	2x	10m	1	0
V	Post5	2x	10m	2	0
V	Post6	0x	10m	1	0
V	Post6	0x	10m	2	0
V	Post6	1x	10m	1	1
V	Post6	1x	10m	2	1
V	Post6	2x	10m	1	0
V	Post6	2x	10m	2	0
H	Post4	0x	10m	1	.
H	Post4	0x	10m	2	4

**Appendix AA.6:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

H	Post4	1x	10m	1	4
H	Post4	1x	10m	2	2
H	Post4	2x	10m	1	3
H	Post4	2x	10m	2	12
H	Post5	0x	10m	1	5
H	Post5	0x	10m	2	0
H	Post5	1x	10m	1	0
H	Post5	1x	10m	2	5
H	Post5	2x	10m	1	25
H	Post5	2x	10m	2	14
H	Post6	0x	10m	1	7
H	Post6	0x	10m	2	8
H	Post6	1x	10m	1	2
H	Post6	1x	10m	2	5
H	Post6	2x	10m	1	14
H	Post6	2x	10m	2	15
H	Pre	0x	25m	1	7
H	Pre	0x	25m	2	4
H	Pre	1x	25m	1	7
H	Pre	1x	25m	2	2
H	Pre	2x	25m	1	3
H	Pre	2x	25m	2	4
V	Pre	0x	25m	1	3
V	Pre	0x	25m	2	1
V	Pre	1x	25m	1	9
V	Pre	1x	25m	2	14
V	Pre	2x	25m	1	5
V	Pre	2x	25m	2	11
H	Post1	0x	25m	1	2
H	Post1	0x	25m	2	2
H	Post1	1x	25m	1	6
H	Post1	1x	25m	2	1
H	Post1	2x	25m	1	10
H	Post1	2x	25m	1	4
V	Post1	0x	25m	1	0
V	Post1	0x	25m	2	0
V	Post1	1x	25m	1	0
V	Post1	1x	25m	2	1
V	Post1	2x	25m	1	1
V	Post1	2x	25m	2	4
H	Post2	0x	25m	1	5
H	Post2	0x	25m	2	6
H	Post2	1x	25m	1	4
H	Post2	1x	25m	2	6
H	Post2	2x	25m	1	2
H	Post2	2x	25m	2	3
H	Post3	0x	25m	1	9

**Appendix AA.7:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

H	Post3	0x	25m	2	0
H	Post3	1x	25m	1	6
H	Post3	1x	25m	2	0
H	Post3	2x	25m	1	1
H	Post3	2x	25m	2	4
V	Post2	0x	25m	1	0
V	Post2	0x	25m	2	2
V	Post2	1x	25m	1	2
V	Post2	1x	25m	2	0
V	Post2	2x	25m	1	3
V	Post2	2x	25m	2	1
S1	Pre	0x	25m	1	1
S1	Pre	0x	25m	2	0
S1	Pre	1x	25m	1	0
S1	Pre	1x	25m	2	1
S1	Pre	1x	25m	1	0
S1	Pre	1x	25m	2	0
S2	Pre	0x	25m	1	0
S2	Pre	0x	25m	2	0
S2	Pre	1x	25m	1	0
S2	Pre	1x	25m	2	1
V	Post3	0x	25m	1	1
V	Post3	0x	25m	2	0
V	Post3	1x	25m	1	0
V	Post3	1x	25m	2	0
V	Post3	2x	25m	1	1
V	Post3	2x	25m	2	2
S1	Post4	0x	25m	1	0
S1	Post4	0x	25m	2	0
S1	Post4	1x	25m	1	0
S1	Post4	1x	25m	2	0
S1	Post4	1x	25m	1	2
S1	Post4	1x	25m	2	1
S2	Post4	0x	25m	1	4
S2	Post4	0x	25m	2	1
S2	Post4	1x	25m	1	0
S2	Post4	1x	25m	2	3
S1	Post5	0x	25m	1	0
S1	Post5	0x	25m	2	0
S1	Post5	1x	25m	1	0
S1	Post5	1x	25m	2	1
S1	Post5	1x	25m	1	2
S1	Post5	1x	25m	2	0
S2	Post5	0x	25m	1	1
S2	Post5	0x	25m	2	4
S2	Post5	1x	25m	1	0
S2	Post5	1x	25m	2	0



**Appendix AA.8:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

V	Post4	0x	25m	1	.
V	Post4	0x	25m	2	0
V	Post4	1x	25m	1	4
V	Post4	1x	25m	2	0
V	Post4	2x	25m	1	2
V	Post4	2x	25m	2	1
S1	Post6	0x	25m	1	2
S1	Post6	0x	25m	2	0
S1	Post6	1x	25m	1	0
S1	Post6	1x	25m	2	0
S1	Post6	1x	25m	1	0
S1	Post6	1x	25m	2	1
S2	Post6	0x	25m	1	1
S2	Post6	0x	25m	2	0
S2	Post6	1x	25m	1	0
S2	Post6	1x	25m	2	0
V	Post5	0x	25m	1	1
V	Post5	0x	25m	2	1
V	Post5	1x	25m	1	0
V	Post5	1x	25m	2	0
V	Post5	2x	25m	1	0
V	Post5	2x	25m	2	0
V	Post6	0x	25m	1	0
V	Post6	0x	25m	2	0
V	Post6	1x	25m	1	1
V	Post6	1x	25m	2	0
V	Post6	2x	25m	1	0
V	Post6	2x	25m	2	0
H	Post4	0x	25m	1	5
H	Post4	0x	25m	2	5
H	Post4	1x	25m	1	2
H	Post4	1x	25m	2	0
H	Post4	2x	25m	1	6
H	Post4	2x	25m	2	14
H	Post5	0x	25m	1	2
H	Post5	0x	25m	2	0
H	Post5	1x	25m	1	1
H	Post5	1x	25m	2	2
H	Post5	2x	25m	1	6
H	Post5	2x	25m	2	21
H	Post6	0x	25m	1	2
H	Post6	0x	25m	2	6
H	Post6	1x	25m	1	3
H	Post6	1x	25m	2	.
H	Post6	2x	25m	1	7
H	Post6	2x	25m	2	6
H	Pre	0x	50m	1	8

**Appendix AA.9:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

H	Pre	0x	50m	2	6
H	Pre	1x	50m	1	4
H	Pre	1x	50m	2	5
H	Pre	2x	50m	1	1
H	Pre	2x	50m	2	4
V	Pre	0x	50m	1	2
V	Pre	0x	50m	2	0
V	Pre	1x	50m	1	4
V	Pre	1x	50m	2	4
V	Pre	2x	50m	1	11
V	Pre	2x	50m	2	4
H	Post1	0x	50m	1	3
H	Post1	0x	50m	2	5
H	Post1	1x	50m	1	10
H	Post1	1x	50m	2	5
H	Post1	2x	50m	1	8
H	Post1	2x	50m	2	4
V	Post1	0x	50m	1	1
V	Post1	0x	50m	2	0
V	Post1	1x	50m	1	0
V	Post1	1x	50m	2	0
V	Post1	2x	50m	1	1
V	Post1	2x	50m	2	2
H	Post2	0x	50m	1	7
H	Post2	0x	50m	2	3
H	Post2	1x	50m	1	1
H	Post2	1x	50m	2	3
H	Post2	2x	50m	1	3
H	Post2	2x	50m	2	2
H	Post3	0x	50m	1	2
H	Post3	0x	50m	2	3
H	Post3	1x	50m	1	3
H	Post3	1x	50m	2	4
H	Post3	2x	50m	1	4
H	Post3	2x	50m	2	7
V	Post2	0x	50m	1	1
V	Post2	0x	50m	2	1
V	Post2	1x	50m	1	1
V	Post2	1x	50m	2	1
V	Post2	2x	50m	1	1
V	Post2	2x	50m	2	0
S1	Pre	0x	50m	1	0
S1	Pre	0x	50m	2	0
S1	Pre	1x	50m	1	3
S1	Pre	1x	50m	2	2
S1	Pre	1x	50m	1	0
S1	Pre	1x	50m	2	0

**Appendix AA.10:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

S2	Pre	0x	50m	1	0
S2	Pre	0x	50m	2	0
S2	Pre	1x	50m	1	2
S2	Pre	1x	50m	2	5
V	Post3	0x	50m	1	1
V	Post3	0x	50m	2	1
V	Post3	1x	50m	1	0
V	Post3	1x	50m	2	1
V	Post3	2x	50m	1	1
V	Post3	2x	50m	2	0
S1	Post4	0x	50m	1	1
S1	Post4	0x	50m	2	0
S1	Post4	1x	50m	1	0
S1	Post4	1x	50m	2	0
S1	Post4	1x	50m	1	0
S1	Post4	1x	50m	2	0
S2	Post4	0x	50m	1	1
S2	Post4	0x	50m	2	0
S2	Post4	1x	50m	1	1
S2	Post4	1x	50m	2	1
S1	Post5	0x	50m	1	0
S1	Post5	0x	50m	2	0
S1	Post5	1x	50m	1	2
S1	Post5	1x	50m	2	0
S1	Post5	1x	50m	2	0
S2	Post5	0x	50m	1	0
S2	Post5	0x	50m	2	3
S2	Post5	1x	50m	1	1
S2	Post5	1x	50m	2	0
V	Post4	0x	50m	1	0
V	Post4	0x	50m	2	.
V	Post4	1x	50m	1	0
V	Post4	1x	50m	2	0
V	Post4	2x	50m	1	0
V	Post4	2x	50m	2	0
S1	Post6	0x	50m	1	1
S1	Post6	0x	50m	2	0
S1	Post6	1x	50m	1	2
S1	Post6	1x	50m	2	1
S1	Post6	1x	50m	1	1
S1	Post6	1x	50m	2	0
S2	Post6	0x	50m	1	0
S2	Post6	0x	50m	2	1
S2	Post6	1x	50m	1	2
S2	Post6	1x	50m	2	3
V	Post5	0x	50m	1	0
V	Post5	0x	50m	2	0

**Appendix AA.11:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

V	Post5	1x	50m	1	0
V	Post5	1x	50m	2	0
V	Post5	2x	50m	1	0
V	Post5	2x	50m	2	1
V	Post6	0x	50m	1	0
V	Post6	0x	50m	2	0
V	Post6	1x	50m	1	0
V	Post6	1x	50m	2	1
V	Post6	2x	50m	1	0
V	Post6	2x	50m	2	0
H	Post4	0x	50m	1	2
H	Post4	0x	50m	2	0
H	Post4	1x	50m	1	1
H	Post4	1x	50m	2	2
H	Post4	2x	50m	1	2
H	Post4	2x	50m	2	1
H	Post5	0x	50m	1	2
H	Post5	0x	50m	2	3
H	Post5	1x	50m	1	1
H	Post5	1x	50m	2	3
H	Post5	2x	50m	1	4
H	Post5	2x	50m	2	4
H	Post6	0x	50m	1	3
H	Post6	0x	50m	2	2
H	Post6	1x	50m	1	1
H	Post6	1x	50m	2	4
H	Post6	2x	50m	1	0
H	Post6	2x	50m	2	4
S1	Post5	1x	50m	1	0
H	Pre	0x	5m	1	10
H	Pre	0x	5m	2	4
H	Pre	1x	5m	1	3
H	Pre	1x	5m	2	2
H	Pre	2x	5m	1	2
H	Pre	2x	5m	2	5
V	Pre	0x	5m	1	8
V	Pre	0x	5m	2	4
V	Pre	1x	5m	1	5
V	Pre	1x	5m	2	7
V	Pre	2x	5m	1	4
V	Pre	2x	5m	2	0
H	Post1	0x	5m	1	3
H	Post1	0x	5m	2	7
H	Post1	1x	5m	1	6
H	Post1	1x	5m	2	0
H	Post1	2x	5m	1	4
H	Post1	2x	5m	2	9

**Appendix AA.12:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

V	Post1	0x	5m	1	.
V	Post1	0x	5m	2	.
V	Post1	1x	5m	1	1
V	Post1	1x	5m	2	2
V	Post1	2x	5m	1	1
V	Post1	2x	5m	2	0
H	Post2	0x	5m	1	8
H	Post2	0x	5m	2	8
H	Post2	1x	5m	1	2
H	Post2	1x	5m	2	0
H	Post2	2x	5m	1	1
H	Post2	2x	5m	2	4
H	Post3	0x	5m	1	7
H	Post3	0x	5m	2	12
H	Post3	1x	5m	1	3
H	Post3	1x	5m	2	5
H	Post3	2x	5m	1	15
H	Post3	2x	5m	2	3
V	Post2	0x	5m	1	1
V	Post2	0x	5m	2	3
V	Post2	1x	5m	1	2
V	Post2	1x	5m	2	0
V	Post2	2x	5m	1	0
V	Post2	2x	5m	2	2
S1	Pre	0x	5m	1	2
S1	Pre	0x	5m	2	1
S1	Pre	1x	5m	1	0
S1	Pre	1x	5m	2	0
S1	Pre	1x	5m	1	0
S1	Pre	1x	5m	2	2
S2	Pre	0x	5m	1	1
S2	Pre	0x	5m	2	2
S2	Pre	1x	5m	1	2
S2	Pre	1x	5m	2	6
V	Post3	0x	5m	1	3
V	Post3	0x	5m	2	5
V	Post3	1x	5m	1	1
V	Post3	1x	5m	2	1
V	Post3	2x	5m	1	0
V	Post3	2x	5m	2	1
S1	Post4	0x	5m	1	0
S1	Post4	0x	5m	2	1
S1	Post4	1x	5m	1	1
S1	Post4	1x	5m	2	2
S1	Post4	1x	5m	1	1
S1	Post4	1x	5m	2	0
S2	Post4	0x	5m	1	1

**Appendix AA.13:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

S2	Post4	0x	5m	2	1
S2	Post4	1x	5m	1	4
S2	Post4	1x	5m	2	4
S1	Post5	0x	5m	1	.
S1	Post5	0x	5m	2	1
S1	Post5	1x	5m	1	1
S1	Post5	1x	5m	2	1
S1	Post5	1x	5m	1	0
S1	Post5	1x	5m	2	4
S2	Post5	0x	5m	1	0
S2	Post5	0x	5m	2	0
S2	Post5	1x	5m	1	1
S2	Post5	1x	5m	2	0
V	Post4	0x	5m	1	.
V	Post4	0x	5m	2	.
V	Post4	1x	5m	1	.
V	Post4	1x	5m	2	1
V	Post4	2x	5m	1	.
V	Post4	2x	5m	2	.
S1	Post6	0x	5m	1	1
S1	Post6	0x	5m	2	1
S1	Post6	1x	5m	1	1
S1	Post6	1x	5m	2	1
S1	Post6	1x	5m	1	0
S1	Post6	1x	5m	2	3
S2	Post6	0x	5m	1	.
S2	Post6	0x	5m	2	2
S2	Post6	1x	5m	1	1
S2	Post6	1x	5m	2	0
V	Post5	0x	5m	1	0
V	Post5	0x	5m	2	0
V	Post5	1x	5m	1	1
V	Post5	1x	5m	2	0
V	Post5	2x	5m	1	0
V	Post5	2x	5m	2	0
V	Post6	0x	5m	1	0
V	Post6	0x	5m	2	0
V	Post6	1x	5m	1	0
V	Post6	1x	5m	2	0
V	Post6	2x	5m	1	0
V	Post6	2x	5m	2	0
H	Post4	0x	5m	1	7
H	Post4	0x	5m	2	12
H	Post4	1x	5m	1	2
H	Post4	1x	5m	2	3
H	Post4	2x	5m	1	10
H	Post4	2x	5m	2	5

**Appendix AA.14:** Beneficial arthropod abundance values collected in 2014 from crop fields with pitfall traps and SAS 9.2 code used.

H	Post5	0x	5m	1	14
H	Post5	0x	5m	2	10
H	Post5	1x	5m	1	2
H	Post5	1x	5m	2	0
H	Post5	2x	5m	1	13
H	Post5	2x	5m	2	11
H	Post6	0x	5m	1	1
H	Post6	0x	5m	2	8
H	Post6	1x	5m	1	6
H	Post6	1x	5m	2	6
H	Post6	2x	5m	1	14
H	Post6	2x	5m	2	11

;

```
proc sort data=NE;
```

```
by site timing treatment distance;
```

```
run;
```

```
proc means data=NE;
```

```
by site timing treatment distance;
```

```
var NE;
```

```
output out=mean_NE mean=mean_NE;
```

```
run;
```

```
proc mixed data=mean_NE;
```

```
class site timing distance treatment;
```

```
model mean_NE=site timing treatment distance timing*treatment*distance / ddfm = satterth;
```

```
slice timing*treatment*distance / sliceby = timing*distance diff lines;
```

```
run;
```

**Appendix AB:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

data NE;

input year \$ site \$ timing \$ treatment \$ distance \$ trap \$ NE;

cards;

2013	H	Pre	0x	0m	1	6
2013	H	Pre	0x	0m	2	1
2013	H	Pre	1x	0m	1	5
2013	H	Pre	1x	0m	2	1
2013	H	Pre	2x	0m	1	4
2013	H	Pre	2x	0m	2	4
2013	H	Post1	0x	0m	1	6
2013	H	Post1	0x	0m	2	1
2013	H	Post1	1x	0m	1	7
2013	H	Post1	1x	0m	2	5
2013	H	Post1	2x	0m	1	9
2013	H	Post1	2x	0m	2	12
2013	V	Pre	0x	0m	1	7
2013	V	Pre	0x	0m	2	16
2013	V	Pre	1x	0m	1	4
2013	V	Pre	1x	0m	2	4
2013	V	Pre	2x	0m	1	23
2013	V	Pre	2x	0m	2	17
2013	H	Post2	0x	0m	1	2
2013	H	Post2	0x	0m	2	2
2013	H	Post2	1x	0m	1	2
2013	H	Post2	1x	0m	2	4
2013	H	Post2	2x	0m	1	1
2013	H	Post2	2x	0m	2	5
2013	H	Post3	0x	0m	1	1
2013	H	Post3	0x	0m	2	4
2013	H	Post3	1x	0m	1	2
2013	H	Post3	1x	0m	2	1
2013	H	Post3	2x	0m	1	6
2013	H	Post3	2x	0m	2	10
2013	V	Post1	0x	0m	1	13
2013	V	Post1	0x	0m	2	5
2013	V	Post1	1x	0m	1	0
2013	V	Post1	1x	0m	2	2
2013	V	Post1	2x	0m	1	13
2013	V	Post1	2x	0m	2	14
2013	V	Post2	0x	0m	1	1
2013	V	Post2	0x	0m	2	4
2013	V	Post2	1x	0m	1	4
2013	V	Post2	1x	0m	2	2
2013	V	Post2	2x	0m	1	5
2013	V	Post2	2x	0m	2	10
2013	S1	Pre	0x	0m	1	14
2013	S1	Pre	0x	0m	1	10



**Appendix AB.2:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	S1	Pre	1x	0m	1	2
2013	S1	Pre	1x	0m	2	4
2013	S1	Pre	2x	0m	1	3
2013	S1	Pre	2x	0m	2	3
2013	S2	Pre	0x	0m	1	2
2013	S2	Pre	0x	0m	2	4
2013	S2	Pre	1x	0m	1	8
2013	S2	Pre	1x	0m	2	11
2013	S2	Pre	2x	0m	1	1
2013	S2	Pre	2x	0m	2	4
2013	V	Post3	0x	0m	1	7
2013	V	Post3	0x	0m	2	5
2013	V	Post3	1x	0m	1	4
2013	V	Post3	1x	0m	2	0
2013	V	Post3	2x	0m	1	6
2013	V	Post3	2x	0m	2	19
2013	S1	Post4	0x	0m	1	2
2013	S1	Post4	0x	0m	2	3
2013	S1	Post4	1x	0m	1	5
2013	S1	Post4	1x	0m	2	6
2013	S1	Post4	2x	0m	1	2
2013	S1	Post4	2x	0m	2	3
2013	S2	Post4	0x	0m	1	5
2013	S2	Post4	0x	0m	2	3
2013	S2	Post4	2x	0m	1	1
2013	S2	Post4	2x	0m	2	0
2013	S1	Post5	0x	0m	1	2
2013	S1	Post5	0x	0m	2	7
2013	S1	Post5	1x	0m	1	5
2013	S1	Post5	1x	0m	2	0
2013	S1	Post5	2x	0m	1	4
2013	S1	Post5	2x	0m	2	1
2013	S2	Post5	0x	0m	1	3
2013	S2	Post5	0x	0m	2	6
2013	S2	Post5	2x	0m	1	3
2013	S2	Post5	2x	0m	2	1
2013	S1	Post6	0x	0m	1	2
2013	S1	Post6	0x	0m	2	.
2013	S1	Post6	1x	0m	1	2
2013	S1	Post6	1x	0m	2	4
2013	S1	Post6	2x	0m	1	3
2013	S1	Post6	2x	0m	2	0
2013	S2	Post6	0x	0m	1	0
2013	S2	Post6	0x	0m	2	5
2013	S2	Post4	1x	0m	1	0
2013	S2	Post4	1x	0m	2	3
2013	S2	Post6	2x	0m	1	3

**Appendix AB.3:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	S2	Post6	2x	0m	2	2
2013	S2	Post5	1x	0m	1	0
2013	S2	Post5	1x	0m	2	0
2013	S2	Post6	1x	0m	1	1
2013	S2	Post6	1x	0m	2	3
2013	V	Post4	0x	0m	1	0
2013	V	Post4	0x	0m	2	1
2013	V	Post4	1x	0m	1	0
2013	V	Post4	1x	0m	2	0
2013	V	Post4	2x	0m	1	3
2013	V	Post4	2x	0m	2	3
2013	V	Post5	0x	0m	1	5
2013	V	Post5	0x	0m	2	3
2013	V	Post5	1x	0m	1	3
2013	V	Post5	1x	0m	2	3
2013	V	Post5	2x	0m	1	2
2013	V	Post5	2x	0m	2	3
2013	V	Post6	0x	0m	1	2
2013	V	Post6	0x	0m	2	0
2013	V	Post6	1x	0m	1	8
2013	V	Post6	1x	0m	2	0
2013	V	Post6	2x	0m	1	3
2013	V	Post6	2x	0m	2	11
2013	H	Post4	0x	0m	1	0
2013	H	Post4	0x	0m	2	2
2013	H	Post4	1x	0m	1	4
2013	H	Post4	1x	0m	2	16
2013	H	Post4	2x	0m	1	21
2013	H	Post4	2x	0m	2	11
2013	H	Post5	0x	0m	1	.
2013	H	Post5	0x	0m	2	3
2013	H	Post5	1x	0m	1	7
2013	H	Post5	1x	0m	2	10
2013	H	Post5	2x	0m	1	21
2013	H	Post5	2x	0m	2	9
2013	H	Post6	0x	0m	1	11
2013	H	Post6	0x	0m	2	3
2013	H	Post6	1x	0m	1	13
2013	H	Post6	1x	0m	2	4
2013	H	Post6	2x	0m	1	19
2013	H	Post6	2x	0m	2	24
2013	H	Pre	0x	10m	1	0
2013	H	Pre	0x	10m	2	2
2013	H	Pre	1x	10m	1	0
2013	H	Pre	1x	10m	2	1
2013	H	Pre	2x	10m	1	0
2013	H	Pre	2x	10m	2	0

**Appendix AB.4:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	H	Post1	0x	10m	1	1
2013	H	Post1	0x	10m	2	1
2013	H	Post1	1x	10m	1	5
2013	H	Post1	1x	10m	2	4
2013	H	Post1	2x	10m	1	6
2013	H	Post1	2x	10m	2	2
2013	V	Pre	0x	10m	1	7
2013	V	Pre	0x	10m	2	7
2013	V	Pre	1x	10m	1	2
2013	V	Pre	1x	10m	2	1
2013	V	Pre	2x	10m	1	3
2013	V	Pre	2x	10m	2	1
2013	H	Post2	0x	10m	1	0
2013	H	Post2	0x	10m	2	1
2013	H	Post2	1x	10m	1	0
2013	H	Post2	1x	10m	2	0
2013	H	Post2	2x	10m	1	1
2013	H	Post2	2x	10m	2	1
2013	H	Post3	0x	10m	1	2
2013	H	Post3	0x	10m	2	0
2013	H	Post3	1x	10m	1	1
2013	H	Post3	1x	10m	2	0
2013	H	Post3	2x	10m	1	0
2013	H	Post3	2x	10m	2	3
2013	V	Post1	0x	10m	1	2
2013	V	Post1	0x	10m	2	1
2013	V	Post1	1x	10m	1	2
2013	V	Post1	1x	10m	2	0
2013	V	Post1	2x	10m	1	3
2013	V	Post1	2x	10m	2	0
2013	V	Post2	0x	10m	1	.
2013	V	Post2	0x	10m	2	1
2013	V	Post2	1x	10m	1	2
2013	V	Post2	1x	10m	2	6
2013	V	Post2	2x	10m	1	.
2013	V	Post2	2x	10m	2	.
2013	S1	Pre	0x	10m	1	4
2013	S1	Pre	0x	10m	2	5
2013	S1	Pre	1x	10m	1	4
2013	S1	Pre	1x	10m	2	1
2013	S1	Pre	2x	10m	1	1
2013	S1	Pre	2x	10m	2	1
2013	S2	Pre	0x	10m	1	5
2013	S2	Pre	0x	10m	2	1
2013	S2	Pre	1x	10m	1	0
2013	S2	Pre	1x	10m	2	22
2013	S2	Pre	2x	10m	1	1

**Appendix AB.5:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	S2	Pre	2x	10m	2	0
2013	V	Post3	0x	10m	1	6
2013	V	Post3	0x	10m	2	.
2013	V	Post3	1x	10m	1	0
2013	V	Post3	1x	10m	2	7
2013	V	Post3	2x	10m	1	0
2013	V	Post3	2x	10m	2	0
2013	S1	Post4	0x	10m	1	3
2013	S1	Post4	0x	10m	2	5
2013	S1	Post4	1x	10m	1	0
2013	S1	Post4	1x	10m	2	1
2013	S1	Post4	2x	10m	1	2
2013	S1	Post4	2x	10m	2	2
2013	S2	Post4	0x	10m	1	0
2013	S2	Post4	0x	10m	2	6
2013	S2	Post4	2x	10m	1	2
2013	S2	Post4	2x	10m	2	5
2013	S1	Post5	0x	10m	1	0
2013	S1	Post5	0x	10m	2	0
2013	S1	Post5	1x	10m	1	1
2013	S1	Post5	1x	10m	2	1
2013	S1	Post5	2x	10m	1	2
2013	S1	Post5	2x	10m	2	0
2013	S2	Post5	0x	10m	1	4
2013	S2	Post5	0x	10m	2	0
2013	S2	Post5	2x	10m	1	0
2013	S2	Post5	2x	10m	2	3
2013	S1	Post6	0x	10m	1	2
2013	S1	Post6	0x	10m	1	2
2013	S1	Post6	1x	10m	1	2
2013	S1	Post6	1x	10m	2	1
2013	S1	Post6	2x	10m	1	0
2013	S1	Post6	2x	10m	2	1
2013	S2	Post6	0x	10m	1	4
2013	S2	Post6	0x	10m	2	1
2013	S2	Post4	1x	10m	1	1
2013	S2	Post4	1x	10m	2	2
2013	S2	Post6	2x	10m	1	0
2013	S2	Post6	2x	10m	2	0
2013	S2	Post5	1x	10m	1	2
2013	S2	Post5	1x	10m	2	2
2013	S2	Post6	1x	10m	1	1
2013	S2	Post6	1x	10m	2	0
2013	V	Post4	0x	10m	1	.
2013	V	Post4	0x	10m	2	.
2013	V	Post4	1x	10m	1	0
2013	V	Post4	1x	10m	2	1

**Appendix AB.6:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	V	Post4	2x	10m	1	.
2013	V	Post4	2x	10m	2	.
2013	V	Post5	0x	10m	1	.
2013	V	Post5	0x	10m	2	0
2013	V	Post5	1x	10m	1	2
2013	V	Post5	1x	10m	2	2
2013	V	Post5	2x	10m	1	1
2013	V	Post5	2x	10m	2	0
2013	V	Post6	0x	10m	1	.
2013	V	Post6	0x	10m	2	.
2013	V	Post6	1x	10m	1	4
2013	V	Post6	1x	10m	2	0
2013	V	Post6	2x	10m	1	0
2013	V	Post6	2x	10m	2	1
2013	H	Post4	0x	10m	1	1
2013	H	Post4	0x	10m	2	9
2013	H	Post4	1x	10m	1	6
2013	H	Post4	1x	10m	2	6
2013	H	Post4	2x	10m	1	16
2013	H	Post4	2x	10m	2	17
2013	H	Post5	0x	10m	1	22
2013	H	Post5	0x	10m	2	44
2013	H	Post5	1x	10m	1	1
2013	H	Post5	1x	10m	2	5
2013	H	Post5	2x	10m	1	30
2013	H	Post5	2x	10m	2	14
2013	H	Post6	0x	10m	1	21
2013	H	Post6	0x	10m	2	28
2013	H	Post6	1x	10m	1	3
2013	H	Post6	1x	10m	2	1
2013	H	Post6	2x	10m	1	44
2013	H	Post6	2x	10m	2	38
2013	H	Pre	0x	25m	1	1
2013	H	Pre	0x	25m	2	0
2013	H	Pre	1x	25m	1	2
2013	H	Pre	1x	25m	2	0
2013	H	Pre	2x	25m	1	3
2013	H	Pre	2x	25m	2	2
2013	H	Post1	0x	25m	1	2
2013	H	Post1	0x	25m	2	0
2013	H	Post1	1x	25m	1	6
2013	H	Post1	1x	25m	2	4
2013	H	Post1	2x	25m	1	0
2013	H	Post1	2x	25m	2	3
2013	V	Pre	0x	25m	1	4
2013	V	Pre	0x	25m	2	7
2013	V	Pre	1x	25m	1	4

**Appendix AB.7:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	V	Pre	1x	25m	2	0
2013	V	Pre	2x	25m	1	7
2013	V	Pre	2x	25m	2	25
2013	H	Post2	0x	25m	1	2
2013	H	Post2	0x	25m	2	2
2013	H	Post2	1x	25m	1	3
2013	H	Post2	1x	25m	2	4
2013	H	Post2	2x	25m	1	1
2013	H	Post2	2x	25m	2	3
2013	H	Post3	0x	25m	1	25
2013	H	Post3	0x	25m	2	2
2013	H	Post3	1x	25m	1	0
2013	H	Post3	1x	25m	2	1
2013	H	Post3	2x	25m	1	0
2013	H	Post3	2x	25m	2	0
2013	V	Post1	0x	25m	1	5
2013	V	Post1	0x	25m	2	3
2013	V	Post1	1x	25m	1	1
2013	V	Post1	1x	25m	2	1
2013	V	Post1	2x	25m	1	3
2013	V	Post1	2x	25m	2	0
2013	V	Post2	0x	25m	1	2
2013	V	Post2	0x	25m	2	0
2013	V	Post2	1x	25m	1	2
2013	V	Post2	1x	25m	2	3
2013	V	Post2	2x	25m	1	.
2013	V	Post2	2x	25m	2	1
2013	S1	Pre	0x	25m	1	1
2013	S1	Pre	0x	25m	2	0
2013	S1	Pre	1x	25m	1	0
2013	S1	Pre	1x	25m	2	4
2013	S1	Pre	2x	25m	2	2
2013	S2	Pre	0x	25m	1	3
2013	S2	Pre	0x	25m	2	2
2013	S2	Pre	1x	25m	1	7
2013	S2	Pre	1x	25m	2	1
2013	S2	Pre	2x	25m	1	4
2013	S2	Pre	2x	25m	2	2
2013	V	Post3	0x	25m	1	0
2013	V	Post3	0x	25m	2	3
2013	V	Post3	1x	25m	1	4
2013	V	Post3	1x	25m	2	0
2013	V	Post3	2x	25m	1	1
2013	V	Post3	2x	25m	2	0
2013	S1	Post4	0x	25m	1	0
2013	S1	Post4	0x	25m	2	1
2013	S1	Post4	1x	25m	1	0

**Appendix AB.8:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	S1	Post4	1x	25m	2	1
2013	S1	Post4	2x	25m	1	3
2013	S1	Post4	2x	25m	2	2
2013	S2	Post4	0x	25m	1	0
2013	S2	Post4	0x	25m	2	3
2013	S2	Post4	2x	25m	1	0
2013	S2	Post4	2x	25m	2	2
2013	S1	Post5	0x	25m	1	1
2013	S1	Post5	0x	25m	2	0
2013	S1	Post5	1x	25m	1	2
2013	S1	Post5	1x	25m	2	0
2013	S1	Post5	2x	25m	1	2
2013	S1	Post5	2x	25m	2	0
2013	S2	Post5	0x	25m	1	1
2013	S2	Post5	0x	25m	2	2
2013	S2	Post5	2x	25m	1	2
2013	S2	Post5	2x	25m	2	1
2013	S1	Post6	0x	25m	1	.
2013	S1	Post6	0x	25m	2	0
2013	S1	Post6	1x	25m	1	.
2013	S1	Post6	1x	25m	2	.
2013	S1	Post6	2x	25m	1	2
2013	S1	Post6	2x	25m	2	0
2013	S2	Post6	0x	25m	1	1
2013	S2	Post6	0x	25m	2	0
2013	S2	Post4	1x	25m	1	2
2013	S2	Post4	1x	25m	2	3
2013	S2	Post6	2x	25m	1	1
2013	S2	Post6	2x	25m	2	0
2013	S2	Post5	1x	25m	1	0
2013	S2	Post5	1x	25m	2	1
2013	S2	Post6	1x	25m	1	2
2013	S2	Post6	1x	25m	2	1
2013	V	Post4	0x	25m	1	.
2013	V	Post4	0x	25m	2	.
2013	V	Post4	1x	25m	1	.
2013	V	Post4	1x	25m	2	.
2013	V	Post4	2x	25m	1	.
2013	V	Post4	2x	25m	2	.
2013	V	Post5	0x	25m	1	.
2013	V	Post5	0x	25m	2	0
2013	V	Post5	1x	25m	1	1
2013	V	Post5	1x	25m	2	1
2013	V	Post5	2x	25m	1	.
2013	V	Post5	2x	25m	2	.
2013	V	Post6	0x	25m	1	0
2013	V	Post6	0x	25m	2	0

**Appendix AB.9:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	V	Post6	1x	25m	1	2
2013	V	Post6	1x	25m	2	1
2013	V	Post6	2x	25m	1	.
2013	V	Post6	2x	25m	2	.
2013	H	Post4	0x	25m	1	0
2013	H	Post4	0x	25m	2	1
2013	H	Post4	1x	25m	1	1
2013	H	Post4	1x	25m	2	1
2013	H	Post4	2x	25m	1	43
2013	H	Post4	2x	25m	2	2
2013	H	Post5	0x	25m	1	31
2013	H	Post5	0x	25m	2	21
2013	H	Post5	1x	25m	1	0
2013	H	Post5	1x	25m	2	0
2013	H	Post5	2x	25m	1	3
2013	H	Post5	2x	25m	2	36
2013	H	Post6	0x	25m	1	10
2013	H	Post6	0x	25m	2	16
2013	H	Post6	1x	25m	1	5
2013	H	Post6	1x	25m	2	3
2013	H	Post6	2x	25m	1	9
2013	H	Post6	2x	25m	2	26
2013	S1	Pre	2x	25m	1	1
2013	H	Pre	0x	50m	1	4
2013	H	Pre	0x	50m	2	1
2013	H	Pre	1x	50m	1	21
2013	H	Pre	1x	50m	2	2
2013	H	Pre	2x	50m	1	3
2013	H	Pre	2x	50m	2	2
2013	H	Post1	0x	50m	1	1
2013	H	Post1	0x	50m	2	16
2013	H	Post1	1x	50m	1	14
2013	H	Post1	1x	50m	2	8
2013	H	Post1	2x	50m	1	2
2013	H	Post1	2x	50m	2	1
2013	V	Pre	0x	50m	1	2
2013	V	Pre	0x	50m	2	5
2013	V	Pre	1x	50m	1	2
2013	V	Pre	1x	50m	2	2
2013	V	Pre	2x	50m	1	8
2013	V	Pre	2x	50m	2	2
2013	H	Post2	0x	50m	1	3
2013	H	Post2	0x	50m	2	2
2013	H	Post2	1x	50m	1	2
2013	H	Post2	1x	50m	2	1
2013	H	Post2	2x	50m	1	0
2013	H	Post2	2x	50m	2	0



**Appendix AB.10:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	H	Post3	0x	50m	1	0
2013	H	Post3	0x	50m	2	1
2013	H	Post3	1x	50m	1	0
2013	H	Post3	1x	50m	2	0
2013	H	Post3	2x	50m	1	0
2013	H	Post3	2x	50m	2	0
2013	V	Post1	0x	50m	1	3
2013	V	Post1	0x	50m	2	0
2013	V	Post1	1x	50m	1	2
2013	V	Post1	1x	50m	2	1
2013	V	Post1	2x	50m	1	1
2013	V	Post1	2x	50m	2	0
2013	V	Post2	0x	50m	1	.
2013	V	Post2	0x	50m	2	1
2013	V	Post2	1x	50m	1	.
2013	V	Post2	1x	50m	2	0
2013	V	Post2	2x	50m	1	1
2013	V	Post2	2x	50m	2	1
2013	S1	Pre	0x	50m	1	1
2013	S1	Pre	0x	50m	2	1
2013	S1	Pre	1x	50m	1	8
2013	S1	Pre	1x	50m	2	3
2013	S1	Pre	2x	50m	1	0
2013	S1	Pre	2x	50m	2	1
2013	S2	Pre	0x	50m	1	1
2013	S2	Pre	0x	50m	2	3
2013	S2	Pre	1x	50m	1	0
2013	S2	Pre	1x	50m	2	3
2013	S2	Pre	2x	50m	1	5
2013	S2	Pre	2x	50m	2	2
2013	V	Post3	0x	50m	1	.
2013	V	Post3	0x	50m	2	.
2013	V	Post3	1x	50m	1	0
2013	V	Post3	1x	50m	2	1
2013	V	Post3	2x	50m	1	0
2013	V	Post3	2x	50m	2	3
2013	S1	Post4	0x	50m	1	2
2013	S1	Post4	0x	50m	2	2
2013	S1	Post4	1x	50m	1	3
2013	S1	Post4	1x	50m	2	8
2013	S1	Post4	2x	50m	1	4
2013	S1	Post4	2x	50m	2	0
2013	S2	Post4	0x	50m	1	2
2013	S2	Post4	0x	50m	1	0
2013	S2	Post4	2x	50m	1	2
2013	S2	Post4	2x	50m	2	3
2013	S1	Post6	0x	50m	1	0

**Appendix AB.11:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	S1	Post6	0x	50m	2	1
2013	S1	Post6	1x	50m	1	1
2013	S1	Post6	1x	50m	2	2
2013	S1	Post6	2x	50m	1	0
2013	S1	Post6	2x	50m	2	0
2013	S2	Post6	0x	50m	1	1
2013	S2	Post6	0x	50m	2	0
2013	S2	Post4	1x	50m	1	2
2013	S2	Post4	1x	50m	2	3
2013	S2	Post6	2x	50m	1	0
2013	S2	Post6	2x	50m	2	1
2013	V	Post6	2x	50m	2	2
2013	H	Post4	0x	50m	1	2
2013	H	Post4	0x	50m	2	0
2013	H	Post4	1x	50m	1	0
2013	H	Post4	1x	50m	2	0
2013	H	Post4	2x	50m	1	13
2013	H	Post4	2x	50m	2	1
2013	H	Post5	0x	50m	1	1
2013	H	Post5	0x	50m	2	9
2013	H	Post5	1x	50m	1	0
2013	H	Post5	1x	50m	2	0
2013	H	Post5	2x	50m	1	0
2013	H	Post5	2x	50m	2	7
2013	H	Post6	0x	50m	1	20
2013	H	Post6	0x	50m	2	3
2013	H	Post6	1x	50m	1	2
2013	H	Post6	1x	50m	2	0
2013	H	Post6	2x	50m	1	11
2013	H	Post6	2x	50m	2	15
2013	S1	Post5	0x	50m	1	2
2013	S1	Post5	0x	50m	2	2
2013	S1	Post5	1x	50m	1	1
2013	S1	Post5	1x	50m	2	3
2013	S1	Post5	2x	50m	1	0
2013	S1	Post5	2x	50m	2	0
2013	S2	Post5	0x	50m	1	1
2013	S2	Post5	0x	50m	2	1
2013	S2	Post5	2x	50m	1	1
2013	S2	Post5	2x	50m	2	0
2013	S2	Post5	1x	50m	1	0
2013	S2	Post5	1x	50m	2	1
2013	S2	Post6	1x	50m	1	3
2013	S2	Post6	1x	50m	2	1
2013	V	Post4	0x	50m	1	.
2013	V	Post4	0x	50m	2	.
2013	V	Post4	1x	50m	1	.

**Appendix AB.12:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	V	Post4	1x	50m	2	.
2013	V	Post4	2x	50m	1	.
2013	V	Post4	2x	50m	2	.
2013	V	Post5	0x	50m	1	.
2013	V	Post5	0x	50m	2	0
2013	V	Post5	1x	50m	1	.
2013	V	Post5	1x	50m	2	0
2013	V	Post5	2x	50m	1	0
2013	V	Post5	2x	50m	2	1
2013	V	Post6	0x	50m	1	.
2013	V	Post6	0x	50m	2	0
2013	V	Post6	1x	50m	1	.
2013	V	Post6	1x	50m	2	.
2013	V	Post6	2x	50m	1	0
2013	H	Pre	0x	5m	1	1
2013	H	Pre	0x	5m	2	4
2013	H	Pre	1x	5m	1	4
2013	H	Pre	1x	5m	2	2
2013	H	Pre	2x	5m	1	3
2013	H	Pre	2x	5m	2	2
2013	H	Post1	0x	5m	1	0
2013	H	Post1	0x	5m	2	1
2013	H	Post1	1x	5m	1	6
2013	H	Post1	1x	5m	2	0
2013	H	Post1	2x	5m	1	1
2013	H	Post1	2x	5m	2	1
2013	V	Pre	0x	5m	1	6
2013	V	Pre	0x	5m	2	4
2013	V	Pre	1x	5m	1	1
2013	V	Pre	1x	5m	2	1
2013	V	Pre	2x	5m	1	6
2013	V	Pre	2x	5m	2	5
2013	H	Post2	0x	5m	1	0
2013	H	Post2	0x	5m	1	1
2013	H	Post2	1x	5m	1	0
2013	H	Post2	1x	5m	2	0
2013	H	Post2	2x	5m	1	1
2013	H	Post2	2x	5m	2	0
2013	H	Post3	0x	5m	1	4
2013	H	Post3	0x	5m	2	1
2013	H	Post3	1x	5m	1	3
2013	H	Post3	1x	5m	2	0
2013	H	Post3	2x	5m	1	1
2013	H	Post3	2x	5m	2	0
2013	V	Post1	0x	5m	1	5
2013	V	Post1	0x	5m	2	0
2013	V	Post1	1x	5m	1	0

**Appendix AB.13:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	V	Post1	1x	5m	2	2
2013	V	Post1	2x	5m	1	3
2013	V	Post1	2x	5m	2	1
2013	V	Post2	0x	5m	1	4
2013	V	Post2	0x	5m	2	3
2013	V	Post2	1x	5m	1	.
2013	V	Post2	1x	5m	2	0
2013	V	Post2	2x	5m	1	2
2013	V	Post2	2x	5m	2	0
2013	S1	Pre	0x	5m	1	2
2013	S1	Pre	0x	5m	2	7
2013	S1	Pre	1x	5m	1	1
2013	S1	Pre	1x	5m	2	1
2013	S1	Pre	2x	5m	1	0
2013	S1	Pre	2x	5m	2	1
2013	S2	Pre	0x	5m	1	3
2013	S2	Pre	0x	5m	2	1
2013	S2	Pre	1x	5m	1	7
2013	S2	Pre	1x	5m	2	6
2013	S2	Pre	2x	5m	1	2
2013	S2	Pre	2x	5m	2	3
2013	V	Post3	0x	5m	1	3
2013	V	Post3	0x	5m	2	0
2013	V	Post3	1x	5m	1	8
2013	V	Post3	1x	5m	2	0
2013	V	Post3	2x	5m	1	1
2013	V	Post3	2x	5m	2	2
2013	S1	Post4	0x	5m	1	3
2013	S1	Post4	0x	5m	2	0
2013	S1	Post4	1x	5m	1	1
2013	S1	Post4	1x	5m	2	8
2013	S1	Post4	2x	5m	1	1
2013	S1	Post4	2x	5m	2	0
2013	S2	Post4	0x	5m	1	1
2013	S2	Post4	0x	5m	2	1
2013	S2	Post4	2x	5m	1	2
2013	S2	Post4	2x	5m	2	4
2013	S1	Post5	0x	5m	1	2
2013	S1	Post5	0x	5m	2	0
2013	S1	Post5	1x	5m	1	1
2013	S1	Post5	1x	5m	2	2
2013	S1	Post5	2x	5m	1	0
2013	S1	Post5	2x	5m	2	0
2013	S2	Post5	0x	5m	1	0
2013	S2	Post5	0x	5m	2	3
2013	S2	Post5	2x	5m	1	0
2013	S2	Post5	2x	5m	2	0

**Appendix AB.14:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	S1	Post6	0x	5m	1	.
2013	S1	Post6	0x	5m	2	.
2013	S1	Post6	1x	5m	1	0
2013	S1	Post6	1x	5m	2	1
2013	S1	Post6	2x	5m	1	.
2013	S1	Post6	2x	5m	2	1
2013	S2	Post6	0x	5m	1	1
2013	S2	Post6	0x	5m	2	0
2013	S2	Post4	1x	5m	1	3
2013	S2	Post4	1x	5m	2	4
2013	S2	Post6	2x	5m	1	1
2013	S2	Post6	2x	5m	2	2
2013	S2	Post5	1x	5m	1	1
2013	S2	Post5	1x	5m	2	1
2013	S2	Post6	1x	5m	1	0
2013	S2	Post6	1x	5m	2	2
2013	V	Post4	0x	5m	1	.
2013	V	Post4	0x	5m	2	.
2013	V	Post4	1x	5m	1	2
2013	V	Post4	1x	5m	2	1
2013	V	Post4	2x	5m	1	0
2013	V	Post4	2x	5m	2	0
2013	V	Post5	0x	5m	1	0
2013	V	Post5	0x	5m	2	1
2013	V	Post5	1x	5m	1	0
2013	V	Post5	1x	5m	2	1
2013	V	Post5	2x	5m	1	0
2013	V	Post5	2x	5m	2	0
2013	V	Post6	0x	5m	1	0
2013	V	Post6	0x	5m	2	0
2013	V	Post6	1x	5m	1	.
2013	V	Post6	1x	5m	2	.
2013	V	Post6	2x	5m	1	1
2013	V	Post6	2x	5m	2	2
2013	H	Post4	0x	5m	1	4
2013	H	Post4	0x	5m	2	20
2013	H	Post4	1x	5m	1	2
2013	H	Post4	1x	5m	2	5
2013	H	Post4	2x	5m	1	52
2013	H	Post4	2x	5m	2	31
2013	H	Post5	0x	5m	1	18
2013	H	Post5	0x	5m	2	25
2013	H	Post5	1x	5m	1	13
2013	H	Post5	1x	5m	2	2
2013	H	Post5	2x	5m	1	32
2013	H	Post5	2x	5m	2	44
2013	H	Post6	0x	5m	1	38

**Appendix AB.15:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2013	H	Post6	0x	5m	2	28
2013	H	Post6	1x	5m	1	11
2013	H	Post6	1x	5m	2	11
2013	H	Post6	2x	5m	1	34
2013	H	Post6	2x	5m	2	48
2014	H	Pre	0x	0m	1	11
2014	H	Pre	0x	0m	2	9
2014	H	Pre	1x	0m	1	15
2014	H	Pre	1x	0m	2	11
2014	H	Pre	2x	0m	1	3
2014	H	Pre	2x	0m	2	8
2014	V	Pre	0x	0m	1	2
2014	V	Pre	0x	0m	2	5
2014	V	Pre	1x	0m	1	6
2014	V	Pre	1x	0m	2	11
2014	V	Pre	2x	0m	1	27
2014	V	Pre	2x	0m	2	20
2014	H	Post1	0x	0m	1	4
2014	H	Post1	0x	0m	2	14
2014	H	Post1	1x	0m	1	6
2014	H	Post1	1x	0m	2	7
2014	H	Post1	2x	0m	1	8
2014	H	Post1	2x	0m	2	14
2014	V	Post1	0x	0m	1	1
2014	V	Post1	0x	0m	2	2
2014	V	Post1	1x	0m	1	7
2014	V	Post1	1x	0m	2	0
2014	V	Post1	2x	0m	1	8
2014	V	Post1	2x	0m	2	14
2014	H	Post2	0x	0m	1	13
2014	H	Post2	0x	0m	2	8
2014	H	Post2	1x	0m	1	6
2014	H	Post2	1x	0m	2	6
2014	H	Post2	2x	0m	1	3
2014	H	Post2	2x	0m	2	4
2014	H	Post3	0x	0m	1	11
2014	H	Post3	0x	0m	2	3
2014	H	Post3	1x	0m	1	2
2014	H	Post3	1x	0m	2	9
2014	H	Post3	2x	0m	1	5
2014	H	Post3	2x	0m	2	8
2014	V	Post2	0x	0m	1	11
2014	V	Post2	0x	0m	2	0
2014	V	Post2	1x	0m	1	1
2014	V	Post2	1x	0m	2	2
2014	V	Post2	2x	0m	1	5
2014	V	Post2	2x	0m	2	4

**Appendix AB.16:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	S1	Pre	0x	0m	1	19
2014	S1	Pre	0x	0m	2	27
2014	S1	Pre	1x	0m	1	9
2014	S1	Pre	1x	0m	2	10
2014	S1	Pre	1x	0m	1	1
2014	S1	Pre	1x	0m	2	7
2014	S2	Pre	0x	0m	1	5
2014	S2	Pre	0x	0m	2	116
2014	S2	Pre	1x	0m	1	2
2014	S2	Pre	1x	0m	2	2
2014	V	Post3	0x	0m	1	3
2014	V	Post3	0x	0m	2	3
2014	V	Post3	1x	0m	1	0
2014	V	Post3	1x	0m	2	0
2014	V	Post3	2x	0m	1	3
2014	V	Post3	2x	0m	2	9
2014	S1	Post4	0x	0m	1	13
2014	S1	Post4	0x	0m	2	6
2014	S1	Post4	1x	0m	1	2
2014	S1	Post4	1x	0m	2	15
2014	S1	Post4	1x	0m	1	7
2014	S1	Post4	1x	0m	2	5
2014	S2	Post4	0x	0m	1	13
2014	S2	Post4	0x	0m	2	5
2014	S2	Post4	1x	0m	1	2
2014	S2	Post4	1x	0m	2	14
2014	S1	Post5	0x	0m	1	.
2014	S1	Post5	0x	0m	2	.
2014	S1	Post5	1x	0m	1	14
2014	S1	Post5	1x	0m	2	7
2014	S1	Post5	1x	0m	1	.
2014	S1	Post5	1x	0m	2	14
2014	S2	Post5	0x	0m	1	5
2014	S2	Post5	0x	0m	2	3
2014	S2	Post5	1x	0m	1	6
2014	S2	Post5	1x	0m	2	1
2014	V	Post4	0x	0m	1	2
2014	V	Post4	0x	0m	2	3
2014	V	Post4	1x	0m	1	.
2014	V	Post4	1x	0m	2	0
2014	V	Post4	2x	0m	1	3
2014	V	Post4	2x	0m	2	3
2014	S1	Post6	0x	0m	1	5
2014	S1	Post6	0x	0m	2	3
2014	S1	Post6	1x	0m	1	10
2014	S1	Post6	1x	0m	2	3
2014	S1	Post6	1x	0m	1	7

**Appendix AB.17:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	S1	Post6	1x	0m	2	3
2014	S2	Post6	0x	0m	1	14
2014	S2	Post6	0x	0m	2	9
2014	S2	Post6	1x	0m	1	11
2014	S2	Post6	1x	0m	2	1
2014	V	Post5	0x	0m	1	0
2014	V	Post5	0x	0m	2	0
2014	V	Post5	1x	0m	1	2
2014	V	Post5	1x	0m	2	0
2014	V	Post5	2x	0m	1	6
2014	V	Post5	2x	0m	2	4
2014	V	Post6	0x	0m	1	2
2014	V	Post6	0x	0m	2	0
2014	V	Post6	1x	0m	1	1
2014	V	Post6	1x	0m	2	0
2014	V	Post6	2x	0m	1	0
2014	V	Post6	2x	0m	2	2
2014	H	Post4	0x	0m	1	9
2014	H	Post4	0x	0m	2	6
2014	H	Post4	1x	0m	1	11
2014	H	Post4	1x	0m	2	7
2014	H	Post4	2x	0m	1	4
2014	H	Post4	2x	0m	2	22
2014	H	Post5	0x	0m	1	12
2014	H	Post5	0x	0m	2	11
2014	H	Post5	1x	0m	1	25
2014	H	Post5	1x	0m	2	17
2014	H	Post5	2x	0m	1	19
2014	H	Post5	2x	0m	2	15
2014	H	Post6	0x	0m	1	2
2014	H	Post6	0x	0m	2	13
2014	H	Post6	1x	0m	1	19
2014	H	Post6	1x	0m	2	19
2014	H	Post6	2x	0m	1	16
2014	H	Post6	2x	0m	2	14
2014	H	Pre	0x	10m	1	6
2014	H	Pre	0x	10m	2	19
2014	H	Pre	1x	10m	1	3
2014	H	Pre	1x	10m	2	6
2014	H	Pre	2x	10m	1	7
2014	H	Pre	2x	10m	2	7
2014	V	Pre	0x	10m	1	4
2014	V	Pre	0x	10m	2	10
2014	V	Pre	1x	10m	1	10
2014	V	Pre	1x	10m	2	3
2014	V	Pre	2x	10m	1	9
2014	V	Pre	2x	10m	2	5



**Appendix AB.18:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	H	Post1	0x	10m	1	1
2014	H	Post1	0x	10m	2	3
2014	H	Post1	1x	10m	1	2
2014	H	Post1	1x	10m	2	4
2014	H	Post1	2x	10m	1	4
2014	H	Post1	2x	10m	2	10
2014	V	Post1	0x	10m	1	0
2014	V	Post1	0x	10m	2	0
2014	V	Post1	1x	10m	1	4
2014	V	Post1	1x	10m	2	0
2014	V	Post1	2x	10m	1	0
2014	V	Post1	2x	10m	2	1
2014	H	Post2	0x	10m	1	19
2014	H	Post2	0x	10m	2	3
2014	H	Post2	1x	10m	1	4
2014	H	Post2	1x	10m	2	0
2014	H	Post2	2x	10m	1	6
2014	H	Post2	2x	10m	2	17
2014	H	Post3	0x	10m	1	5
2014	H	Post3	0x	10m	2	4
2014	H	Post3	1x	10m	1	0
2014	H	Post3	1x	10m	2	2
2014	H	Post3	2x	10m	1	8
2014	H	Post3	2x	10m	2	9
2014	V	Post2	0x	10m	1	3
2014	V	Post2	0x	10m	2	2
2014	V	Post2	1x	10m	1	1
2014	V	Post2	1x	10m	2	1
2014	V	Post2	2x	10m	1	2
2014	V	Post2	2x	10m	2	0
2014	S1	Pre	0x	10m	1	1
2014	S1	Pre	0x	10m	2	2
2014	S1	Pre	1x	10m	1	1
2014	S1	Pre	1x	10m	2	1
2014	S1	Pre	1x	10m	1	1
2014	S1	Pre	1x	10m	2	0
2014	S2	Pre	0x	10m	1	4
2014	S2	Pre	0x	10m	2	2
2014	S2	Pre	1x	10m	1	1
2014	S2	Pre	1x	10m	2	2
2014	V	Post3	0x	10m	1	2
2014	V	Post3	0x	10m	2	4
2014	V	Post3	1x	10m	1	0
2014	V	Post3	1x	10m	2	1
2014	V	Post3	2x	10m	1	0
2014	V	Post3	2x	10m	2	3
2014	S1	Post4	0x	10m	1	3

**Appendix AB.19:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	S1	Post4	0x	10m	2	0
2014	S1	Post4	1x	10m	1	0
2014	S1	Post4	1x	10m	2	0
2014	S1	Post4	1x	10m	1	0
2014	S1	Post4	1x	10m	2	3
2014	S2	Post4	0x	10m	1	1
2014	S2	Post4	0x	10m	2	2
2014	S2	Post4	1x	10m	1	1
2014	S2	Post4	1x	10m	2	1
2014	S1	Post5	0x	10m	1	1
2014	S1	Post5	0x	10m	2	1
2014	S1	Post5	1x	10m	1	2
2014	S1	Post5	1x	10m	2	1
2014	S1	Post5	1x	10m	1	1
2014	S1	Post5	1x	10m	2	1
2014	S2	Post5	0x	10m	1	0
2014	S2	Post5	0x	10m	2	5
2014	S2	Post5	1x	10m	1	0
2014	S2	Post5	1x	10m	2	1
2014	V	Post4	0x	10m	1	.
2014	V	Post4	0x	10m	2	.
2014	V	Post4	1x	10m	1	1
2014	V	Post4	1x	10m	2	2
2014	V	Post4	2x	10m	1	.
2014	V	Post4	2x	10m	2	.
2014	S1	Post6	0x	10m	1	0
2014	S1	Post6	0x	10m	2	0
2014	S1	Post6	1x	10m	1	0
2014	S1	Post6	1x	10m	2	1
2014	S1	Post6	1x	10m	1	2
2014	S1	Post6	1x	10m	2	0
2014	S2	Post6	0x	10m	1	0
2014	S2	Post6	0x	10m	2	0
2014	S2	Post6	1x	10m	1	1
2014	S2	Post6	1x	10m	2	2
2014	V	Post5	0x	10m	1	1
2014	V	Post5	0x	10m	2	0
2014	V	Post5	1x	10m	1	1
2014	V	Post5	1x	10m	2	2
2014	V	Post5	2x	10m	1	0
2014	V	Post5	2x	10m	2	0
2014	V	Post6	0x	10m	1	0
2014	V	Post6	0x	10m	2	0
2014	V	Post6	1x	10m	1	1
2014	V	Post6	1x	10m	2	1
2014	V	Post6	2x	10m	1	0
2014	V	Post6	2x	10m	2	0

**Appendix AB.20:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	H	Post4	0x	10m	1	.
2014	H	Post4	0x	10m	2	4
2014	H	Post4	1x	10m	1	4
2014	H	Post4	1x	10m	2	2
2014	H	Post4	2x	10m	1	3
2014	H	Post4	2x	10m	2	12
2014	H	Post5	0x	10m	1	5
2014	H	Post5	0x	10m	2	0
2014	H	Post5	1x	10m	1	0
2014	H	Post5	1x	10m	2	5
2014	H	Post5	2x	10m	1	25
2014	H	Post5	2x	10m	2	14
2014	H	Post6	0x	10m	1	7
2014	H	Post6	0x	10m	2	8
2014	H	Post6	1x	10m	1	2
2014	H	Post6	1x	10m	2	5
2014	H	Post6	2x	10m	1	14
2014	H	Post6	2x	10m	2	15
2014	H	Pre	0x	25m	1	7
2014	H	Pre	0x	25m	2	4
2014	H	Pre	1x	25m	1	7
2014	H	Pre	1x	25m	2	2
2014	H	Pre	2x	25m	1	3
2014	H	Pre	2x	25m	2	4
2014	V	Pre	0x	25m	1	3
2014	V	Pre	0x	25m	2	1
2014	V	Pre	1x	25m	1	9
2014	V	Pre	1x	25m	2	14
2014	V	Pre	2x	25m	1	5
2014	V	Pre	2x	25m	2	11
2014	H	Post1	0x	25m	1	2
2014	H	Post1	0x	25m	2	2
2014	H	Post1	1x	25m	1	6
2014	H	Post1	1x	25m	2	1
2014	H	Post1	2x	25m	1	10
2014	H	Post1	2x	25m	1	4
2014	V	Post1	0x	25m	1	0
2014	V	Post1	0x	25m	2	0
2014	V	Post1	1x	25m	1	0
2014	V	Post1	1x	25m	2	1
2014	V	Post1	2x	25m	1	1
2014	V	Post1	2x	25m	2	4
2014	H	Post2	0x	25m	1	5
2014	H	Post2	0x	25m	2	6
2014	H	Post2	1x	25m	1	4
2014	H	Post2	1x	25m	2	6
2014	H	Post2	2x	25m	1	2

**Appendix AB.21:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	H	Post2	2x	25m	2	3
2014	H	Post3	0x	25m	1	9
2014	H	Post3	0x	25m	2	0
2014	H	Post3	1x	25m	1	6
2014	H	Post3	1x	25m	2	0
2014	H	Post3	2x	25m	1	1
2014	H	Post3	2x	25m	2	4
2014	V	Post2	0x	25m	1	0
2014	V	Post2	0x	25m	2	2
2014	V	Post2	1x	25m	1	2
2014	V	Post2	1x	25m	2	0
2014	V	Post2	2x	25m	1	3
2014	V	Post2	2x	25m	2	1
2014	S1	Pre	0x	25m	1	1
2014	S1	Pre	0x	25m	2	0
2014	S1	Pre	1x	25m	1	0
2014	S1	Pre	1x	25m	2	1
2014	S1	Pre	1x	25m	1	0
2014	S1	Pre	1x	25m	2	0
2014	S2	Pre	0x	25m	1	0
2014	S2	Pre	0x	25m	2	0
2014	S2	Pre	1x	25m	1	0
2014	S2	Pre	1x	25m	2	1
2014	V	Post3	0x	25m	1	1
2014	V	Post3	0x	25m	2	0
2014	V	Post3	1x	25m	1	0
2014	V	Post3	1x	25m	2	0
2014	V	Post3	2x	25m	1	1
2014	V	Post3	2x	25m	2	2
2014	S1	Post4	0x	25m	1	0
2014	S1	Post4	0x	25m	2	0
2014	S1	Post4	1x	25m	1	0
2014	S1	Post4	1x	25m	2	0
2014	S1	Post4	1x	25m	1	2
2014	S1	Post4	1x	25m	2	1
2014	S2	Post4	0x	25m	1	4
2014	S2	Post4	0x	25m	2	1
2014	S2	Post4	1x	25m	1	0
2014	S2	Post4	1x	25m	2	3
2014	S1	Post5	0x	25m	1	0
2014	S1	Post5	0x	25m	2	0
2014	S1	Post5	1x	25m	1	0
2014	S1	Post5	1x	25m	2	1
2014	S1	Post5	1x	25m	1	2
2014	S1	Post5	1x	25m	2	0
2014	S2	Post5	0x	25m	1	1
2014	S2	Post5	0x	25m	2	4

**Appendix AB.22:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	S2	Post5	1x	25m	1	0
2014	S2	Post5	1x	25m	2	0
2014	V	Post4	0x	25m	1	.
2014	V	Post4	0x	25m	2	0
2014	V	Post4	1x	25m	1	4
2014	V	Post4	1x	25m	2	0
2014	V	Post4	2x	25m	1	2
2014	V	Post4	2x	25m	2	1
2014	S1	Post6	0x	25m	1	2
2014	S1	Post6	0x	25m	2	0
2014	S1	Post6	1x	25m	1	0
2014	S1	Post6	1x	25m	2	0
2014	S1	Post6	1x	25m	1	0
2014	S1	Post6	1x	25m	2	1
2014	S2	Post6	0x	25m	1	1
2014	S2	Post6	0x	25m	2	0
2014	S2	Post6	1x	25m	1	0
2014	S2	Post6	1x	25m	2	0
2014	V	Post5	0x	25m	1	1
2014	V	Post5	0x	25m	2	1
2014	V	Post5	1x	25m	1	0
2014	V	Post5	1x	25m	2	0
2014	V	Post5	2x	25m	1	0
2014	V	Post5	2x	25m	2	0
2014	V	Post6	0x	25m	1	0
2014	V	Post6	0x	25m	2	0
2014	V	Post6	1x	25m	1	1
2014	V	Post6	1x	25m	2	0
2014	V	Post6	2x	25m	1	0
2014	V	Post6	2x	25m	2	0
2014	H	Post4	0x	25m	1	5
2014	H	Post4	0x	25m	2	5
2014	H	Post4	1x	25m	1	2
2014	H	Post4	1x	25m	2	0
2014	H	Post4	2x	25m	1	6
2014	H	Post4	2x	25m	2	14
2014	H	Post5	0x	25m	1	2
2014	H	Post5	0x	25m	2	0
2014	H	Post5	1x	25m	1	1
2014	H	Post5	1x	25m	2	2
2014	H	Post5	2x	25m	1	6
2014	H	Post5	2x	25m	2	21
2014	H	Post6	0x	25m	1	2
2014	H	Post6	0x	25m	2	6
2014	H	Post6	1x	25m	1	3
2014	H	Post6	1x	25m	2	.
2014	H	Post6	2x	25m	1	7

**Appendix AB.23:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	H	Post6	2x	25m	2	6
2014	H	Pre	0x	50m	1	8
2014	H	Pre	0x	50m	2	6
2014	H	Pre	1x	50m	1	4
2014	H	Pre	1x	50m	2	5
2014	H	Pre	2x	50m	1	1
2014	H	Pre	2x	50m	2	4
2014	V	Pre	0x	50m	1	2
2014	V	Pre	0x	50m	2	0
2014	V	Pre	1x	50m	1	4
2014	V	Pre	1x	50m	2	4
2014	V	Pre	2x	50m	1	11
2014	V	Pre	2x	50m	2	4
2014	H	Post1	0x	50m	1	3
2014	H	Post1	0x	50m	2	5
2014	H	Post1	1x	50m	1	10
2014	H	Post1	1x	50m	2	5
2014	H	Post1	2x	50m	1	8
2014	H	Post1	2x	50m	2	4
2014	V	Post1	0x	50m	1	1
2014	V	Post1	0x	50m	2	0
2014	V	Post1	1x	50m	1	0
2014	V	Post1	1x	50m	2	0
2014	V	Post1	2x	50m	1	1
2014	V	Post1	2x	50m	2	2
2014	H	Post2	0x	50m	1	7
2014	H	Post2	0x	50m	2	3
2014	H	Post2	1x	50m	1	1
2014	H	Post2	1x	50m	2	3
2014	H	Post2	2x	50m	1	3
2014	H	Post2	2x	50m	2	2
2014	H	Post3	0x	50m	1	2
2014	H	Post3	0x	50m	2	3
2014	H	Post3	1x	50m	1	3
2014	H	Post3	1x	50m	2	4
2014	H	Post3	2x	50m	1	4
2014	H	Post3	2x	50m	2	7
2014	V	Post2	0x	50m	1	1
2014	V	Post2	0x	50m	2	1
2014	V	Post2	1x	50m	1	1
2014	V	Post2	1x	50m	2	1
2014	V	Post2	2x	50m	1	1
2014	V	Post2	2x	50m	2	0
2014	S1	Pre	0x	50m	1	0
2014	S1	Pre	0x	50m	2	0
2014	S1	Pre	1x	50m	1	3
2014	S1	Pre	1x	50m	2	2

**Appendix AB.24:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	S1	Pre	1x	50m	1	0
2014	S1	Pre	1x	50m	2	0
2014	S2	Pre	0x	50m	1	0
2014	S2	Pre	0x	50m	2	0
2014	S2	Pre	1x	50m	1	2
2014	S2	Pre	1x	50m	2	5
2014	V	Post3	0x	50m	1	1
2014	V	Post3	0x	50m	2	1
2014	V	Post3	1x	50m	1	0
2014	V	Post3	1x	50m	2	1
2014	V	Post3	2x	50m	1	1
2014	V	Post3	2x	50m	2	0
2014	S1	Post4	0x	50m	1	1
2014	S1	Post4	0x	50m	2	0
2014	S1	Post4	1x	50m	1	0
2014	S1	Post4	1x	50m	2	0
2014	S1	Post4	1x	50m	1	0
2014	S1	Post4	1x	50m	2	0
2014	S2	Post4	0x	50m	1	1
2014	S2	Post4	0x	50m	2	0
2014	S2	Post4	1x	50m	1	1
2014	S2	Post4	1x	50m	2	1
2014	S1	Post5	0x	50m	1	0
2014	S1	Post5	0x	50m	2	0
2014	S1	Post5	1x	50m	1	2
2014	S1	Post5	1x	50m	2	0
2014	S1	Post5	1x	50m	2	0
2014	S2	Post5	0x	50m	1	0
2014	S2	Post5	0x	50m	2	3
2014	S2	Post5	1x	50m	1	1
2014	S2	Post5	1x	50m	2	0
2014	V	Post4	0x	50m	1	0
2014	V	Post4	0x	50m	2	.
2014	V	Post4	1x	50m	1	0
2014	V	Post4	1x	50m	2	0
2014	V	Post4	2x	50m	1	0
2014	V	Post4	2x	50m	2	0
2014	S1	Post6	0x	50m	1	1
2014	S1	Post6	0x	50m	2	0
2014	S1	Post6	1x	50m	1	2
2014	S1	Post6	1x	50m	2	1
2014	S1	Post6	1x	50m	1	1
2014	S1	Post6	1x	50m	2	0
2014	S2	Post6	0x	50m	1	0
2014	S2	Post6	0x	50m	2	1
2014	S2	Post6	1x	50m	1	2
2014	S2	Post6	1x	50m	2	3

**Appendix AB.25:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	V	Post5	0x	50m	1	0
2014	V	Post5	0x	50m	2	0
2014	V	Post5	1x	50m	1	0
2014	V	Post5	1x	50m	2	0
2014	V	Post5	2x	50m	1	0
2014	V	Post5	2x	50m	2	1
2014	V	Post6	0x	50m	1	0
2014	V	Post6	0x	50m	2	0
2014	V	Post6	1x	50m	1	0
2014	V	Post6	1x	50m	2	1
2014	V	Post6	2x	50m	1	0
2014	V	Post6	2x	50m	2	0
2014	H	Post4	0x	50m	1	2
2014	H	Post4	0x	50m	2	0
2014	H	Post4	1x	50m	1	1
2014	H	Post4	1x	50m	2	2
2014	H	Post4	2x	50m	1	2
2014	H	Post4	2x	50m	2	1
2014	H	Post5	0x	50m	1	2
2014	H	Post5	0x	50m	2	3
2014	H	Post5	1x	50m	1	1
2014	H	Post5	1x	50m	2	3
2014	H	Post5	2x	50m	1	4
2014	H	Post5	2x	50m	2	4
2014	H	Post6	0x	50m	1	3
2014	H	Post6	0x	50m	2	2
2014	H	Post6	1x	50m	1	1
2014	H	Post6	1x	50m	2	4
2014	H	Post6	2x	50m	1	0
2014	H	Post6	2x	50m	2	4
2014	S1	Post5	1x	50m	1	0
2014	H	Pre	0x	5m	1	10
2014	H	Pre	0x	5m	2	4
2014	H	Pre	1x	5m	1	3
2014	H	Pre	1x	5m	2	2
2014	H	Pre	2x	5m	1	2
2014	H	Pre	2x	5m	2	5
2014	V	Pre	0x	5m	1	8
2014	V	Pre	0x	5m	2	4
2014	V	Pre	1x	5m	1	5
2014	V	Pre	1x	5m	2	7
2014	V	Pre	2x	5m	1	4
2014	V	Pre	2x	5m	2	0
2014	H	Post1	0x	5m	1	3
2014	H	Post1	0x	5m	2	7
2014	H	Post1	1x	5m	1	6
2014	H	Post1	1x	5m	2	0



**Appendix AB.26:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	H	Post1	2x	5m	1	4
2014	H	Post1	2x	5m	2	9
2014	V	Post1	0x	5m	1	.
2014	V	Post1	0x	5m	2	.
2014	V	Post1	1x	5m	1	1
2014	V	Post1	1x	5m	2	2
2014	V	Post1	2x	5m	1	1
2014	V	Post1	2x	5m	2	0
2014	H	Post2	0x	5m	1	8
2014	H	Post2	0x	5m	2	8
2014	H	Post2	1x	5m	1	2
2014	H	Post2	1x	5m	2	0
2014	H	Post2	2x	5m	1	1
2014	H	Post2	2x	5m	2	4
2014	H	Post3	0x	5m	1	7
2014	H	Post3	0x	5m	2	12
2014	H	Post3	1x	5m	1	3
2014	H	Post3	1x	5m	2	5
2014	H	Post3	2x	5m	1	15
2014	H	Post3	2x	5m	2	3
2014	V	Post2	0x	5m	1	1
2014	V	Post2	0x	5m	2	3
2014	V	Post2	1x	5m	1	2
2014	V	Post2	1x	5m	2	0
2014	V	Post2	2x	5m	1	0
2014	V	Post2	2x	5m	2	2
2014	S1	Pre	0x	5m	1	2
2014	S1	Pre	0x	5m	2	1
2014	S1	Pre	1x	5m	1	0
2014	S1	Pre	1x	5m	2	0
2014	S1	Pre	1x	5m	1	0
2014	S1	Pre	1x	5m	2	2
2014	S2	Pre	0x	5m	1	1
2014	S2	Pre	0x	5m	2	2
2014	S2	Pre	1x	5m	1	2
2014	S2	Pre	1x	5m	2	6
2014	V	Post3	0x	5m	1	3
2014	V	Post3	0x	5m	2	5
2014	V	Post3	1x	5m	1	1
2014	V	Post3	1x	5m	2	1
2014	V	Post3	2x	5m	1	0
2014	V	Post3	2x	5m	2	1
2014	S1	Post4	0x	5m	1	0
2014	S1	Post4	0x	5m	2	1
2014	S1	Post4	1x	5m	1	1
2014	S1	Post4	1x	5m	2	2
2014	S1	Post4	1x	5m	1	1

**Appendix AB.27:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	S1	Post4	1x	5m	2	0
2014	S2	Post4	0x	5m	1	1
2014	S2	Post4	0x	5m	2	1
2014	S2	Post4	1x	5m	1	4
2014	S2	Post4	1x	5m	2	4
2014	S1	Post5	0x	5m	1	.
2014	S1	Post5	0x	5m	2	1
2014	S1	Post5	1x	5m	1	1
2014	S1	Post5	1x	5m	2	1
2014	S1	Post5	1x	5m	1	0
2014	S1	Post5	1x	5m	2	4
2014	S2	Post5	0x	5m	1	0
2014	S2	Post5	0x	5m	2	0
2014	S2	Post5	1x	5m	1	1
2014	S2	Post5	1x	5m	2	0
2014	V	Post4	0x	5m	1	.
2014	V	Post4	0x	5m	2	.
2014	V	Post4	1x	5m	1	.
2014	V	Post4	1x	5m	2	1
2014	V	Post4	2x	5m	1	.
2014	V	Post4	2x	5m	2	.
2014	S1	Post6	0x	5m	1	1
2014	S1	Post6	0x	5m	2	1
2014	S1	Post6	1x	5m	1	1
2014	S1	Post6	1x	5m	2	1
2014	S1	Post6	1x	5m	1	0
2014	S1	Post6	1x	5m	2	3
2014	S2	Post6	0x	5m	1	.
2014	S2	Post6	0x	5m	2	2
2014	S2	Post6	1x	5m	1	1
2014	S2	Post6	1x	5m	2	0
2014	V	Post5	0x	5m	1	0
2014	V	Post5	0x	5m	2	0
2014	V	Post5	1x	5m	1	1
2014	V	Post5	1x	5m	2	0
2014	V	Post5	2x	5m	1	0
2014	V	Post5	2x	5m	2	0
2014	V	Post6	0x	5m	1	0
2014	V	Post6	0x	5m	2	0
2014	V	Post6	1x	5m	1	0
2014	V	Post6	1x	5m	2	0
2014	V	Post6	2x	5m	1	0
2014	V	Post6	2x	5m	2	0
2014	H	Post4	0x	5m	1	7
2014	H	Post4	0x	5m	2	12
2014	H	Post4	1x	5m	1	2
2014	H	Post4	1x	5m	2	3

**Appendix AB.28:** Beneficial arthropod abundance values from crop fields in 2013/2014 combined from crop fields with pitfall traps and SAS 9.2 code used.

2014	H	Post4	2x	5m	1	10
2014	H	Post4	2x	5m	2	5
2014	H	Post5	0x	5m	1	14
2014	H	Post5	0x	5m	2	10
2014	H	Post5	1x	5m	1	2
2014	H	Post5	1x	5m	2	0
2014	H	Post5	2x	5m	1	13
2014	H	Post5	2x	5m	2	11
2014	H	Post6	0x	5m	1	1
2014	H	Post6	0x	5m	2	8
2014	H	Post6	1x	5m	1	6
2014	H	Post6	1x	5m	2	6
2014	H	Post6	2x	5m	1	14
2014	H	Post6	2x	5m	2	11;

```
proc sort data=NE;
by year site timing treatment distance;
run;
proc means data=NE;
by year site timing treatment distance;
var NE;
output out=mean_NE mean=mean_NE;
run;
```

```
proc mixed data=mean_NE;
class year site timing distance treatment;
model mean_NE=year site timing treatment distance timing*treatment*distance / ddfm = satterth;
slice timing*treatment*distance / sliceby = timing*distance diff lines;
run;
```

**Appendix AC:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Pre 0m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	1	1	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	1	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	1	2	1	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	2	0	0	0	0	0	3	0	0
Syrphidae	0	0	0	2	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	2	2	3	4	3	3	1	1	2	4	8	10
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	1	0	1	0	0	1	0	0	0	0	2	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Pre 5m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	1	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix AC.2:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Pre 5m</b>												
<i>Hippodamia convergens</i>	0	0	0	1	0	0	0	0	0	0	1	1
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	0	0	0	0	1	0	0	0	0	0	1	1
Syrphidae	0	0	0	0	0	1	0	0	1	0	0	0
<i>Orius insidiosus</i>	0	1	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	1	2	1	2	3	0	2	2	2	1	2	2
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	1	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Pre 10m</b>												
Araneae	0	1	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	2	1	0	0	1	0	0	2	0	0	1	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	0	0	0	0	2	0	0	0	0	2	0	1
Syrphidae	0	0	0	1	0	0	1	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	1	1
Parasitic wasps	0	2	0	2	3	1	0	1	2	1	3	1
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix AC.3:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Pre 10m</b>												
Chrysopidae	0	0	0	0	0	0	0	0	0	0	2	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Pre 25m</b>												
Araneae	0	1	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	1	0	1	0	1	0	1	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	0	0	0	1	0	1	0	0	0	1	1	0
Syrphidae	0	0	0	1	0	0	1	0	0	1	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	1
Parasitic wasps	0	0	2	3	0	1	1	0	1	2	2	1
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Pre 50m</b>												
Araneae	1	0	1	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	1	0

**Appendix AC.4:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Pre 50m</b>												
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	1	0	1	0	1	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	0	0	0	0	0	3	0	0	0	0	0	0
Syrphidae	0	0	0	0	0	0	0	1	0	0	1	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	2	2	2	1	0	1	6	4	3	1	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 1 0m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	1	1
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	1
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	2	0	1
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix AC.5:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 1 0m</b>												
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	12	3	2	NA	NA	NA	NA	NA	NA	2	0	1
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	1	1	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 1 5m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	NA	2	1	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	4	1	10	NA	NA	NA	NA	NA	NA	3	1	0
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 1 10m</b>												
Araneae	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0



**Appendix AC.6:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 1 10m</b>												
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	1
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	3
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	1	1	NA	NA	NA	NA	NA	NA	2	1	1
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 1 25m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	1	1	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix AC.7:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 1 25m</b>												
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	3	2	7	NA	NA	NA	NA	NA	NA	0	0	0
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 1 50m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	3
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	0	5	4	NA	NA	NA	NA	NA	NA	1	0	0
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix AC.8:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 2 0m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	1
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	2
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	1	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	5	1	4
Syrphidae	0	1	0	NA	NA	NA	NA	NA	NA	0	0	1
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Parasitic wasps	2	1	2	NA	NA	NA	NA	NA	NA	17	4	2
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	1
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 2 5m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix AC.9:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 2 5m</b>												
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	1	1	0
Syrphidae	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	0	2	1	NA	NA	NA	NA	NA	NA	4	3	6
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Hemeroibiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 2 10m</b>												
Araneae	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	1	3	0	NA	NA	NA	NA	NA	NA	1	0	1
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	1	1	0	NA	NA	NA	NA	NA	NA	0	2	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	5	1	2	NA	NA	NA	NA	NA	NA	5	0	4
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix AC.10:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 2 10m</b>												
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 2 25m</b>												
Araneae	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	3	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	1	0	0	NA	NA	NA	NA	NA	NA	0	0	1
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	1	0	NA	NA	NA	NA	NA	NA	1	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	2	3	NA	NA	NA	NA	NA	NA	3	3	3
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	1
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 2 50m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	1	1	0

**Appendix AC.11:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 2 50m</b>												
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	1	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	0	0	0	NA	NA	NA	NA	NA	NA	2	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	1	0	NA	NA	NA	NA	NA	NA	2	0	0
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Hemeroptera	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 0m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	1
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Brachiacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Brachiacantha ursina</i>	0	1	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septempunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	1	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	0	1	0	NA	NA	NA	NA	NA	NA	2	3	0
Syrphidae	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix AC.12:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 3 0m</b>												
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	3	4	2	NA	NA	NA	NA	NA	NA	3	3	0
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	2	0	2	NA	NA	NA	NA	NA	NA	0	1	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 5m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	1	2	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	0	0	NA	NA	NA	NA	NA	NA	0	3	0
Syrphidae	0	1	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	3	1	1	NA	NA	NA	NA	NA	NA	4	0	2
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 10m</b>												
Araneae	1	0	0	NA	NA	NA	NA	NA	NA	0	1	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix AC.13:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 3 10m</b>												
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	NA	1	0	1
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	0	0	0	NA	NA	NA	NA	NA	NA	2	0	1
Syrphidae	1	0	2	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	2	3	1	NA	NA	NA	NA	NA	NA	0	0	3
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Hemeroibiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 25m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	NA	1	0	2
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0



**Appendix AC.14:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 3 25m</b>												
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	0	1	0	NA	NA	NA	NA	NA	NA	4	0	1
Syrphidae	0	3	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	1	2	NA	NA	NA	NA	NA	NA	1	1	1
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 50m</b>												
Araneae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	2	0	NA	NA	NA	NA	NA	NA	0	1	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Dolicopodidae	1	0	1	NA	NA	NA	NA	NA	NA	2	1	2
Syrphidae	0	0	1	NA	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	2	1	NA	NA	NA	NA	NA	NA	1	0	3
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	1	1	NA	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	NA	0	0	0

**Appendix AC.15:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 4 0m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	2	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	1	0	1	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	8	16	7	7	0	0	0	0	0	1	2	1
Syrphidae	0	0	0	1	0	0	1	0	1	8	4	0
<i>Orius insidiosus</i>	0	0	2	0	0	0	0	0	0	0	0	0
Parasitic wasps	2	2	12	9	6	6	1	5	18	0	2	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	1	1	2	0	1	0	0	0	1	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 4 5m</b>												
Araneae	0	0	0	0	0	0	0	0	0	NA	0	0
Cleridae	0	0	0	0	0	0	0	0	0	NA	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	NA	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	NA	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	NA	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	NA	0	0
<i>Cycloneda munda</i>	0	0	0	1	0	0	0	0	0	NA	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	NA	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	NA	0	0

**Appendix AC.16:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 4 5m</b>												
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	NA	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	NA	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	NA	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	NA	0	0
Dolicopodidae	3	2	0	1	0	0	0	0	0	NA	0	0
Syrphidae	0	0	0	0	0	2	1	0	0	NA	0	1
<i>Orius insidiosus</i>	0	0	1	0	0	0	0	0	0	NA	0	0
Parasitic wasps	9	6	17	0	4	0	7	1	5	NA	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	NA	0	0
Chrysopidae	0	0	2	0	0	0	0	0	0	NA	0	0
Hemeroibiidae	0	0	0	0	0	0	0	0	0	NA	0	0
<b>Post 4 10m</b>												
Araneae	0	0	1	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	1	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	7	0	7	0	0	0	0	0	0	0	0	0
Syrphidae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	8	4	9	2	4	2	3	3	0	0	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix AC.17:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 4 10m</b>												
Chrysopidae	0	0	2	0	0	0	0	0	1	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 4 25m</b>												
Araneae	0	0	0	0	0	0	0	0	0	NA	NA	NA
Cleridae	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
Bombyliidae	0	0	0	0	0	0	0	0	0	NA	NA	NA
Dolicopodidae	3	0	15	0	0	0	0	0	0	NA	NA	NA
Syrphidae	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
Parasitic wasps	9	1	3	3	3	1	2	1	1	NA	NA	NA
Tiphiidae	0	0	0	0	0	0	0	0	0	NA	NA	NA
Chrysopidae	0	0	0	0	0	0	0	0	0	NA	NA	NA
Hemerobiidae	0	1	0	0	0	0	0	0	0	NA	NA	NA
<b>Post 4 50m</b>												
Araneae	0	0	2	0	0	0	0	0	0	NA	NA	NA
Cleridae	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA

**Appendix AC.18:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 4 50m</b>												
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	1	0	NA	NA	NA
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
Bombyliidae	0	0	0	0	0	0	0	0	0	NA	NA	NA
Dolicopodidae	10	0	0	0	0	0	0	0	0	NA	NA	NA
Syrphidae	0	0	0	0	0	0	0	0	0	NA	NA	NA
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	NA	NA	NA
Parasitic wasps	16	3	4	3	2	1	6	11	2	NA	NA	NA
Tiphiidae	0	0	0	0	0	0	0	0	0	NA	NA	NA
Chrysopidae	0	0	2	0	0	0	0	0	0	NA	NA	NA
Hemeroibiidae	0	0	0	0	0	0	0	0	0	NA	NA	NA
<b>Post 5 0m</b>												
Araneae	0	0	0	1	0	0	0	0	0	1	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	6	20	5	1	0	0	0	0	0	1	1	5
Syrphidae	0	0	0	0	1	1	0	0	0	0	0	0

**Appendix AC.19:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 5 0m</b>												
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	5	9	11	0	0	1	0	1	0	2	1	1
Tiphiidae	0	0	1	0	0	0	0	0	0	0	0	0
Chrysopidae	1	1	0	0	0	0	0	0	1	0	1	2
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 5 5m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	1	1	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	1	1	0	0	0	0	0	0	2	0	2
Syrphidae	0	0	1	0	0	1	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	2	0	0	0	0	0	0	0	0	0
Parasitic wasps	7	3	9	0	0	0	2	3	0	0	2	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	1	0	0	0	0	0	0	0	0	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 5 10m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix AC.20:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 5 10m</b>												
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	1	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	1	0	0	0	0	0	0	0	0	0
Dolichopodidae	4	1	0	0	0	0	0	0	0	4	0	1
Syrphidae	0	0	0	0	1	1	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	4	4	1	0	0	1	0	1	0	0	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	0	0
Hemerobiidae	0	0	1	0	0	0	0	0	0	0	0	0
<b>Post 5 25m</b>												
Araneae	0	0	0	0	0	1	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix AC.21:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 5 25m</b>												
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	1	0	1	0	0	0	0	0	0	0	0	1
Syrphidae	1	1	0	0	0	1	0	0	0	0	0	0
<i>Orius insidiosus</i>	1	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	14	1	15	0	1	1	1	0	2	0	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	1	0	0	0	0	0	0	0	0	0	0
Hemerobiidae	0	1	2	0	0	0	0	0	0	0	0	0
<b>Post 5 50m</b>												
Araneae	0	0	0	0	0	0	0	1	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	1	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	3	1	2	0	0	0	0	3	0	0	1	0
Syrphidae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	1	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	8	3	6	0	0	1	1	4	1	0	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	1	0	0	0	0	0	0	2	0	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0



**Appendix AC.22:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 6 0m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	2	5	5	0	1	0	0	0	0	5	0	8
Syrphidae	0	1	2	0	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	1	6	3	0	2	2	4	2	3	7	1	1
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	1	1	2	0	1	0	0	0	0	1	1	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6 5m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	1	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix AC.23:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 6 5m</b>												
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	1	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	3	0	0	0	0	0	0	0	0	2	0	1
Syrphidae	0	0	1	0	3	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	5	2	1	0	1	2	2	2	5	0	0	1
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	1	1	0	0	0	0	0	0	1	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6 10m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	1	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	1	0	2	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	1	0	0	1	1	2	0	1
Syrphidae	0	0	0	0	2	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	0	3	3	0	2	0	1	2	2	0	1	1
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix AC.24:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 6 10m</b>												
Chrysopidae	2	0	1	0	1	1	0	3	0	0	0	0
Hemerobiidae	0	4	0	0	0	0	0	0	0	0	0	0
<b>Post 6 25m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	2	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	1	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolicopodidae	0	0	0	0	0	0	0	0	0	1	1	0
Syrphidae	0	0	0	1	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	5	7	6	1	2	0	42	0	0	0	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	1	0	0	0	0	2	0	0	0	0
Hemerobiidae	0	3	2	0	0	0	0	0	0	0	0	0
<b>Post 6 50m</b>												
Araneae	0	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0	0

**Appendix AC.25:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2			V		
	0x	1x	2x	0x	1x	1x	0x	1x	1x	0x	1x	2x
<b>Post 6 50m</b>												
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	1	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	0	0	0	0	0	0	0	1
Syrphidae	0	0	0	2	0	0	0	1	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	1	1	8	2	2	0	6	0	6	0	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	2	1	0	0	0	0	0	0	0	0	0	0
Hemerobiidae	0	4	0	0	0	0	0	0	0	0	0	0

**Appendix AD:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Pre 0m</b>											
Araneae	1	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	1	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	1	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	1	1	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	6	10	10	0	1	4	11	4
Syrphidae	0	0	0	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	4	52	27	5	3	3	2	4	0	1	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	1	1	0	1	1	0	1	0	0	2	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Pre 5m</b>											
Araneae	1	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	1	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0

**Appendix AD.2:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Pre 5m</b>											
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	1	1	0	2	0	3	3	3
Syrphidae	0	0	0	0	0	0	1	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	16	3	3	2	3	4	3	5	6	1	5
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	1	0	1	1	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Pre 10m</b>											
Araneae	0	1	1	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	1	0	1
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	1	0	4	2	0	3	3	4
Syrphidae	0	0	0	0	0	3	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	5	4	3	2	2	2	2	2	1	3	8
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0

**Appendix AD.3:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Pre 10m</b>											
Chrysopidae	0	0	0	0	1	0	0	0	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Pre 25m</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	1
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	2	0	1	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	1	3	0	1	0	3	1	1
Syrphidae	0	0	0	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	6	7	9	2	2	3	0	3	1	3	6
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	1	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Pre 50m</b>											
Araneae	1	0	0	0	0	0	NA	0	0	0	0
Cleridae	0	0	0	0	0	0	NA	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	NA	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	NA	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	NA	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	NA	0	0	0	0

**Appendix AD.4:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Pre 50m</b>											
<i>Cycloneda munda</i>	0	0	0	0	0	0	NA	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	NA	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	NA	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	NA	1	1	1	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	NA	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	NA	0	0	0	0
Bombyliidae	0	0	0	0	0	0	NA	0	0	0	0
Dolichopodidae	0	0	0	2	1	5	NA	2	1	1	0
Syrphidae	0	0	0	0	0	0	NA	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	NA	0	0	0	0
Parasitic wasps	2	8	8	1	2	3	NA	2	0	1	2
Tiphiidae	0	0	0	0	0	0	NA	0	0	0	0
Chrysopidae	0	0	0	0	0	0	NA	1	0	0	1
Hemerobiidae	0	0	0	0	0	0	NA	0	0	0	0
<b>Post 1 0m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	1	3	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	13	3	6	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	4	0



**Appendix AD.5:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 1 0m</b>											
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	3	3	7	NA	NA	NA	NA	NA	0	1	0
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	1	0	0	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 1 5m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	1	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	6	0	2	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	1	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	2	1	NA	NA	NA	NA	NA	9	4	3
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	1	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 1 10m</b>											
Araneae	0	0	1	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix AD.6:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 1 10m</b>											
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	1	1	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	1	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	3	3	2	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	1	1
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	3	2	2	NA	NA	NA	NA	NA	5	0	0
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 1 25m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	1	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix AD.7:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	S2 0x	1x	0x	V 1x	2x
<b>Post 1 25m</b>											
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	22	3	9	NA	NA	NA	NA	NA	0	0	1
Syrphidae	0	0	1	NA	NA	NA	NA	NA	1	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	0	3	NA	NA	NA	NA	NA	2	5	3
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 1 50m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	1	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	14	7	11	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	0	1	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	2	1	2	NA	NA	NA	NA	NA	2	2	0
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix AD.8:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 2 0m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	0	0	0	NA	NA	NA	NA	NA	2	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	3	4	2	NA	NA	NA	NA	NA	7	7	22
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	1	0	0	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 2 5m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix AD.9:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 2 5m</b>											
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	1	0	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	0	2	1	NA	NA	NA	NA	NA	32	11	28
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 2 10m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	1
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	1	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	1	0	NA	NA	NA	NA	NA	19	8	10
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix AD.10:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 2 10m</b>											
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 2 25m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	3	0	0	NA	NA	NA	NA	NA	2	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	1	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	2	0	2	NA	NA	NA	NA	NA	10	7	15
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 2 50m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix AD.11:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 2 50m</b>											
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	0	2	NA	NA	NA	NA	NA	12	5	11
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	1
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 0m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	1	2	0	NA	NA	NA	NA	NA	9	8	0
Syrphidae	0	0	2	NA	NA	NA	NA	NA	0	0	0

**Appendix AD.12:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 3 0m</b>											
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	0	1	3	NA	NA	NA	NA	NA	10	3	7
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	2	0	0	NA	NA	NA	NA	NA	0	0	1
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 5m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	1	2	0	NA	NA	NA	NA	NA	5	3	0
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	4	1	NA	NA	NA	NA	NA	8	4	5
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	1	0	NA	NA	NA	NA	NA	1	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 10m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0



**Appendix AD.13:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 3 10m</b>											
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	0	1	0	NA	NA	NA	NA	NA	0	2	2
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	1	2	2	NA	NA	NA	NA	NA	7	2	4
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	1	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 25m</b>											
Araneae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix AD.14:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 3 25m</b>											
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	2	0	1	NA	NA	NA	NA	NA	0	1	1
Syrphidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	4	2	0	NA	NA	NA	NA	NA	15	3	6
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<b>Post 3 50m</b>											
Araneae	0	0	2	NA	NA	NA	NA	NA	0	1	0
Cleridae	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Cycloneda munda</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	NA	NA	NA	NA	NA	1	0	0
Bombyliidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Dolichopodidae	2	0	0	NA	NA	NA	NA	NA	0	1	1
Syrphidae	0	0	2	NA	NA	NA	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	NA	NA	NA	NA	NA	0	0	0
Parasitic wasps	0	2	2	NA	NA	NA	NA	NA	5	5	4
Tiphiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0
Chrysopidae	0	0	0	NA	NA	NA	NA	NA	0	0	2
Hemerobiidae	0	0	0	NA	NA	NA	NA	NA	0	0	0

**Appendix AD.15:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 4 0m</b>											
Araneae	1	0	0	0	1	0	0	1	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	4	0	1	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	1	0	0	0	2	4	0	0	0	4	0
Syrphidae	1	1	1	0	2	0	1	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	1	0	0	0
Parasitic wasps	23	9	31	9	2	4	13	15	2	5	5
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	1	1	0	0	0	0	1	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 4 5m</b>											
Araneae	0	0	0	0	0	1	0	0	0	0	0
Cleridae	0	1	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	1	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	1	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0

**Appendix AD.16:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 4 5m</b>											
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	1	1	1	0	0	0	0	3	0
Syrphidae	2	3	2	0	0	1	0	0	0	1	0
<i>Orius insidiosus</i>	1	0	0	0	1	2	1	0	0	0	0
Parasitic wasps	45	11	32	3	0	2	11	8	4	4	2
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	1	0	0	0	0	0	0	1	0
Hemerobiidae	0	1	0	0	0	0	0	0	0	0	0
<b>Post 4 10m</b>											
Araneae	0	1	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	1	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	1	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	0	1	3	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	2	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	52	9	26	1	2	2	3	4	2	3	3
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0

**Appendix AD.17:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 4 10m</b>											
Chrysopidae	1	1	0	0	0	0	0	0	0	1	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 4 25m</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	1	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	0	0	0	0	0	0	2
Syrphidae	2	3	2	0	0	0	2	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	1	2	0	2	0	0	0
Parasitic wasps	23	8	18	1	2	1	4	4	3	4	2
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	1	1	0	0	0	0	1	0	0	0	0
Hemerobiidae	0	0	1	0	0	0	0	0	0	0	0
<b>Post 4 50m</b>											
Araneae	0	0	0	0	0	0	NA	NA	0	0	0
Cleridae	0	0	0	0	0	0	NA	NA	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	NA	NA	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	NA	NA	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	NA	NA	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	NA	NA	0	0	0

**Appendix AD.18:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 4 50m</b>											
<i>Cycloneda munda</i>	0	0	0	0	0	0	NA	NA	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	NA	NA	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	NA	NA	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	NA	NA	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	NA	NA	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	NA	NA	0	0	0
Bombyliidae	0	0	0	0	1	0	NA	NA	0	0	0
Dolichopodidae	0	1	0	0	0	0	NA	NA	0	0	0
Syrphidae	0	5	1	0	0	1	NA	NA	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	NA	NA	0	0	0
Parasitic wasps	9	11	17	4	3	2	NA	NA	3	2	2
Tiphiidae	0	0	0	0	0	0	NA	NA	0	0	0
Chrysopidae	1	0	0	0	0	0	NA	NA	0	0	0
Hemerobiidae	0	0	0	0	0	0	NA	NA	0	0	0
<b>Post 5 0m</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	1	2	2	4	2	9	0	0	4	20	0
Syrphidae	0	2	1	0	0	0	0	0	0	1	0

**Appendix AD.19:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 5 0m</b>											
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	56	43	78	4	3	2	1	0	1	2	2
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	1	1	0	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 5 5m</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	1	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	1	0	1	0	0	0	4	4	0
Syrphidae	2	1	0	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	1	0	0
Parasitic wasps	36	49	48	2	0	1	4	5	0	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	1	0	0	2
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 5 10m</b>											
Araneae	1	1	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0

**Appendix AD.20:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 5 10m</b>											
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	1	1	0	0	0	0	0	0	1	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	1	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	1	1	1	0	0	2	4	0
Syrphidae	1	1	4	0	0	0	0	0	0	0	2
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	55	30	39	2	1	1	4	5	0	0	0
Tiphiidae											
Chrysopidae	0	0	0	0	0	0	0	0	1	0	0
Hemerobiidae	1	0	0	0	0	0	0	0	0	0	0
<b>Post 5 25m</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0



**Appendix AD.21:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 5 25m</b>											
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	0	2	1	1	0	0	1
Syrphidae	4	1	3	0	0	0	0	0	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	1
Parasitic wasps	44	21	46	4	2	0	0	0	0	0	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	0	1
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 5 50m</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	1	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	1	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	1	0	0	0	0	0	1	0	0
Syrphidae	1	3	4	0	0	0	0	0	0	0	1
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	14	11	27	2	2	1	3	2	0	1	0
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	0	0	0	1	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0

**Appendix AD.22:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6 0m</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	3	2	0	1	13	25	4
Syrphidae	0	1	0	0	0	0	0	1	0	0	0
<i>Orius insidiosus</i>	1	1	1	0	0	0	0	0	0	0	0
Parasitic wasps	24	40	20	2	6	6	5	0	2	5	3
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	1	1	0	0	0	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6 5m</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	1	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0

**Appendix AD.23:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6 5m</b>											
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	0	0	0	0	5	14	0
Syrphidae	0	0	0	0	0	0	2	0	0	0	0
<i>Orius insidiosus</i>	2	1	0	0	0	0	0	0	0	0	0
Parasitic wasps	21	20	18	5	2	1	0	0	4	2	8
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	1	0	3	1	0	1	0
Hemerobiidae	1	0	0	0	0	0	0	0	0	0	0
<b>Post 6 10m</b>											
Araneae	0	0	0	0	1	0	0	1	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	1
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	1	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	1
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	0	0	0	0	11	9	0
Syrphidae	1	0	0	0	0	1	0	0	0	0	0
<i>Orius insidiosus</i>	1	0	1	0	0	0	0	0	0	0	0
Parasitic wasps	22	24	12	2	1	0	0	1	4	6	4
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0

**Appendix AD.24:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6 10m</b>											
Chrysopidae	0	0	0	0	1	0	0	0	0	1	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6 25m</b>											
Araneae	0	0	0	0	1	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	0	0	0	0	1	9	0
Syrphidae	0	3	1	2	0	0	0	0	1	0	0
<i>Orius insidiosus</i>	1	1	1	0	0	0	0	0	0	0	0
Parasitic wasps	17	19	11	0	2	2	4	1	3	3	3
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	0	0	0	0	0	3	0	0	0	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0
<b>Post 6 50m</b>											
Araneae	0	0	0	0	0	0	0	0	0	0	0
Cleridae	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha decempustulata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Braciacantha ursina</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coccinella septumpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Coleomegilla maculata</i>	0	0	0	0	0	0	0	0	0	0	0

**Appendix AD.25:** Natural enemy taxa collected in crop fields with yellow sticky cards in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6 50m</b>											
<i>Cycloneda munda</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Diomus</i> sp.	0	0	0	0	0	0	0	0	0	0	0
<i>Harmonia axyridis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia convergens</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia parenthesis</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hippodamia tredecimpunctata</i>	0	0	0	0	0	0	0	0	0	0	0
Bombyliidae	0	0	0	0	0	0	0	0	0	0	0
Dolichopodidae	0	0	0	0	0	0	0	0	0	5	1
Syrphidae	0	1	0	2	2	0	0	1	0	0	0
<i>Orius insidiosus</i>	0	0	0	0	0	0	0	0	0	0	0
Parasitic wasps	13	13	15	2	0	1	1	0	5	5	3
Tiphiidae	0	0	0	0	0	0	0	0	0	0	0
Chrysopidae	0	1	0	5	0	0	0	3	0	1	0
Hemerobiidae	0	0	0	0	0	0	0	0	0	0	0

**Appendix AE:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Pre 0m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.5	1.0	0.5	0.0	0.0	0.5	0.5	0.0	0.0	1.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	1.0	0.0	0.0	2.5	0.5	1.5	0.5	3.0	1.0	9.0	2.5	10.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.5	0.5	0.5	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.5	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.0	1.0	1.0	1.0	2.0	0.5	0.5	2.5	0.5	2.5	0.5	5.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.5	0.5	0.0	0.0	0.0	1.0	2.0	0.0	0.0	0.0	0.5
Staphylinidae	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	2.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0
Formicidae	1.5	0.5	1.5	6.0	0.0	0.5	0.5	0.0	0.0	0.0	0.5	0.5
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Pre 5m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AE.2:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Pre 5m</b>												
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	2.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	1.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.5	0.0	1.0	1.5	0.5	0.0	0.5	5.0	0.0	4.0	0.0	2.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Formicidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Pre 10m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0

**Appendix AE.3:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Pre 10m</b>												
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	1.0	0.0	1.5	0.0	1.5
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.0	0.5	0.0	3.0	1.0	1.0	2.0	0.5	0.0	4.5	0.0	0.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Formicidae	0.5	0.0	0.0	1.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Pre 25m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	1.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	2.5	0.5	0.5



**Appendix AE.4:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Pre 25m</b>												
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Opiliones	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.0	0.0	0.5	0.0	1.0	1.0	1.0	1.5	1.0	2.5	0.0	6.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Formicidae	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Pre 50m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.5	1.0	0.0	0.5	0.0	0.0	0.0	0.5	2.0	0.0	1.5
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AE.5:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Pre 50m</b>												
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.5	1.5	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.0	0.5	0.5	0.0	4.5	0.0	1.0	0.0	0.5	0.5	1.5	1.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Staphylinidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	2.0
Geocoridae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Formicidae	2.0	8.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 1 0m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	1.5	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.5
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	2.0	3.5	NA	NA	NA	NA	NA	NA	5.5	0.0	3.5
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.6:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 1 0m</b>												
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.5	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	1.5	0.5	1.0	NA	NA	NA	NA	NA	NA	3.0	0.0	7.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.5
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.5	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.5
Formicidae	0.5	2.0	4.0	NA	NA	NA	NA	NA	NA	0.0	0.5	1.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 1 5m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	2.5	0.0	1.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.7:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 1 5m</b>												
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.0	1.0	NA	NA	NA	NA	NA	NA	0.0	0.0	1.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.0	3.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 1 10m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	0.0	1.5	NA	NA	NA	NA	NA	NA	1.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.8:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 1 10m</b>												
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.5	0.0	NA	NA	NA	NA	NA	NA	0.5	0.5	1.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Staphylinidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.0	4.0	1.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 1 25m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	1.5	0.5	NA	NA	NA	NA	NA	NA	1.5	0.0	1.5
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.9:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 1 25m</b>												
Carabidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	1.0	1.0	0.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	1.5	0.0	0.0
Formicidae	0.0	2.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 1 50m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.5	2.5	0.5	NA	NA	NA	NA	NA	NA	0.0	0.5	0.5
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.5	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.10:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 1 50m</b>												
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	2.5	7.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 0m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.5
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	2.0	1.0	1.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodromidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.5
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	1.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	1.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	1.0	5.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.5
Staphylinidae	0.0	0.5	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.11:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 2 0m</b>												
Geocoridae	0.0	1.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.5	1.5	1.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 5m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	1.5	0.0	1.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	0.0	0.0
Staphylinidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0



**Appendix AE.12:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 2 5m</b>												
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 10m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.5	NA
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	2.5	NA
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	NA
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	NA
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	NA
Formicidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.13:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 2 10m</b>												
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 25m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.5	0.0	2.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	1.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	1.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	1.0	0.5	1.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.0	2.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.14:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 2 25m</b>												
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 50m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	1.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.5
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	1.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.5
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	1.5	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.15:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 3 0m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.5	0.0	1.5	NA	NA	NA	NA	NA	NA	2.5	1.0	3.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	2.5
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.0	1.5	NA	NA	NA	NA	NA	NA	2.5	0.5	5.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.5	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	0.0	0.5
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.0	0.5	4.5	NA	NA	NA	NA	NA	NA	0.0	0.0	1.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 3 5m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.16:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 3 5m</b>												
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	1.5	0.5
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	1.0	1.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	1.0	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	1.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	0.0	0.0
<b>Post 3 10m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AE.17:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 3 10m</b>												
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	1.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	1.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.0	1.0	NA	NA	NA	NA	NA	NA	5.0	1.5	0.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.5	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 3 25m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	1.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	0.5	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5	0.0

**Appendix AE.18:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 3 25m</b>												
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	1.0	0.5
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	0.5	0.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	1.5	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 3 50m</b>												
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Lycosidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0

**Appendix AE.19:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 3 50m</b>												
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Carabidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Formicidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
<b>Post 4 0m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	1.0	0.0	0.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0	1.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



**Appendix AE.20:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 4 0m</b>												
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	1.0	8.0	16.0	1.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5
Staphylinidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.5	0.0	0.0	3.5	0.0	2.5	0.5	0.0	0.0	0.0	1.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 4 5m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.5	0.0	NA	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Lycosidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.0	NA	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0

**Appendix AE.21:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 4 5m</b>												
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	NA	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Carabidae	12.0	3.5	41.5	0.0	0.5	0.0	0.5	0.0	1.0	NA	1.5	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	NA	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	NA	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Formicidae	0.0	0.0	0.0	1.0	2.5	0.5	0.0	0.0	0.0	NA	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
<b>Post 4 10m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Lycosidae	0.0	0.0	0.0	0.5	0.0	1.0	0.0	0.5	0.5	NA	0.5	NA
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	NA	0.0	NA
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA

**Appendix AE.22:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 4 10m</b>												
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Carabidae	5.0	5.5	16.0	2.5	0.5	1.0	0.0	0.5	0.5	NA	0.5	NA
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Formicidae	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	2.0	NA	0.0	NA
Mutillidae	0.0	0.0	0.0	1.0	0.0	0.0	0.5	0.0	0.0	NA	0.0	NA
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
<b>Post 4 25m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Lycosidae	0.0	0.0	1.0	0.0	0.0	0.0	0.5	0.0	0.0	NA	NA	NA
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	NA	NA	NA
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA

**Appendix AE.23:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 4 25m</b>												
Carabidae	0.5	0.5	21.5	0.0	0.5	2.0	1.0	2.0	0.5	NA	NA	NA
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Geocoridae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Formicidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
<b>Post 4 50m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Gnaphosidae	0.0	0.0	0.0	1.0	1.0	0.5	0.0	0.0	0.0	NA	NA	NA
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Lycosidae	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.5	NA	NA	NA
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	NA	NA	NA
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	NA	NA	NA
Opiliones	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Carabidae	1.0	0.0	6.5	0.0	3.5	0.5	1.0	1.0	1.0	NA	NA	NA
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA

**Appendix AE.24:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 4 50m</b>												
Histeridae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.0	0.0	NA	NA	NA
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	NA	NA	NA
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Formicidae	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	NA	NA	NA
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA
<b>Post 5 0m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.5
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.5	0.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	1.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodromidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	3.0	5.0	15.0	0.0	0.5	1.0	0.5	0.0	0.0	1.5	2.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.5

**Appendix AE.25:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 5 0m</b>												
Geocoridae	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.5	0.0	2.0	1.0	1.0	2.5	0.0	0.5	1.0	0.5	0.0
Mutillidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 5 5m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodromidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	21.5	7.0	38.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.0	0.0	0.0	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0

**Appendix AE.26:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 5 5m</b>												
Mutillidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 5 10m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	2.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodromidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	31.0	2.5	21.5	0.0	0.0	1.0	0.0	1.0	0.0	0.0	1.0	0.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	1.5	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AE.27:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 5 10m</b>												
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 5 25m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Lycosidae	1.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.5	NA
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Carabidae	16.0	0.0	18.5	0.5	1.0	1.0	0.0	0.0	0.0	0.0	0.5	NA
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Histeridae	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	NA
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Geocoridae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Formicidae	1.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5	1.0	0.0	0.0	NA
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA



**Appendix AE.28:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 5 25m</b>												
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
<b>Post 5 50m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.5	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	3.0	0.0	3.5	1.5	1.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AE.29:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 6 0m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.5	0.0	0.5	2.0	0.0	0.5	0.0	0.0
Opiliones	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	6.0	6.0	21.0	2.0	1.0	0.0	0.0	0.0	0.0	0.5	1.0	2.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	1.0	0.0	0.0	0.5	1.0	1.5	0.0	0.5	0.0	0.0	0.5
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 6 5m</b>												
Agelenidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Ctenidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0

**Appendix AE.30:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 6 5m</b>												
Dictynidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Gnaphosidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Linyphiidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Lycosidae	0.0	0.0	0.5	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Miturgidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Oxyopidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Philodramidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Salticidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Tetragnathidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Theridiidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Thomisidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.5	0.0	0.0	NA	0.0
Opiliones	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Chilopoda	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Carabidae	33.0	11.0	40.5	NA	0.0	0.0	0.0	0.5	0.5	0.0	NA	1.0
Coccinellidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Histeridae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Staphylinidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.5
Geocoridae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Formicidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.5	0.0	NA	0.0
Mutillidae	0.0	0.0	0.0	NA	0.5	0.0	0.0	0.0	0.0	0.0	NA	0.0
Scoliidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Sphecidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Vespidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Parasitic wasp	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
<b>Post 6 10m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	1.0	0.5	0.0	0.0	0.0	0.0	NA	0.5	0.0

**Appendix AE.31:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 6 10m</b>												
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Lycosidae	1.5	0.0	0.0	0.0	0.0	0.5	1.0	0.0	0.0	NA	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	NA	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Carabidae	22.5	2.0	40.5	1.0	0.0	0.0	1.5	0.5	0.0	NA	1.5	0.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Formicidae	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	NA	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
<b>Post 6 25m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Ctenidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Dictynidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Linyphiidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Lycosidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	1.0	NA

**Appendix AE.32:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 6 25m</b>												
Miturgidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Oxyopidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Philodramidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Salticidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Theridiidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Thomisidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	1.0	0.0	0.0	0.0	NA
Opiliones	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Chilopoda	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Carabidae	11.5	2.5	17.5	0.0	0.5	NA	0.0	0.0	0.0	0.0	0.0	NA
Coccinellidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Histeridae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Staphylinidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.5	NA
Geocoridae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Formicidae	1.0	1.5	0.0	0.0	0.5	NA	0.0	0.0	0.0	0.0	0.0	NA
Mutillidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.5	0.0	0.0	NA
Scoliidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Sphecidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Vespidae	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	NA
<b>Post 6 50m</b>												
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Lycosidae	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.5
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0

**Appendix AE.33:** Natural enemy taxa collected in crop fields with pitfall traps in 2013 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	1x	0x	V 1x	2x
<b>Post 6 50m</b>												
Philodromidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	NA	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Carabidae	10.5	0.5	13.0	0.0	1.5	0.0	0.0	0.0	2.0	0.0	NA	0.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Formicidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	NA	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0

**Appendix AF.:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Pre 0m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.5	1.5	0.5	0.5	1.0	0.0	0.0	0.0	0.5	1.5	5.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	1.0	1.0	2.0	0.0	0.0	0.0	0.0	1.5	0.0	4.5
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.5	0.5	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.5	0.0
Opiliones	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.5
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	1.0	6.0	0.0	0.5	1.0	1.0	1.0	0.0	0.5	0.5	5.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0
Staphylinidae	4.0	0.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5
Formicidae	2.5	1.5	0.5	19.5	6.5	3.0	58.0	1.0	0.0	1.0	4.5
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
<b>Pre 5m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AF.2:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Pre 5m</b>											
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	1.5
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	1.5	0.0	0.5
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Staphylinidae	2.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.5	3.5	0.0
Geocoridae	1.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Formicidae	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.5	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
<b>Pre 10m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5



**Appendix AF.3:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Pre 10m</b>											
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0	0.5
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	1.0	0.5	1.5	0.0	0.5	0.0	1.0	1.0	3.0	2.0	2.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.5	0.0	0.5	0.0	0.0	2.0	0.0	0.0	1.5	0.0
Staphylinidae	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Geocoridae	2.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	1.5	0.0	1.5
Formicidae	7.5	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0
Scoliidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Pre 25m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	1.5	4.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0

**Appendix AF.4:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Pre 25m</b>											
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	4.0	1.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.0	0.5
Geocoridae	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	1.0	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Pre 50m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	1.0	0.5	0.5	0.0	1.0	0.0	0.0	0.0	0.0	1.0	0.5
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	3.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AF.5:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Pre 50m</b>											
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.0	0.0	1.0	0.0	0.5	0.0	0.0	1.5	1.0	2.5	0.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	1.5	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.5	6.0
Geocoridae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 1 0m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	1.0	NA	NA	NA	NA	NA	0.0	0.5	1.5
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	2.5	0.5	1.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AF.6:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 1 0m</b>											
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	1.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.5	1.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Staphylinidae	1.0	1.0	2.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	1.0	2.5	4.5	NA	NA	NA	NA	NA	0.5	2.0	7.0
Mutillidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.5	0.5
Sphecidae	0.0	0.5	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	2.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 1 5m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.5
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Lycosidae	0.5	0.0	0.5	NA	NA	NA	NA	NA	NA	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Theriidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0

**Appendix AF.7:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 1 5m</b>											
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Carabidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	NA	1.0	0.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Staphylinidae	2.0	0.0	2.5	NA	NA	NA	NA	NA	NA	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Formicidae	0.5	3.0	2.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	0.0	0.0
<b>Post 1 10m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	1.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.5	0.0

**Appendix AF.8:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 1 10m</b>											
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.5	0.0	2.0	NA	NA	NA	NA	NA	0.0	0.5	0.0
Geocoridae	0.5	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.5	1.0	1.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 1 25m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	0.5	4.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AF.9:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 1 25m</b>											
Carabidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	1.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.5	0.5	0.5	NA	NA	NA	NA	NA	0.0	0.5	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.0	1.0	1.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 1 50m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	2.0	2.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	1.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AF.10:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 1 50m</b>											
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.0	2.5	2.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 0m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.5	0.0	1.5
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.5	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodromidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	2.5	0.0	0.5	NA	NA	NA	NA	NA	2.0	0.0	1.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	1.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0



**Appendix AF.11:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 2 0m</b>											
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	5.0	2.0	2.0	NA	NA	NA	NA	NA	2.5	1.0	1.5
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 5m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.5	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodromidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.5	0.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.5	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Formicidae	4.5	0.5	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0

**Appendix AF.12:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 2 5m</b>											
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 10m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.5	0.5
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodromidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.0	1.0	NA	NA	NA	NA	NA	1.0	0.5	0.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Formicidae	7.5	0.0	8.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AF.13:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 2 10m</b>											
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 25m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	1.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.0	0.0	1.5	NA	NA	NA	NA	NA	0.5	0.5	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.5	0.5	1.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	1.5	2.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.5	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AF.14:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 2 25m</b>											
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 2 50m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.5	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.0	1.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	1.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.5	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5

**Appendix AF.15:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 3 0m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.0	1.0	0.5	NA	NA	NA	NA	NA	1.0	0.0	1.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	1.0	0.0	3.5	NA	NA	NA	NA	NA	0.5	0.0	2.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5
Staphylinidae	1.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	1.0
Geocoridae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	3.5	1.0	1.0	NA	NA	NA	NA	NA	1.0	0.0	1.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.5	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 3 5m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AF.16:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 3 5m</b>											
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	2.0	0.0	1.5	NA	NA	NA	NA	NA	3.0	0.5	0.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	1.0	NA	NA	NA	NA	NA	0.0	0.5	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	4.5	1.0	5.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	1.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
<b>Post 3 10m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AF.17:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 3 10m</b>											
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	0.5	0.5	NA	NA	NA	NA	NA	0.0	0.0	0.5
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	1.5	0.0	1.5	NA	NA	NA	NA	NA	0.5	0.5	0.5
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	1.0	0.0	0.0
Formicidae	1.5	0.0	4.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	1.0	0.0	0.0
<b>Post 3 25m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	1.5	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0

**Appendix AF.18:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 3 25m</b>											
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	0.5	0.0	1.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	0.5	0.0	1.5	NA	NA	NA	NA	NA	0.5	0.0	1.0
Coccinellidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	1.5	2.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 3 50m</b>											
Agelenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Linyphiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Lycosidae	0.5	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0



**Appendix AF.19:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 3 50m</b>											
Philodramidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Thomisidae	1.0	0.0	1.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Carabidae	1.0	0.0	2.0	NA	NA	NA	NA	NA	0.5	0.0	0.0
Coccinellidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.5	0.0
Geocoridae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Formicidae	0.0	1.0	2.5	NA	NA	NA	NA	NA	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.5
Scoliidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Vespidae	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
Parasitic wasp	0.0	0.5	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0
<b>Post 4 0m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.5	0.5	0.0	0.0	0.5	1.0	0.0	1.0	0.0	0.0
Linyphiidae	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.5	0.0	0.5	1.0	0.5	1.0	0.0	1.0	1.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AF.20:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 4 0m</b>											
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Opiliones	0.5	0.0	0.0	2.0	0.0	1.5	2.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	2.5	5.0	3.0	3.5	0.5	1.5	0.5	0.0	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.5	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Staphylinidae	1.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.5
Geocoridae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0
Formicidae	0.5	2.0	8.0	3.0	1.5	3.0	3.5	6.5	0.0	0.0	2.5
Mutillidae	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	1.5	1.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 4 5m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Gnaphosidae	0.0	0.0	0.5	0.0	1.0	0.0	0.0	0.5	NA	0.0	NA
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Lycosidae	1.0	0.0	0.5	0.0	0.0	0.0	0.5	1.0	NA	0.0	NA
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA

**Appendix AF.21:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 4 5m</b>											
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.5	NA
Opiliones	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Chilopoda	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Carabidae	8.0	1.0	5.5	0.5	0.5	0.5	0.0	0.5	NA	0.0	NA
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	NA	0.0	NA
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Formicidae	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.5	NA	1.0	NA
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	NA	0.0	NA
Parasitic wasp	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
<b>Post 4 10m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	NA	0.0	NA
Linyphiidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Lycosidae	1.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	NA	0.0	NA
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Thomisidae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.5	NA	0.0	NA
Opiliones	1.0	0.0	2.5	0.0	0.0	0.0	0.5	0.0	NA	0.0	NA

**Appendix AF.22:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 4 10m</b>											
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Chilopoda	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Carabidae	2.0	2.0	3.0	1.0	0.0	0.0	0.5	0.0	NA	1.5	NA
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	NA	NA	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Formicidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	NA	0.0	NA
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
Parasitic wasp	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	NA	0.0	NA
<b>Post 4 25m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	NA	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Lycosidae	1.5	0.5	1.0	0.0	0.0	0.5	0.0	0.0	NA	1.5	1.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Thomisidae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.0	NA	0.0	0.0
Opiliones	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	NA	0.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0

**Appendix AF.23:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 4 25m</b>											
Carabidae	2.0	0.5	7.0	0.0	0.0	0.5	1.0	0.0	NA	0.0	0.5
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	NA	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Formicidae	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Parasitic wasp	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
<b>Post 4 50m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Linyphiidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Lycosidae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	NA	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Carabidae	0.5	1.0	0.5	0.5	0.0	0.0	0.0	0.0	NA	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0

**Appendix AF.24:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 4 50m</b>											
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	NA	0.0	0.0
Staphylinidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Formicidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Parasitic wasp	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
<b>Post 5 0m</b>											
Agelenidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	NA	0.5	0.0	0.5	0.0	0.0	0.0	0.0
Linyphiidae	0.5	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.5	1.0	0.0	NA	1.5	1.0	0.0	1.0	0.0	0.0	1.0
Miturgidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	NA	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Opiliones	0.0	1.0	1.0	NA	2.0	1.0	0.0	1.0	0.0	0.5	0.5
Pseudoscorpiones	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	7.5	17.0	13.5	NA	1.5	0.0	0.0	0.0	0.0	0.0	1.0
Coccinellidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	NA	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	NA	1.0	0.0	0.0	0.0	0.0	0.0	1.0

**Appendix AF.25:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 5 0m</b>											
Geocoridae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	1.5	0.5	1.0	NA	2.5	9.0	0.0	1.0	0.0	0.0	0.5
Mutillidae	0.0	0.0	0.0	NA	0.0	1.0	0.0	0.0	0.0	0.5	0.0
Scoliidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.5	NA	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.5	0.0	1.0	NA	1.0	2.0	1.0	0.0	0.0	0.0	0.5
<b>Post 5 5m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.5	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	9.0	1.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	1.5	0.0	0.0	1.0	0.0	1.5	0.0	0.0	0.0	0.5	0.0

**Appendix AF.26:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 5 5m</b>											
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 5 10m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.5	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.0	0.5	0.5	1.0	0.0	0.0	0.5	0.0	0.5	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodromidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.5	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	1.0	2.5	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.5	0.0	1.0	0.0	0.0	0.5	2.5	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



**Appendix AF.27:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 5 10m</b>											
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 5 25m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.5	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.5	0.0	11.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.0	0.5	0.0	0.0	0.5	2.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AF.28:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 5 25m</b>											
Parasitic wasp	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 5 50m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.5	0.0	4.0	0.0	0.5	0.0	1.0	0.0	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5

**Appendix AF.29:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 6 0m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.5	0.5	0.0	1.0	0.5	1.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.5	2.5	2.0	1.0	1.0	1.5	0.5	0.0	0.0	0.0	0.5
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.5	0.0	1.0	0.5	1.0	1.0	1.0	1.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	4.5	14.0	9.0	0.0	1.5	1.0	0.5	0.0	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Formicidae	0.0	0.5	2.0	2.0	1.0	0.0	3.5	2.0	0.0	0.0	0.5
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	1.5	2.0	1.0	0.0	0.0	0.0	1.5	1.0	0.0	0.0	0.0
<b>Post 6 5m</b>											
Agelenidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AF.30:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6 5m</b>											
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	0.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	1.0	0.5	0.5	1.0	1.5	0.0	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	3.5	2.5	8.5	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.5	0.0	0.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.5	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 6 10m</b>											
Agelenidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AF.31:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 6 10m</b>											
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	1.0	0.5	2.5	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.5	0.0	0.5	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	3.5	2.5	6.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	1.0	0.0	1.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	1.5	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
<b>Post 6 25m</b>											
Agelenidae	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AF.32:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	H			S1			S2		V		
	0x	1x	2x	0x	1x	1x	0x	1x	0x	1x	2x
<b>Post 6 25m</b>											
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Opiliones	0.0	0.0	0.0	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	0.5	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	0.5	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Post 6 50m</b>											
Agelenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ctenidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dictynidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gnaphosidae	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0
Linyphiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lycosidae	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Miturgidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oxyopidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AF.33:** Natural enemy taxa collected in crop fields with pitfall traps in 2014 and used in community analysis for each site by treatment, timing, and distance into crop field

Arthropod taxa	0x	H 1x	2x	0x	S1 1x	1x	0x	S2 1x	0x	V 1x	2x
<b>Post 6 50m</b>											
Philodramidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salticidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetragnathidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Theridiidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thomisidae	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Opiliones	0.0	0.5	0.0	0.0	1.0	0.5	0.0	1.5	0.0	0.0	0.0
Pseudoscorpiones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chilopoda	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carabidae	1.0	1.0	1.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Coccinellidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Histeridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staphylinidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geocoridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Formicidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mutillidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sphecidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vespidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parasitic wasp	1.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Appendix AG:** The R 3.0.1 code used to compare natural enemy community composition in crop and prairie hay fields for yellow sticky cards.

```
library(vegan)
YSC <- read.csv(file.choose(), header=T, as.is=T)
YSC.dist <- vegdist(YSC[,X:YY], method = "bray")
YSC.test <- adonis(YSC.dist ~ YSC$Site + YSC$Timing + YSC$Treatment + YSC$Distance +
YSC$Trap, perm = 999)

print(YSC.test)
```



**Appendix AH:** The R 3.0.1 code used to compare natural enemy community composition in crop and prairie hay fields for pitfall traps.

```
library(vegan)
pitfall <- read.csv(file.choose(), header=T, as.is=T)
pitfall.dist <- vegdist(pitfall[,X:YY], method = "bray")
pitfall.test <- adonis(pitfall.dist ~ pitfall$Site + pitfall$Timing + pitfall$Treatment + pitfall$Distance +
pitfall$Trap, perm = 999)

print(pitfall.test)
```

**Appendix A1:** The R 3.0.1 code used to compare natural enemy community composition in prairie hay fields for a sweep net.

```
library(vegan)
```

```
SN <- read.csv(file.choose(), header=T, as.is=T)
```

```
SN.dist <- vegdist(SN[,X:YY], method = "bray")
```

```
SN.test <- adonis(SN.dist ~ SN$Site + SN$Timing + SN$Treatment + SN$Distance + SN$Trap, perm = 999)
```

```
print(SN.test)
```

**Appendix AJ:** The R 3.0.1 code used to compare bee community composition in prairie hay fields for blue cross vane traps.

```
library(vegan)
BCVT <- read.csv(file.choose(), header=T, as.is=T)
BCVT.dist <- vegdist(BCVT[,X:YY], method = "bray")
BCVT.test <- adonis(BCVT.dist ~ BCVT$Site + BCVT$Timing + BCVT$Treatment + BCVT$Distance
+ BCVT$Trap, perm = 999)

print(BCVT.test)
```

**Appendix AK:** The R 3.0.1 code used to compare bee community composition in prairie hay fields for surveyed plants.

```
library(vegan)
plant <- read.csv(file.choose(), header=T, as.is=T)
plant.dist <- vegdist(plant[,X:YY], method = "bray")
plant.test <- adonis(plant.dist ~ plant $Site + plant $Timing + plant $Treatment + plant $Distance + plant $Trap, perm = 999)

print(plant.test)
```

**Appendix AL:** Prairie hay yield data for 2013 and SAS 9.2 code used.

```
data hay_yield;
```

```
input Site $ Treatment $ Sample $ Yield_Metric;
```

```
cards;
```

H	2x	1	9829.4885
H	2x	2	6783.7315
H	2x	3	4153.305
H	2x	4	9552.6015
H	2x	5	11490.8105
V	2x	1	5122.4095
V	2x	2	5676.1835
V	2x	3	4707.079
V	2x	4	8306.61
V	2x	5	4014.8615
V	1x	1	5122.4095
V	1x	2	11075.48
V	1x	3	4707.079
V	1x	4	7337.5055
V	1x	5	6506.8445
H	1x	1	2630.4265
H	1x	2	4014.8615
H	1x	3	4707.079
H	1x	4	4845.5225
H	1x	5	10660.1495
S1	1x	1	9414.158
S1	1x	2	5676.1835
S1	1x	3	7752.836
S1	1x	4	9552.6015
S1	1x	5	8721.9405
S1	1x	1	5537.74
S1	1x	2	8445.0535
S1	1x	3	4845.5225
S1	1x	4	10383.2625
S1	1x	5	7891.2795
S2	1x	1	10521.706
S2	1x	2	9829.4885
S2	1x	3	7752.836
S2	1x	4	6645.288
S2	1x	5	7475.949
S2	1x	1	5676.1835
S2	1x	2	8860.384
S2	1x	3	6229.9575
S2	1x	4	4153.305
S2	1x	5	1245.9915

```
;
```

**Appendix AL.2:** Prairie hay yield data for 2013 and SAS 9.2 code used.

```
proc npar1way wilcoxon;  
class Treatment;  
var Yield_Metric;  
run;  
Quit;
```

**Appendix AM:** Prairie hay yield data for 2014 and SAS 9.2 code used.

```
data hay_yield;
input Site $ Treatment $ Sample $ Yield_Metric;
cards;
H      2x      1      9829.4885
H      2x      2      10244.819
H      2x      3      11490.8105
H      2x      4      9552.6015
H      2x      5      11490.8105
V      2x      1      7614.3925
V      2x      2      5814.627
V      2x      3      6368.401
V      2x      4      8583.497
V      2x      5      6229.9575
V      1x      1      5953.0705
V      1x      2      9552.6015
V      1x      3      6783.7315
V      1x      4      5122.4095
V      1x      5      8029.723
H      1x      1      3461.0875
H      1x      2      10383.2625
H      1x      3      6645.288
H      1x      4      10383.2625
H      1x      5      5814.627
S1     1x      1      2491.983
S1     1x      2      2353.5395
S1     1x      3      9137.271
S1     1x      4      4707.079
S1     1x      5      3322.644
S1     1x      1      9829.4885
S1     1x      2      3737.9745
S1     1x      3      3045.757
S1     1x      4      6368.401
S1     1x      5      9275.7145
S2     1x      1      2630.4265
S2     1x      2      9829.4885
S2     1x      3      6091.514
S2     1x      4      2491.983
S2     1x      5      1799.7655
;
proc npar1way wilcoxon;
class Treatment;
var Yield_Metric;
run;
Quit;
```

**Appendix AN:** Prairie hay yield data for 2013/2014 combined and SAS 9.2 code used.

```
data hay_yield;
data hay_yield;
input Year $ Site $ Treatment $ Sample $ Yield_Metric;
cards;
2013   H      2x      1      9829.4885
2013   H      2x      2      6783.7315
2013   H      2x      3      4153.305
2013   H      2x      4      9552.6015
2013   H      2x      5      11490.8105
2013   V      2x      1      5122.4095
2013   V      2x      2      5676.1835
2013   V      2x      3      4707.079
2013   V      2x      4      8306.61
2013   V      2x      5      4014.8615
2013   V      1x      1      5122.4095
2013   V      1x      2      11075.48
2013   V      1x      3      4707.079
2013   V      1x      4      7337.5055
2013   V      1x      5      6506.8445
2013   H      1x      1      2630.4265
2013   H      1x      2      4014.8615
2013   H      1x      3      4707.079
2013   H      1x      4      4845.5225
2013   H      1x      5      10660.1495
2014   H      2x      1      9829.4885
2014   H      2x      2      10244.819
2014   H      2x      3      11490.8105
2014   H      2x      4      9552.6015
2014   H      2x      5      11490.8105
2014   V      2x      1      7614.3925
2014   V      2x      2      5814.627
2014   V      2x      3      6368.401
2014   V      2x      4      8583.497
2014   V      2x      5      6229.9575
2014   V      1x      1      5953.0705
2014   V      1x      2      9552.6015
2014   V      1x      3      6783.7315
2014   V      1x      4      5122.4095
2014   V      1x      5      8029.723
2014   H      1x      1      3461.0875
2014   H      1x      2      10383.2625
2014   H      1x      3      6645.288
2014   H      1x      4      10383.2625
2014   H      1x      5      5814.627
2014   S1     1x      1      2491.983
2014   S1     1x      2      2353.5395
2014   S1     1x      3      9137.271
```



**Appendix AN:** Prairie hay yield data for 2013/2014 combined and SAS 9.2 code used.

2014	S1	1x	4	4707.079
2014	S1	1x	5	3322.644
2014	S1	1x	1	9829.4885
2014	S1	1x	2	3737.9745
2014	S1	1x	3	3045.757
2014	S1	1x	4	6368.401
2014	S1	1x	5	9275.7145
2014	S2	1x	1	2630.4265
2014	S2	1x	2	9829.4885
2014	S2	1x	3	6091.514
2014	S2	1x	4	2491.983
2014	S2	1x	5	1799.7655

;

proc npar1way wilcoxon;

class Treatment;

var Yield\_Metric;

run;

Quit;

**Appendix AO:** Prairie hay Crude Protein for 2013/2014 combined and SAS 9.2 code used.

```

data hay_yield;
input Year $ Site $ Treatment $ Protein;
cards;
2013   H       2x      11.3
2013   H       2x      8.5
2013   H       1x      8
2013   H       2x      8.5
2013   S1      1x      9.2
2013   S1      1x      8.4
2013   S2      1x      6.3
2013   V       2x      9.9
2013   V       1x      7.2
2013   V       2x     10.7
2014   H       2x      9.9
2014   H       1x      7.8
2014   V       2x      8
2014   V       2x      9.3
2014   V       1x      7.5
2014   V       2x      9.3
;
proc glm;
class Year Site Treatment;
model Protein = Year Site Treatment;
lsmeans Treatment/stderr pdiff;
run;
Quit;

```

**Appendix AP:** Prairie hay Acid Detergent Fiber for 2013/2014 combined and SAS 9.2 code used.

```
data hay_yield;
input Year $ Site $ Treatment $ ADF;
cards;
2013   H      2x      38.1
2013   H      2x      51.7
2013   H      1x      43.6
2013   H      2x      45.9
2013   S1     1x      40.4
2013   S1     1x      40.8
2013   S2     1x      39.1
2013   V      2x      39.9
2013   V      1x      37.5
2013   V      2x      24.9
2014   H      2x      37.1
2014   H      1x      46.6
2014   V      2x      41.2
2014   V      2x      40.1
2014   V      1x      38.4
2014   V      2x      37
;
proc npar1way wilcoxon;
class Treatment;
var ADF;
run;
Quit;
```

**Appendix AQ:** Prairie hay Total Digestible Nutrients for 2013/2014 combined and SAS 9.2 code used.

```

data hay_yield;
input Year $ Site $ Treatment $ TDN;
cards;
2013   H      2x      60.4
2013   H      2x      45.2
2013   H      1x      54.2
2013   H      2x      51.6
2013   S1     1x      57.7
2013   S1     1x      57.3
2013   S2     1x      59.2
2013   V      2x      58.3
2013   V      1x      61
2013   V      2x      75
2014   H      2x      61.5
2014   H      1x      50.9
2014   V      2x      56.8
2014   V      2x      58.1
2014   V      1x      60
2014   V      2x      61.6
;
proc npar1way wilcoxon;
class Treatment;
var TDN;
run;
Quit;

```