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## *Crop Watch* No. 2004-8, May 7, 2004

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# CROP WATCH

University of Nebraska Cooperative Extension  
Institute of Agriculture and Natural Resources

UNIVERSITY OF  
**Nebraska**  
Lincoln

No. 2004-8, May 7, 2004

## Eastern conditions beneficial for planting; western Nebraska facing continued drought

Warm conditions, interrupted by brief cold snaps, during the last three weeks have resulted in significant planting activity across the three largest U.S. corn producing states. As of May 2, 52% of the Nebraska corn crop had been planted, compared to 38% last year and the five-year average of 34%. In Iowa, 74% of the crop was in the ground, compared to 48% last year and the five-year average of 43%. Illinois reported the greatest percentage of corn planted with 82%, compared to 62% last year and the five-year average of 47%.

If normal temperatures are recorded during the corn production season, the crop should reach maturity a full 10-14 days ahead of schedule. Reproduction could begin as early as the first week of July. If temperatures remain above normal during the next 30-45 days, pollination and crop maturity could be

**O**n Monday, May 3, Governor Mike Johanns declared Nebraska to be in a drought emergency. This measure activates funding for drought-related programs and provides state government the means to help communities with drought-related emergencies.

moved ahead another 7-10 days.

Soil moisture conditions across Nebraska are at both ends of the spectrum. In east central and southeast Nebraska, field surveys indicate full soil profiles down to four feet, with most fields having

moisture down to 5 feet. This is a significant improvement over the last few springs when producers were counting on May rains to make up for significant deficits incurred during the fall-spring period. Northeast Nebraska has fairly adequate moisture with five to six inches of estimated moisture in the top five feet of profile. If May precipitation is normal, full soil profiles can be expected by June 1.

The real soil moisture problems continue to occur throughout western and southwest Nebraska, where some areas are facing their fifth straight year of drought. The U.S. drought monitor currently rates

*(Continued on page 71)*

## Emerging corn likely safe from recent low temperatures

Corn planting conditions this spring have been remarkable. Many producers in south central Nebraska have completed corn planting and are well into planting soybeans. Unfortunately, the cold night temperatures the mornings of May 2 and 3 in many parts of the state were low enough to affect emerged corn plants. (NASS estimated that approximately 7% of the state's corn was emerged.)

Lows on Sunday morning dipped to 19°F at Alliance and 20°F at Chadron, according to National Weather Service data. Columbus

had a low of 27°F on Monday morning.

While these temperatures are concerning, I'm not too worried about the effect on emerged corn for several reasons:

1. The amount of corn emerged (and thus susceptible) across the state is low, especially in the areas with the coldest temperatures.

2. The growing point for corn is below the soil surface until the sixth leaf has emerged. The earliest emerged plants probably had only three to four leaves last weekend.

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## Ag briefs

**John Wilson, Extension educator in Burt County:** Frost nipped alfalfa and early emerged corn Monday morning, but should not cause extensive problems as the corn growing point was below the soil. We had a significant catch of black cutworm moths April 30. Area farmers should start scouting for cutworm feeding approximately 300 GDDs after the moth catch.

**Ralph Anderson, former Extension educator in Buffalo County, now with Ward Laboratories in Kearney:** Corn planting in central Nebraska has progressed fairly well. First planting corn can be "rowed" easily now. We have not seen any severe crusting problems, but producers need to check their fields.

Many farmers are wrapping up corn planting and preparing to plant soybeans. Sunday night's low temperatures reminded us not to get too anxious. We certainly haven't had excess moisture, but we probably have an adequate amount to germinate the crop and activate the herbicides.

Wheat is looking fairly clean so far, but reports of disease in the south and the strong south winds may change that rapidly.

We have seen some yellow streaks in wheat, but tissue tests on those we checked indicated sulfur deficiency, rather than nitrogen.

**Paul Hay, Extension educator in Gage County:** It is unlikely that the 27-28°F frost on May 3 did any damage to our southeast Nebraska wheat crop which is in the boot stage. Corn was nipped back but will recover fine. Some alfalfa weevil pressure, but it's light, and some powdery mildew on wheat. Producers are well into soybean planting this week.

**Terry Gompert, Extension educator in Knox County:** We are now 5 inches short of rain this season. In spite of that the grass, alfalfa and oats look good except

where cutworms were not controlled. This is the first year that I can remember when oats were killed by cutworms. Cutworms have even been found in native range and thousands of acres of alfalfa have been treated the past three weeks.

Corn planting is 60% complete and soybean planting has started. Pastures started out well but growth has slowed in the past week. Cool temperatures and lack of rain are starting to take a toll.

**Jennifer Chaky, Extension educator, UNL Pest and Plant Disease Clinic:** Following is a list of some of the injury we diagnosed in the clinic in April:

Alfalfa - chemical injury (Kearney County), spring black stem and soil compaction (Saunders County); Wheat - soil borne wheat mosaic virus (Clay and Gage counties), wheat spindle streak mosaic virus (Gage County), wheat streak mosaic virus (Chase County), Nitrogen deficiency (Chase County) and Tan Spot (Red Willow County). In addition to the virus problems observed on several wheat samples, powdery mildew has been found, especially on southeast Nebraska wheat.

Check *CropWatch* on the Web for insect photos and daily soil temperature, GDD and ET updates.

**[cropwatch.unl.edu](http://cropwatch.unl.edu)**

**David Keith, Extension entomologist:** When you're working outside this spring and summer, remember to check for ticks. This time of year, they're everywhere. When entering tick-infested areas, wear long sleeves and trousers and tuck pant legs into socks. When you return home, have someone examine you for ticks, especially around the ears and nape of the neck, use a fine-toothed comb, and take a hot, soapy shower.

Repellents also can help. Treat the outside of clothing lightly and use as little as possible directly on skin. Too many people overdo such applications. High amounts of highly concentrated DEET products can be hazardous to sensitive individuals, small children and older adults. Using products with lower DEET concentrations will help. Permethrin is another choice for treating exterior clothing.

## CROP WATCH

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Lisa Jasa, Editor; Email: [ljasa1@unl.edu](mailto:ljasa1@unl.edu)

## Soil moisture *(Continued from page 69)*

much of the Panhandle and southwest Nebraska as being in an "extreme drought" while another large area of northwest and north central Nebraska is described as being in a "severe drought."

There was significant precipitation April 19-25 with almost all locations reporting at least one inch of moisture and many reporting more than two inches. This moisture may provide some short-term relief for the wheat crop and enhance planting; however, rainfall will need to remain timely and generous throughout the remainder of the growing season to aid moisture-starved soil profiles. Almost all locations across western Nebraska have less than four inches of available moisture in the soil profile, with most having less than two inches.

There has been an unusual swing in extreme temperatures during the last 30 days across the state. Temperatures have pushed into the low 90s, while lows have flirted with the upper teens. It doesn't appear that freezing temperatures are in the forecast during the next 10 days, but record heat remains a strong possibility. Temperatures were expected to easily reach into the 90s this week, with isolated 100°F readings possible. Temperatures are expected to move into the 80s and possibly low 90s next week.

The large ridge across the western United States has played a key role in these warm conditions. Snowpack levels continue to rapidly deteriorate and could be virtually non-existent by late May. As of now, the ridge has shown the ability to move eastward and flatten out. As the Pacific Northwest trough moves eastward, it is rapidly replaced by the strong ridging pattern.

This trough-ridge pattern is giving the state a shot at significant moisture for a 2-4 day period, followed by 10-14 days of dryness. If this pattern continues through the summer, good yields can be expected and it will aid western irrigators.

However, based on the strength of the western ridge this early in the year, conditions are looking eerily similar to 2002 across the western third of the continental United States.

Our concern is that the ridge may become permanently established by early June, leading to

## Low temps/corn *(Continued from page 69)*

3. The short-term forecast calls for a warming trend with lots of sun. Many problems related to the May 28 frost in 1992 were related to the cool, damp weather that followed the freeze. Corn was very slow to recover and some did not survive.

While most corn likely escaped long-term damage, growers should be prepared to monitor fields for delayed growth or plant injury over the next week, especially in areas where soil and air temperatures didn't warm up as quickly as expected after the lows.

Dr. Bob Nielsen, Extension agronomist at Purdue University, cautions that non-emerged corn plants may be affected by cold soil temperatures. He considers this more of a problem than the effect on emerged plants. Here is a quote from his news article:

"... lethal cold temperatures (28°F or less) can penetrate the upper inch or two of soil, especially dry surface soils, and kill plant tissue directly, including coleoptiles and growing points. Non-lethal injury by cold temperatures may cause deformed elongation of the mesocotyl or physical damage to the

coleoptile in non-emerged seedlings, resulting in the proverbial 'cork-screw' symptom and subsequent leafing out underground."

**Allen Dutcher**  
State Climatologist

".... Given the risk of frost or chilling injury to young corn; it would behoove growers to monitor early planted fields over the next week to determine whether such injury has occurred and whether replanting may be warranted."

For more information on corkscrewed corn roots, visit Dr. Nielsen's Web site, the Corny News Network, at <http://www.agry.purdue.edu/ext/corn/news/articles.04/Cork-screw-0501.html>.

**Roger W. Elmore**  
Extension Crops Specialist

## Wheat too escapes significant damage

Although there was some leaf tip burning in wheat as a result of the cold weather last week, the Panhandle wheat crop was not at a particularly susceptible stage for damage. Moisture that preceded the cold snap also lessened the potential negative effects of the freeze.

Some small isolated areas may see damage such as stem breakage later in the year as grain begins to develop in the head, but little other damage is expected. Over the next couple of weeks, wheat will begin to head and flower and then subfreezing temperatures would be much more devastating to yield.

**Drew Lyon, Extension Dryland Cropping Specialist**

**L**ow temperatures reported to the High Plains Climate Center Sunday or Monday:

Alliance	23	Mead	25
Arthur	27	Concord	27
Dickens	27	Scottsbluff	26
Gordon	27	Sidney	26
Halsey	27	Clay Center	26
Lincoln	26	York	28

# When April-May showers don't develop, what happens to preemergence treatments?

While some areas of the state were fortunate enough to receive rainfall last week, other areas have not received any significant rainfall for 10 days. Producers in these areas are now asking questions about their preemergence herbicides, especially "How much rain is needed to incorporate preemergence herbicides?" and "How long can they remain on the soil surface without rainfall?"

For preemergence herbicides to prevent weeds from surviving, they need to be incorporated into the soil with rainfall or mechanical incorporation. Often, herbicides may be applied to soil with residue on the surface, blocking the spray from soil contact. This herbicide will be ineffective until it is moved to the soil. Most Preemergence herbicides require 0.5 in of rainfall or greater for adequate incorporation. With mechanical incorporation, soil moisture must still be adequate for herbicide uptake and activity.

How long the herbicide can remain on the soil surface before incorporation and still remain adequately active depends on several factors, primarily the type of herbicide and the weather conditions. For example, Prowl is moderately volatile and should be incorporated within seven days before activity is lost. Hot temperatures and high winds may reduce this time. Many corn preemergence herbicides such as Dual, Bicep, Harness, Surpass, Balance, Frontier, and Atrazine are much less volatile and can remain on the soil surface longer without loss of activity. Under cool weather conditions, these herbicides can remain on the soil surface for two or more weeks before incorporation without significant loss. If rainfall has not occurred by the third week, other incorporation measures may be needed. Again, temperatures in the

80s with high winds will reduce this time.

If dry weather follows the application of a surface applied herbicide, weeds may emerge even though the herbicide is on the surface. If the weeds are more than 1 inch tall before rainfall occurs, most surface-applied herbicides will not control them.

For the most part, producers do not need to worry about incorporation of preemergence herbicides immediately after application. If you are in a dry situation, choose a herbicide that can remain unincorporated for two or more weeks and hope for rain.

**Brady Kappler, Extension Educator – Weed Science**

## Research: Soybean row spacing affects velvetleaf competitiveness

Velvetleaf, also known as a button-weed, is an important annual weed in row crops throughout the Midwest. Its fast growth rate allows it to compete with crops for growth limiting resources such as light, nutrients and water. Velvetleaf competitiveness, however, can be reduced by modifying cultural practices such as planting crops in narrow rows. A narrow row spacing allows the canopy to close earlier than in wide rows, resulting in greater shading of the weeds.

Other factors, such as the time of velvetleaf emergence relative to crop emergence, can also influence the outcome of crop and weed competition. It's logical to expect that later emerging weeds will be less competitive than weeds emerging with the crop. This knowledge of weed relative emergence can be used when making management decisions.

We conducted field studies in eastern Nebraska at two locations in 2002 and again in 2003 to determine the influence of soybean row spacing and relative time of weed emergence on velvetleaf and soybean growth and competition. This study is part of Shawn Hock's research for his Master's Degree.

Soybean was planted in 7.5- and 30-inch rows. Velvetleaf was hand

planted at soybean planting (VP), emergence (VE), and 1<sup>st</sup> trifoliate (V1) stage. Observations were made throughout the growing season to determine the effects of row spacing and relative emergence on growth and development of both the crop and the weed.

Results from this study showed that velvetleaf produced much less dry matter and had about 60% less leaf area in narrow rows than in wide rows. Because the weed produced less dry matter and leaf area, it takes fewer resources from the crop. Velvetleaf emerging at the cotyledon stage (VC) of soybean produced 60% more dry matter than the velvetleaf that emerged at the V1 (1<sup>st</sup> trifoliate) stage of crop.

Soybean yields were higher in the narrow rows and when velvetleaf emerged later in the season. Soybean grown in 7.5-inch rows yielded 4 bushels more per acre than soybeans in 30-inch rows. Soybean yields were also reduced by 47%, 38%, and 15% when grown with velvetleaf emerging at the VC, V1, and V3 soybean stages, respectively.

A practical implication of this study is that planting narrow row soybeans will increase the crop competitiveness against weeds,

*(Continued on page 75)*

## Reducing ragweed in pastures

Ragweed growth exploded in some pastures the past couple years. Timely spring rains encouraged germination and seedling growth and sunny dry falls helped seed development. Add to this the fact that drought weakens competition and ragweed has gotten a strong foothold.

Both common ragweed, which is an annual, and western ragweed, which is a perennial, can be held in check using similar methods. Still, common ragweed is controlled more easily with grazing management or herbicides than western ragweed.

Research and observations show that ragweed problems are worst in pastures that fail to maintain grass competition with a full leaf canopy in late May through late June. If you had ragweed problems in recent years, look for tiny plants or seedlings underneath your grass during the next couple of weeks. Heavy grazing or haying during this time opens up the grass sward, allowing seedlings and small plants to grow rapidly.

Any management practice that develops and maintains a dense canopy at this time helps reduce problems with ragweed. These practices can include fertilizing to increase grass growth, seeding to thicken stands, and most importantly, avoiding heavy grazing in areas where ragweed has been a problem.

If you do graze heavily or cut hay, one quart of 2,4-D or Grazon after grazing or cutting gives good control of ragweed seedlings and small plants. If you miss opportunities for spring control, shredding in September can reduce seed production.

It takes time and a well-planned approach to control ragweed, but with good grazing, some spraying, and timely shredding it can be done.

**Bruce Anderson**  
Extension Forage Specialist

## Cutting healthy alfalfa early has advantages, but also less yield

The first alfalfa cutting often is the most important cutting of the year. It usually produces the most yield and its forage quality changes fastest from day to day. Many growers plan to cut soon after first blooms appear. But weather can cause long delays and sometimes alfalfa doesn't bloom very aggressively during spring. Plus, waiting until alfalfa begins to bloom often results in hay that is too low in quality for dairy use.

So what about cutting before plants bloom — or even before they form buds? Is this a realistic option?

Being ready to cut healthy, vigorously growing alfalfa after it gets about fifteen inches tall has several advantages. Weather might be better than later in spring. You begin the harvest sequence early rather than waiting until all the

alfalfa is ready at once. Some insect and disease problems can be reduced by early harvest. Most importantly, feed value can be very high. Plus, second cutting probably will be ready before summer heat lowers its forage quality.

One disadvantage, however, is that yield will be lower from this early cut, although much of it will be made up in later harvests. Also, regrowth for second harvest probably will be slower than if alfalfa had been cut at a more advanced stage of growth, especially if your alfalfa experienced winter injury this year.

And you must be sure to allow a longer than normal recovery after either the first or the second cutting if you want to maintain long-term stands.

**Bruce Anderson**  
Extension Forage Specialist

## Alfalfa damage variable

Freezing temperatures in alfalfa fields last weekend will have varying effects on the crop, depending on age of the alfalfa and extent of the cold temperatures.

Alfalfa seeded last spring or earlier (established) will recover, but rate of recovery will depend on amount of injury. Wait a couple days to determine how much, if any, of the plant tops were killed. Plant tops that remain green and upright will keep growing as normal. Handle these fields as you normally would manage them. However, fields with many plants that have the top 4 inches or more wilted, beginning to dry out, and/or becoming discolored will stop growing. Eventually, new shoots will develop -- some from branches on the main stem and some from the crown. Regrowth initiation can be delayed considerably, though, unless plants are harvested. If the entire field or substantial low sections of the field are injured, harvest will hasten recovery.

Alfalfa seeded last summer or fall will react similarly to established alfalfa except these young plants generally have fewer crown buds developed and available for rapid regrowth. Removal of existing plant material can put much stress on these plants; some may die and others will be susceptible to any subsequent stress such as insects, hail, and diseases. Usually it will be better to leave these plants uncut so they can use remaining green, healthy leaves to maintain plant health. Be patient for them to begin new growth.

Most seedlings this spring should be safe. Young seedlings maintain cold tolerance well until they reach about the third trifoliate leaf stage of growth. Also, heat from the soil often protects them from brief, cold temperatures. Seedlings that were frozen so that all trifoliate leaves are discolored and dying will not regrow.

**Bruce Anderson**  
Extension Forage Specialist

# Scout corn at emergence for insect pests

As corn begins to emerge, it is important to scout it frequently for damage from a variety of insect pests. This is true regardless of whether it was treated with an insecticide at planting time (liquid, granular, or seed treatment) or whether it is a *Bt* corn hybrid. High populations of insects may overwhelm the protection provided by these controls.

Some early season insects to watch for include various cutworm species, and, in southeast Nebraska, the southern corn leaf beetle. Cutworms can cause serious damage to corn in the first couple weeks after emergence, so it is important to scout fields for damage. Several species of cutworms attack corn. The severity and the area affected will vary greatly,

depending on species involved, previous crop history, and weather conditions. Cutworms that attack corn can be divided into two general categories based on seasonal life cycles:

- 1) Black cutworms which do not overwinter in Nebraska, and
- 2) Dingy, claybacked, darksided, sandhills, pale western, and other species of cutworms, which overwinter as partially grown larvae in the soil.

Since black cutworms do not overwinter in Nebraska, they are dependent on spring weather conditions, primarily prevailing southerly winds, to bring them into our state. Nebraska is on the western edge of the black cutworm's area of influence. They are rarely found west of the 100th meridian. Because of their cutting habits and the possibility that large numbers can be transported to Nebraska if favorable weather conditions occur, they have the most potential to cause a widespread problem.

Light traps and pheromone traps have been used to monitor the flight patterns and populations of black cutworms. Remember, the presence of moths in a trap only indicates potential problems and is no guarantee that extensive damage will occur. Trap counts are more useful in alerting growers and consultants as to when to begin scouting.

The weather of the last few weeks has been dominated by cool fronts moving in from the north and northwest. These conditions are **NOT** favorable for black cutworm establishment; however this week's warmer temperature may be more favorable. Corn planted into heavy residue, fields with winter annuals, or fields planted into spring-killed alfalfa (that may attract egg-laying moths) have a slightly higher potential for cutworms. When weeds are destroyed mechanically or by herbicides, they will feed on the

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## Avoid cutworm 'insurance'

### Use rescue treatments in corn

Over the past 10 years or so, we have seen a growing percentage of farmers applying preplant or preemergence insecticides to corn for soil cutworm control. This year the trend may increase due to:

- 1) higher crop prices,
- 2) lower insecticide costs due to increased availability of effective generics, and
- 3) a "worry hangover" from the army cutworm problems seen earlier this year in alfalfa and wheat.

The combination of these factors has led to an increase in these "insurance" treatments.

There are several problems with these preplant or preemergence applications, however. First, there is no reliable way to determine if these pre treatments are needed. Over the years, the vast majority of corn fields have not needed treatment for cutworms. This then means that most of the expense for the treatments, regardless of how cheap they are, is unnecessary.

With seed-attacking insects like wireworms, there is no good rescue treatment, however, cutworms can be detected and treated to prevent damage if necessary. The cutworm complex in corn does not include the army cutworm, so despite the large amount of activity in alfalfa

and wheat this spring, it has no direct correlation to what may happen in corn. The only possible connection is the indication that the cutworm species that overwinter as larvae had good survival conditions this year.

Also, products are being aggressively marketed as providing very long residual activity. Under ideal conditions, some materials may give 14, 21 or even more days of residual activity; however, in Nebraska with varying temperatures and soil conditions, a 7- to 10-day residual is more realistic.

The bottom line is that even if you treated for cutworms earlier, you still need to be scouting to make sure that black cutworms didn't come in after the earlier treatments wore off. Even if light traps detect large flights of black cutworms, there is no way to know if they will choose your field to infest or bypass it for "greener pastures".

If cutworms are present, they can cause serious damage to corn in the first few weeks after emergence so scout early and well and apply rescue treatments for cutworms as needed.

**Keith Jarvi, Extension Assistant  
Integrated Pest Management  
Haskell Ag Lab, NEREC**



# Scout southeast NE for southern corn leaf beetle

In the past few years the southern corn leaf beetle has injured seedling corn in southeastern Nebraska. This insect also has reportedly damaged corn periodically in northeast and north central Kansas and, in recent years, in Missouri, Iowa and Illinois. Given the relatively mild winter, it is expected to be a problem in parts of southeastern Nebraska again this year. As corn emerges, be alert for potential damage.

The adult corn leaf beetle overwinters in sheltered areas and becomes active in April. In addition to corn it may feed on weeds, including cocklebur. The adults are about 0.20 inch long, grey to dark brown and are often covered with soil particles, making them difficult to see. They hide in the soil during the day and are difficult to find. They feed on the stems of corn seedlings and the edges of leaves, producing a notched appearance. If abundant they may cause severe damage to seedling corn.

While some basic facts are known about the southern corn leaf beetle's life cycle, there has been little biological research since the early 1900s. This beetle has one generation a year. The beetle lays eggs in the soil around the base of corn plants. The larvae hatch out in 6-10 days and feed on corn roots for about 10 weeks. Larvae pupate in the soil and adults emerge from mid July to August. Adults feed for a short while and then in late summer seek overwintering sites.

Economic thresholds have not been established for this insect, but should be similar to those for cutworm injury (3-5% cut plants). The same insecticides labeled for postemergence use against cutworms would be appropriate for use on southern corn leaf beetles. Based on efficacy trials and field reports, the pyrethroid insecticides and Lorsban 4E and Furadan 4F would be expected to provide good control. (For rates and further details, see the NU Department of Entomology Web site at <http://entomology.unl.edu>)

Seed treated with Poncho, Gaucho or Cruiser insecticides would provide early season suppression of damage from this insect.

**Bob Wright**  
Extension Entomologist

## Cutworms *(Continued from page 74)*

newly emerging corn. Because most damage from cutworms occurs roughly in the first 7-10 days after emergence, growers should be on the lookout.

Cutworms that overwinter as larvae generally prefer to lay eggs in the fall in green vegetation such as small grain stubble, legumes, rye, and pasture. The eggs hatch and the larvae feed on available vegetation before overwintering. In spring, after the previous crop is removed and the corn emerges, the cutworms will transfer their feeding activity to the corn. Recent experience has been that corn planted into alfalfa that has been killed in the spring has a greater potential for cutworm problems.

Tillage has minimal effect on cutworm populations. If fields are tilled before black cutworms migrate, they may limit egg-laying in those fields. Cutworms already in the field may suffer some mortality by mechanical action, but there is no guarantee that tillage by itself will eliminate cutworm problems. Many cutworm problems have occurred in tilled fields.

It is extremely rare to experience cutworm problems in continuous corn. Corn stubble is not a preferred egg-laying site. Potential problems in continuous corn may result from the previous year's late season flush

of weeds, an interseeding of a fall cover crop such as rye, or a flush of winter annuals this spring, which can attract egg-laying moths.

### Scouting and rescue treatments

Remember that early detection of a problem is essential because most of the cutting occurs within sevendays of plant emergence. Generally, a rescue treatment should be considered if 5% or more (an average of 1 plant or more in a set of 20) cutting is observed and the worms are one inch or less in length.

Rescue treatments are effective in controlling soil cutworms. Ambush 2E, Asana XL, Baythroid, Lorsban 4E, Mustang Max, Warrior and Pounce 3.2EC (or generics) will all give satisfactory control as postemergence sprays. If the soil is dry or crusted, rotary hoeing immediately before or after Lorsban application may enhance control. The other insecticides are pyrethroids and should not be incorporated. See a full list of products and rates at our website: <http://entomology.unl.edu/instabls/cutworms.htm>.

For more information see *Corn Cutworms*, NebGuide G93-1153.

**Robert Wright**  
Extension Entomologist  
**Keith Jarvi**, Extension Assistant  
Integrated Pest Management  
Northeast REC

## Velvetleaf

*(Continued from page 72)*

including velvetleaf. Also, early season field scouting of weed emergence patterns relative to the crop growth stage can help determine management strategies. For example, earlier emerging weeds will require earlier weed removal.

This study was partially funded by a grant from the North Central Regional Weed Science Committee.

**Stevan Knezevic**  
Extension Weeds Specialist  
Haskell Ag Lab, NEREC



# 42 sites offer pesticide container recycling

Farmers and other pesticide applicators can recycle empty plastic pesticide containers at 42 collection sites across Nebraska this year.

"We have already collected nearly 558 tons of recyclable plastic containers heading into this 13th year of the program," said Larry Schulze, University of Nebraska Cooperative Extension pesticide coordinator. Last year alone, the program recycled more than 83.5 tons of plastic containers.

The program helps users recycle empty plastic pesticide containers and crop protection drums. Schulze coordinates the program with the help of extension educators statewide through the university's Institute of Agriculture and Natural Resources.

"We recycle an increasing quantity of plastic through this program each year, indicating a strong commitment to environmental stewardship by pesticide applicators and agricultural dealers," Schulze said.

Collected containers are turned into products such as shipping pallets, drain tile, dimension lumber and parking lot tire bumpers. The program accepts pressure-rinsed or triple-rinsed 1- and 2.5-gallon plastic pesticide containers. They must be dry and clean, inside and out. Caps, labels and slipcover plastic labels must be removed since they cannot be recycled in this program.

Twenty-two of this year's 42 collection sites accept 15- and 30-gallon plastic crop protection chemical, crop oil and adjuvant drums. These drums must be thoroughly rinsed before delivery to collection sites and should not be cut or opened. Mini-bulk, saddle tanks and nurse tanks, which often are made of fiberglass or plastics not compatible with the recycling program, are not accepted.

Before delivering containers to a collection site, pesticide applicators should: clean, rinse and drain containers and drums, and put the rinsate back in the spray tank; remove and properly dispose of booklets and caps from containers; and remove and properly dispose of plastic shrink-wrap labels from containers. Glued-on paper labels can be left on containers.

More information on the program and collection sites is available on the Web at the UNL Pesticide Education Center Web site at <http://PestEd.unl.edu/recycle.htm>. A national coalition of agrichemical manufacturers funds the program through the Agricultural Container Recycling Council.

Of this year's collection sites, nine collect year-around, 16 collect May through August, 15 collect on specific dates and two collect by appointment only. Sites are listed alphabetically by county. Those accepting 15- and 30-gallon plastic drums are noted.

## Year-around inspection, collection sites:

**Buffalo:** Kearney Recycling Center, Kearney, Monday through Friday 7 a.m. to noon, 1 to 4 p.m.

**Burt:** Tekamah City Compactor, Tekamah, Tuesday 2 to 5 p.m., Thursday 2 to 6 p.m.

**Cedar:** Hartington Recycling Center, Hartington, Tuesday 11 a.m. to 4 p.m., Wednesday 1 to 5 p.m., Thursday 3 to 7 p.m., Friday 2 to 5 p.m., Saturday 8 a.m. to noon.

**Cuming:** West Point Transfer Station, West Point, Monday through Friday 8 a.m. to noon, 1 to 5 p.m., Saturday 8 a.m. to 4 p.m.; accepts drums.

**Dawson:** All Points Cooperative, Lexington and Overton, Monday through Friday 8 a.m. to 5 p.m.; both accept drums.

**Lincoln:** North Platte Transfer Station, North Platte, Monday through Friday 7 a.m. to 4 p.m., except holidays.

**Scotts Bluff:** Gering Landfill, Gering, Monday through Friday 7

a.m. to noon, 1 to 2:30 p.m.; accepts drums.

**Washington:** Blair Recycling Center, Blair, Saturday 8 a.m. to noon; accepts drums.

## May-August inspection, collection sites:

**Antelope:** Central Farmers Cooperative, Brunswick, Clearwater, Elgin, Neligh and Tilden.

**Butler:** Frontier Co-op (Yanka), David City.

**Dixon:** Precision Agronomy, Newcastle; Northeast Co-op, Ponca; both accept drums.

**Dodge:** Frontier Cooperative-Fremont, Fremont; accepts drums.

**Gage:** Hasenkamp Agricultural Co. and Southeast Nebraska Cooperative, Beatrice; both accept drums.

**Jefferson:** Farmers Co-op Elevator Co., Plymouth; accepts drums.

**Pawnee:** Searcey Grain Co., Elk Creek; accepts drums.

**Sarpy:** Farmers Union Co-op, Gretna.

**Saunders:** Cedar Ridge Spraying, Ashland; Frontier Cooperative, Mead.

## Sites collecting, inspecting pesticide containers on specific days:

**Adams:** Heartland Cooperative, Juniata, Aug. 20, 8 a.m. to 5 p.m.; Aug. 21, 8 a.m. to noon; accepts drums.

**Boone:** Country Partners Co-op, Cedar Rapids, May through July 15, Monday through Friday 8 a.m. to 4 p.m.

**Clay:** Heartland Co-op, Sutton, Aug. 20, 8 a.m. to 5 p.m.; Aug. 21, 8 a.m. to noon; accepts drums.

**Colfax:** Schuyler Cooperative, Richland, May 10, June 12, July 10, Aug. 14, 8 a.m. to noon. Husker Co-op Fertilizer, Schuyler, May 10, June 12, July 10, Aug. 14, 8 a.m. to noon.

**Dakota:** Northeast Cooperative, Emerson, June and July, Wednesday 9:30 to 10:30 a.m. Northeast Cooperative, South Sioux City, June and July, Wednesday 11 a.m. to noon. Both sites accept drums.

**Hamilton:** Aurora Cooperative Elevator, Aurora, July through Aug. 16, Friday 8 a.m. to 5 p.m. Heartland Cooperative, Giltner, Aug. 13, 8 a.m. to 5 p.m.; Aug. 14, 8 a.m. to noon. Both sites accept drums.

**Kearney:** Heartland Coop, Minden, Aug. 9, 8 a.m. to 5 p.m. and Aug. 10, 8

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## Recycling containers

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a.m. to noon; accepts drums.

**Lancaster:** Farmers Cooperative Co., Bennet, July 23, 9 a.m. to noon. Farmers Cooperative Co., Waverly, July 9, 9 a.m. to noon. Both sites accept drums.

**Saunders:** Otte Oil and Propane, Wahoo, Sept. 10, 9 a.m. to noon.

**Thurston:** Mother Earth Recycling Center, Macy, June and July, Wednesday 10 a.m. to noon; accepts drums.

**Wayne:** Precision Agronomy, Wayne, Aug. 6 and Aug. 20, 8 a.m. to noon.

**Sites collecting, inspecting pesticide containers by appointment only:**

**Knox:** Precision Agronomy, Bloomfield, (402) 373-4755.

**Lancaster:** Lancaster County Extension Office, Lincoln, (402) 441-7180.

**Steven Ress, Communications Coordinator, UNL Water Center**

## Export seminar explores opportunities in Japanese market

Representatives of the Japan External Trade Organization will be in Scottsbluff Tuesday, May 11, to present a free seminar on export opportunities in the Japanese market and resources and programs to assist Nebraska businesses expanding into the global marketplace. A special presentation on Japan, Nebraska's third largest trading partner, will be included.

The presentation will be held in the University of Nebraska Panhandle Research and Extension Center's Bluestem Room. Registration is from 10:30 to 11 a.m., with the presentation from 11 a.m. to 2 p.m.

Pre-registration is due by Friday, May 7. Fax your name, company, address, and phone number to Susan Rouch, Nebraska Department of Economic Development, at 402-471-3365 or call 402-471-4668.

## In sunflowers

### Clearfield system now available

Clearfield sunflower hybrids will be readily available for the first time in 2004. These hybrids have a tolerance to the herbicide Beyond™ and are used in the Clearfield sunflower system. Beyond™, an imazamox herbicide, was labeled for use in Clearfield sunflowers in 2003.

Clearfield sunflower hybrids contain a gene that confers tolerance, not resistance, to Beyond. Some slight crop injury (leaf yellowing and plant stunting) may be observed following Beyond herbicide application to Clearfield sunflower hybrids, especially where overapplication occurs as in spray overlaps or field ends. Injured plants often recover quickly. Non-Clearfield hybrids will be killed if treated with Beyond.

Clearfield sunflower were developed through a traditional breeding technique known as mutagenesis and are not considered to be genetically modified organisms. Beyond herbicide is applied early postemergence to sunflower with two to eight leaves at a rate of 4 oz per acre. Weeds should be actively growing at the time of application and broadleaf weeds should be less than 3 inches tall. Grass weeds should have no more than four to five leaves. A nonionic surfactant and nitrogen based fertilizer must be added to the spray solution for optimum weed control.

It is recommended that a soil-applied grass herbicide, such as Prowl® or Dual Magnum®, be applied before Beyond is applied. Beyond will control many broadleaf weeds that are troublesome in Nebraska sunflower fields, including pigweed, kochia, Russian thistle, and nightshade; however, Beyond is an ALS-inhibitor and will not effectively control ALS-resistant kochia or Russian thistle. There is also some concern about the risk of transferring the gene conferring tolerance to Beyond from the commercial sunflower hybrid to weedy sunflower

species such as common or prairie sunflower. This technology should be avoided in fields where weedy sunflower species are present.

In a dryland field study conducted at the High Plains Ag Lab near Sidney in 2001, all treatments containing Beyond herbicide provided excellent pigweed (tumble and redroot) and witchgrass control. Some injury was observed with all Beyond treatments. Most sunflower plants grew out of the injury within four weeks and no yield loss was observed.

In an irrigated study conducted near Scottsbluff in 2003, postemergence applications of Beyond caused the sunflower growing point to turn a light yellow, but plants recovered. Even though Beyond herbicide caused early season crop injury, sunflowers had recovered by late June. Weed populations were dense and consisted of common lambsquarters, hairy nightshade, redroot pigweed, stinkgrass, and common purslane.

Preemergence application of Spartan plus Prowl herbicides provided excellent control of all weeds except hairy nightshade. Postemergence application of Beyond herbicide effectively controlled redroot pigweed and hairy nightshade. Combining a preemergence Prowl application with a postemergence Beyond application effectively controlled the weed spectrum present in this trial.

Although Beyond herbicide breaks down in the soil more quickly than some imidazolinone and sulfonylurea herbicides, there are still some crop rotation restrictions that need to be followed. Be sure to check the label when planning.

**Drew J. Lyon**  
Extension Dryland Cropping  
Systems Specialist  
**Robert G. Wilson**  
Extension Weed Specialist

# When insects influence weed control timing

Each year producers face the challenge of controlling insects and weeds and the resulting damage while limiting their out-of-pocket expenses. In order to help producers make reasonable judgments concerning pest control and pesticide use, scientists developed the concept of integrated pest management. This strategy uses a combination of cultural, mechanical, biological, genetic and chemical methods for effective and economical pest control.

## York, Hamilton counties top corn producers in 2003

York and Hamilton counties led Nebraska in corn production in 2003 with 34,972,800 and 34,891,200 total harvested bushels, respectively, according to an April 29 report from the USDA Nebraska Agricultural Statistics Service. Top producing counties include:

York	34,972,800
Hamilton	34,891,200
Hall	34,646,200
Dawson	32,199,800
Buffalo	31,782,200
Phelps	31,109,800
Custer	30,457,100
Lincoln	29,888,400
Adams	27,763,000
Holt	27,712,800
Kearney	27,610,100
Antelope	26,951,600
Platte	26,703,600

To see all the corn production data by county and district and by planted acres, harvested acres and harvested production, visit the NASS Web site at <http://www.nass.usda.gov> County estimates for other Nebraska crops are available at <http://www.nass.usda.gov:81/ipedb/>

In most crop production fields there are many species of weeds and insects with different life cycles and survival mechanisms. It's not likely that they can be managed by a single control measure. In reality, weeds and insects interact and affect not only each other and the crop, but also the efficacy of their respective management tactics. For example, insect-induced defoliation can significantly delay soybean canopy development and as a result, provide more sunlight for weeds to grow and compete with the crop. This can directly affect subsequent weed management plans. Learning how insects and weeds interact with each other and the crop is essential in developing and integrating pest management strategies.

We are beginning the second year of a study of the interactions between weeds, insects and soybean. The main objective is to determine the critical time for weed removal as influenced by three levels of simulated insect defoliation -- 0%, 30%, and 60%. This study was conducted in summer 2003 and will be repeated in 2004 as part of Travis Gustafson's research for his Master's Degree. It is a collaborative project with the weed science and entomology programs at the Haskell Agricultural Laboratory near Concord..

Preliminary data suggest that the insect damage to the soybean leaf area indeed resulted in a need for earlier weed management. For example, with no insect damage to the soybean canopy, weeds could remain in the crop up to the V4 stage (third trifoliate) or about 20 days after crop emergence without significantly affecting the yields. However, at the 30% and 60% defoliation level, weeds should be removed by the V3 (17 days) and V1 (10 days) stages, respectively.

From a practical standpoint, this indicates that soybeans with 30%-

60% leaf defoliation from insect damage actually do have a shorter weed control window and potentially fewer weed control options. This suggests that soybean leaf damage from bean leaf beetle feeding, for example, affects not only the final yield but also the timing of when weed control needs to be initiated in the growing season in order to prevent further yield losses.

This research also shows that the producer may have another tool to fight weeds in his soybean field -- a good insecticide. If there is a particularly bad infestation of bean leaf beetle, spraying an insecticide to control the bean leaf beetle may actually widen the herbicide application window and increase weed control options for the producer.

The Nebraska Soybean Board helped fund this project.

**Stevan Knezevic**  
Extension Weeds Specialist  
Haskell Ag Lab, NEREC

## Weed Science Tour dates set for June

Mark your calendar for the 2004 University of Nebraska Weed Science Field Days. These field days will provide a hands-on look at University herbicide trials. While most participants are from the agricultural chemical industry, the tour is free and open to the public. Individuals may attend all or part of it. The itinerary is:

**June 16, Wednesday, 3 p.m.**  
(MDT), Sidney, High Plains Agricultural Laboratory

**June 17, Thursday, 8:30 a.m.**  
(MDT), Scottsbluff, Panhandle Research and Extension Center

**June 22, Tuesday, 9 a.m.,** Clay Center, South Central Ag Lab

**June 23, Wednesday, 9 a.m.,** Lincoln, Havelock Research Farm

**June 24, Thursday, 1 p.m.,** Concord, Haskell Ag Lab