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CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

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No. 2004-3, April 2, 2004

In University field trials:

Skip-row planting dryland corn fares well

Skip-row planting of dryland corn can improve yields in western Nebraska's dry conditions, University of Nebraska field trials show. Skip-row planting involves leaving some rows unplanted so more water will be available to the crop later in the season.

In 2003 at North Platte, skip-row dryland corn produced 32% higher yields than 30-inch row dryland corn. In these field trials corn was planted in 30-inch rows with two rows left and two removed on July 2. Another treatment where every third row was removed on July 2 produced 17% better yields than the conventionally planted corn field. The treatments yielded 54 and 48 bushels per acre, respectively, compared with 41 bushels per acre for the conventional field.

Skip-row planting is beneficial in dry conditions because it conserves available water early in the season in the unplanted rows. Since plant roots can't reach and use the water early in the season, more water is available to the plant in July and August, typically the state's driest months. If drought continues, dryland farmers in eastern Nebraska may want to look at the practice.

Skip-row planting of corn wouldn't be feasible had it not been for the release of Roundup Ready corn. Roundup Ready corn allows

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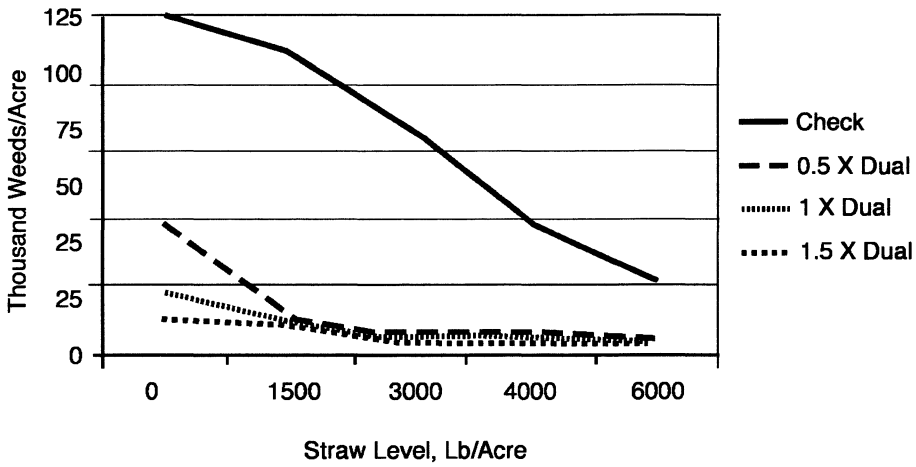

Figure 1. Weed density with various levels of winter wheat straw and herbicides. (*Source: G. Wicks, University of Nebraska WCREC*)

Focus on Corn

Inside

Using starter fertilizer to boost eastern Nebraska corn production

Starter fertilizer may be a practice that some no-till corn producers in eastern Nebraska may want to consider adding to their systems. Starter fertilizer is fertilizer applied in addition to the required amount for optimal crop growth. It shouldn't be confused with band application of a phosphorus fertilizer at planting on a low phosphorus soil.

Past research in Nebraska on medium- and fine-textured soils did not find the use of starter fertilizer to be economical, but this research was conducted primarily under tilled conditions. Results of some

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Ag briefs

Paul Hay, Extension Educator in Gage County: Recent rains in southeast Nebraska have helped activate the wheat and alfalfa herbicides as well as dry fertilizers that had been applied. Monsanto and Pioneer have agreed to fund 50 soybean cyst nematode samples collected by Extension personnel in the Missouri River Valley and river bottom and nearby creek valleys from Rulo to Peru. We've collected 14 so far and will report results in *CropWatch* as they become available.

Steve Pritchard, Extension Educator in Boone and Nance counties: There's good topsoil moisture, but limited subsoil moisture. Cutworms are a major problem in many alfalfa fields, as evidenced by delayed greenup. Extensive spraying is underway. Producers are starting to do some field work - fertilizer applications and disking. Many producers are preparing fields for seeding alfalfa, oats and other small grains.

Duane Lienemann, Extension Educator in Clay and Webster counties: We're seeing quite a few army cutworms in wheat, especially in southern Webster County from Guide Rock to Red Cloud with some reported in the center of the county. We also are finding some in alfalfa. Wheat levels have been above the threshold in some areas and fields have been treated; most alfalfa levels have been below the threshold.

This week areas of the county received 0.5 to 1.5 inches of rain, helping the winter wheat to quickly add density and fill in between rows. The moisture also is helping June grass, cheatgrass and other annual bromes get a good start in pastures. Some producers are planning to use flash or rotational grazing to control these early invaders.

As we enter what would be our fourth season of drought, producers are planning accordingly. There has been some talk of overseeding older alfalfa stands with Italian rye grass so it could be grazed, if necessary, or hayed. This would help provide some rest for pastures.

While some producers applied fertilizer just before the rains, others are delaying application due to current high prices and a concern about the potential for drought. If dry conditions prevail, they don't want to incur an unnecessary expense and create the potential for high nitrates in cornstalks they might need to graze later.

We've seen an increase in the number of wheat acres planted. Winter annuals, such as pennycress, are visible in wheat and alfalfa and should be treated.

Some no-till farmers, especially on irrigated acres, are looking at high tonnage levels of residue and hitting the ridges with roller and flail choppers to break down residue.

USDA reports prospective plantings

Nebraska producers expect to increase acreage planted to soybeans and winter wheat ('03 planting) while decreasing corn, hay, sorghum, oat, dry edible bean, sunflower, and sugar beet acreage, according to a March 31 report from USDA Nebraska Agricultural Statistics Service .

Nebraska **corn** growers expect to plant 8.0 million acres, down 1% from last year. Of these acres, 41% is expected to be planted to insect resistant (Bt) varieties, 15% to herbicide resistant varieties and 8% to stacked gene varieties, compared to 36%, 11% and 5%, respectively a year ago.

Expected **soybean** plantings of 4.65 million acres in 2004 would be the third highest on record, up 2% from last year, but 6% below the 2001 record high. Of these acres, 89% are expected to be planted to herbicide resistant varieties, up from 86%.

Sorghum growers expect to plant 550,000 acres, 17% less than in 2003, but 22% more than in 2002. **Hay** acreage for harvest, at 3.1 million, would be down 2% from last year. **Oat** planting intentions, at 155,000 acres, are down 30% from 2003. **Dry edible bean** producers intend to plant 145,000 acres, down 6% from last year. **Sugar beet** plantings of 45,000 acres would be down slightly from 2003, while **sunflower** intentions, at 55,000 acres, are down 17%.

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Skip row *(Continued from page 21)*

for the use of glyphosate, a relatively inexpensive nonselective translocated herbicide. Roundup Ready Corn 2 adds to the practice by allowing a higher rate of glyphosate and applications later in the season. Not all glyphosate brands may be labeled for Roundup Ready Corn 2. Roundup Ready 2 corn has the NK-603 event. Seed bags may not have the RR 2 logo but all seed identified as GA-21, the old event on Roundup Ready corn, has to be identified as such. See *Table 1*.

Good weed control is essential when using the skip-row planting system. Planting into good winter wheat stubble will reduce weed competition (see *Figure 1*). With conventional systems, the crop canopy reduces weeds through shading; however, with one or two rows missing, weeds get the light necessary for germination and growth.

Skip-row planting provides protection from wind erosion: if plants dry up, little is left behind to protect the soil. However, they'll be more residue where water is available, helping protect the soil from wind erosion.

One may even consider planting in the skip rows the next year and making the previously planted rows the skip rows. This would result in continuous cropping. Research is planned to evaluate this practice.

For the trials, fields were conventionally planted and plants in the skip rows were removed July 2. It is estimated that three additional inches of soil water would have been available if the plant two rows, skip two rows system had been used from the start of the season.

In a plant-two, skip-two system every row would be

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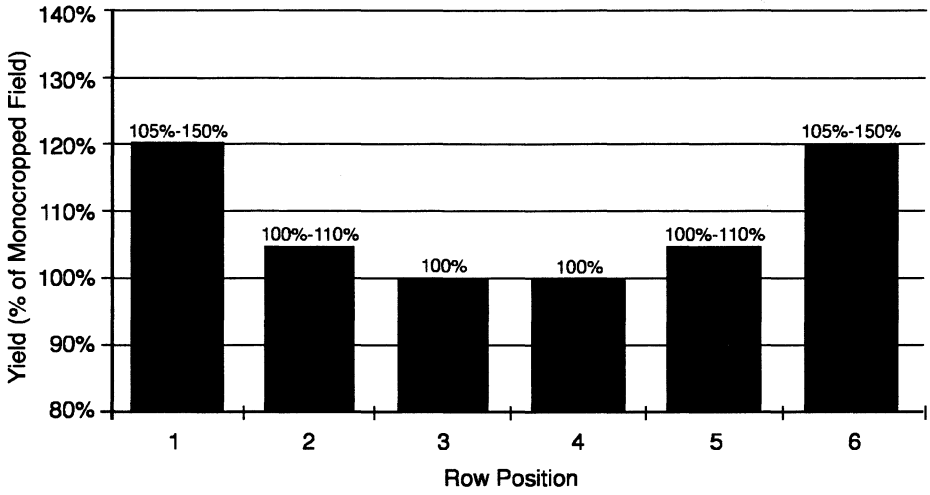

Figure 2. Effect of corn row position (for a six-row strip) on corn yield, expressed as a percent of yields typically observed with monocrop corn management. The number on top of each column indicates the range of yields (compared with monocropped yields) observed at each position. *(Source: CRP-17, Iowa State University.)*

Table 1. Roundup WeatherMax use rate on Roundup Ready Corn and Roundup Ready Corn 2.

Event	RR GA-21	RR 2 NK-603
Maximum rate per application*	22 oz.	32 oz.
Maximum total in crop	44 oz.	64 oz.
Maximum corn height	30 inch*	48 inch*

*Use drops with corn greater than 24 inches.

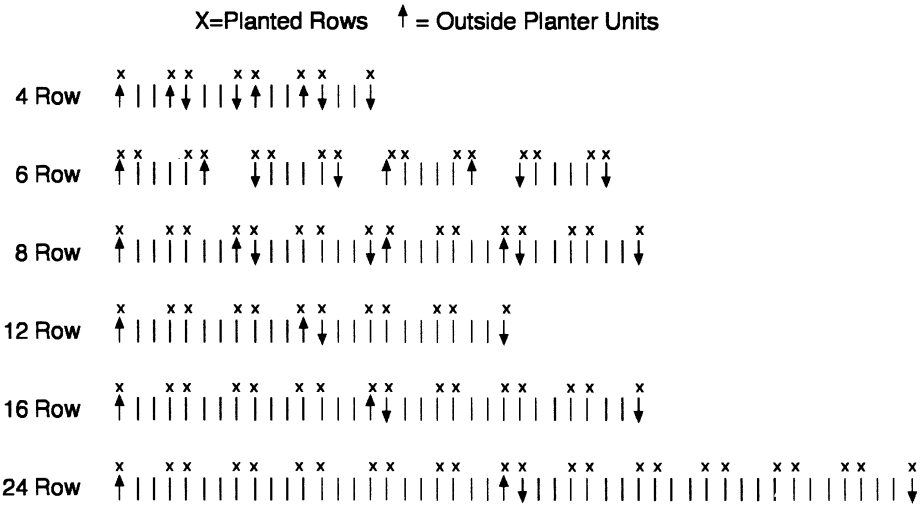

Figure 3. Skip row patterns in plant 2-skip 2 configuration for several planter widths.

Corn seedling diseases and protective fungicides

Should wet and/or cool weather continue into planting, corn stands could be affected by seedling disease. Damage to the seed or mesocotyl while the seedling is still strongly dependent on the seed for nourishment will typically result in severe stunting and/or seedling death. The critical growth stage for this type of injury is usually before the V2 stage. Anytime corn is developing slowly, it is at greater risk of such damage. The two main seedling disease problems in Nebraska corn are *Fusarium* and *Pythium.*

Skip row *(Continued from page 23)*

an outside row. In Iowa State Research corn rows bordering soybean (*see Figure 2*) produced 20% more on average than rows 3 and 4. We try for 0.5 lb ears for maximum production, but these outside rows would weigh 0.6 lbs. Would rows with no crop next to them produce even higher ear weights under optimum conditions?

Table 2 lists ear weights and yields for a plant-two skip-two row system with several plant populations. *Figure 3* illustrates how skip-row planting might be achieved with various sized planters. Only with a six-row planter, which effectively become an eight-row planter, do you benefit from planter size. With the six-row planter you need to extend the markers to skip over the two rows not planted. When possible, GPS should be used for guidance rather than a disc marker which plants weed seed.

In summary, to make the skip-row system work:

1 Use no-till.

2 Maintain good crop residue cover and distribution. Wheat straw works best.

3 Plant Roundup Ready Corn 2.

4 Select a corn hybrid which tolerates stress and flex-style ear

5 Use a two-thirds to full rate of soil-applied herbicide preplant or preemergence.

6 Be ready to apply post applications to control weeds as needed.

Remember to check with your Farm Service Agency and Crop Insurance personnel before making any changes in crops or cropping practices.

Bob Klein, Extension Cropping Systems Specialist West Central REC

Skip-row research

This summer UNL agronomists will launch a broad ag research project to assess the potential for skip row planting of dryland corn in Nebraska.

Sites and researchers will include: Haskell Ag Lab, Concord, Charles Shapiro and Stevan Knezevic; ARDC at Mead, Steve Mason; Lincoln, Lenis Nelson; South Central Ag Lab, Clay Center, Roger Elmore; McCook and North Platte, Bob Klein; Sidney, Drew Lyon; and Scottsbluff, David Baltensperger. Stay tuned next year for the results.

Fusarium

If conditions are cool and without excessive moisture, *Fusarium* will be our main seedling disease problem. *Fusarium* symptoms tend to be tan-to-reddish brown lesions that cause the root or mesocotyl to shrivel. When infections move into the crown the crown tissue will be darker than a healthy crown which is light to tan. The decayed crown cannot support the moisture needs of the plant after the weather warms up so plants will suddenly wilt and die. A damaged crown can lead to later problems as the fungus develops and spreads as stalk rot.

Pythium

If conditions are wet and cool, *Pythium* will be our main problem for seedling disease. Wet soil conditions and soils with high clay content that do not drain well are favorable for *Pythium*. Several species of *Pythium* can rot the seed

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Table 2. Yield possibilities for skip-row corn in plant-two, skip-two configuration.

Plant 2 rows	*Stand in 2 rows planted*	*Stand in 4 rows (only 2 planted)*	*Ear wt/lb yield/bu*	*Ear wt/lb yield/bu*	*Ear wt/lb yield/bu*	*Earwt/lb yield/bu*
20,000	18,000	9,000	0.5 = 64	0.6 = 77	0.62 = 80	0.7 = 90
24,450	22,000	11,000	0.5 = 79	0.6 = 94	0.64 = 100	0.7 = 110
28,900	26,000	13,000	0.5 = 93	0.6 = 111	0.65 = 120	0.7 = 130
33,333	30,000	15,000	0.5 = 107	0.6 = 129	0.65 = 140	0.7 = 1.50

Starter fertilizer

(Continued from page 21)

studies in other states show a higher probability of corn response to nitrogen, phosphorus, and sulfur in starter fertilizer under no-till conditions. Some studies, but not all, find the placement method to be important, and there is some indication that soil type and topographic position could be important.

Fourteen trials were conducted in eastern Nebraska in 2002 and 2003 to determine corn response to starter fertilizer under no-till conditions. Eight trial sites were on farmers' fields and three each were conducted at the Haskell Ag Lab near Concord and the Agricultural Research and Development Center near Mead. Sites were selected to represent diverse soils and topographic positions.

Eight starter fertilizer treatments were compared:

- no starter applied
- 20 lb N + 20 lb P_2O applied 2 inches to the side of the row and 2 inches deep (2x2)
- 20 lb N + 20 lb P_2O applied over the row
- 10 lb N + 10 lb P_2O applied in the furrow
- 20 lb N + 20 lb P_2O + 10 lb S applied 2x2
- 20 lb N + 20 lb P_2O + 10 lb S applied over the row
- 10 lb N + 10 lb P_2O + 5 lb S applied in the furrow
- 10 lb N + 10 lb P_2O + 5 lb S in-furrow application with sulfur supplied from ammonium thiosulfate (ATS) rather than ammonium sulfate which was the sulfur source in the other treatments.

Results

Soil pH ranged from 5.4 to 6.8 (*Table 1*). Soil organic matter ranged from 1.9% to 3.3%. Bray 1 phosphorus ranged from low to very high and was higher in the 0- to 2-inch depth (median = 35 ppm) than in the 2- to 8-inch depth (median = 9.6 ppm). The potassium level was high at all sites.

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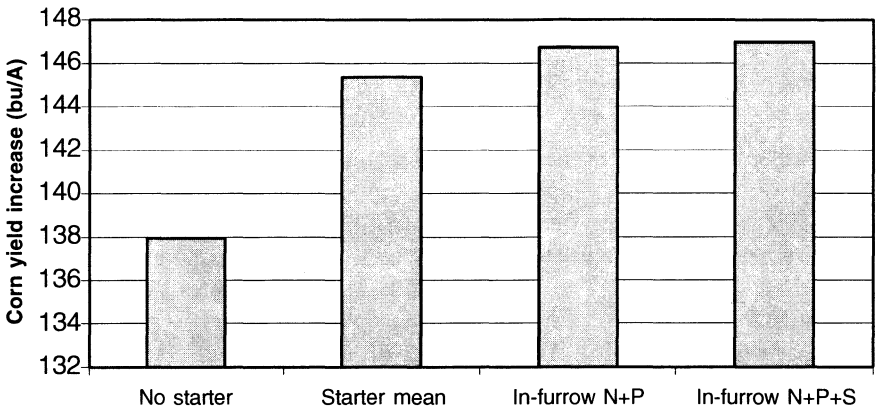

Figure 1. Corn yield response to starter fertilizer.

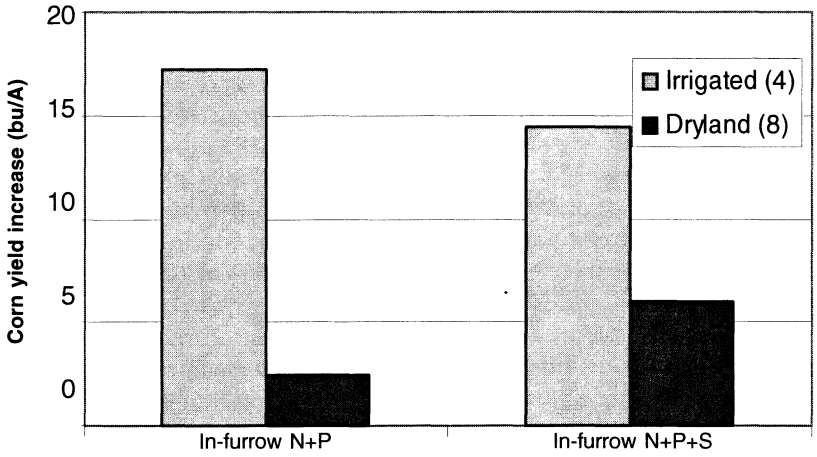

Figure 2. Corn yield response to starter fertilizer for irrigated and dryland conditions.

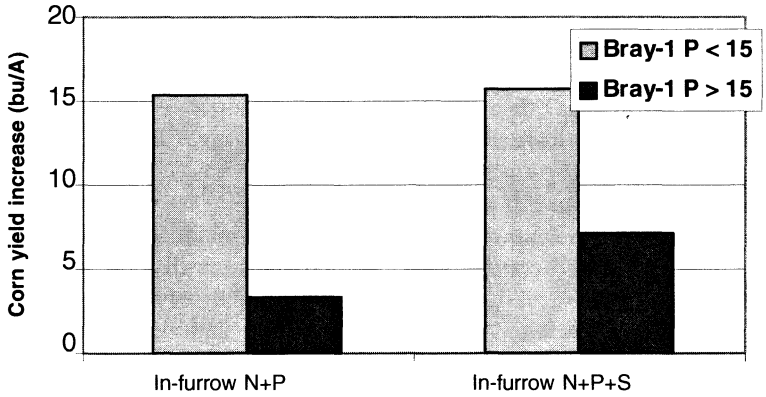

Figure 3. Corn yield response to starter fertilizer at different soil P levels.

Table 1. Soil test results for 15 trial sites for the evaluation of corn response to starter fertilizer treatments.

	pH	SOM	K	P, Bray 1, ppm	
		%	ppm	0-2 in	2-8 in
Minimum	5.4	1.9	194	4.5	3.1
Maximum	6.8	3.3	621	78.5	33.6
Median	6.0	2.5	312	35.0	9.6

No-tillers may want to consider row-cleaning

No-till corn producers may have an opportunity to increase corn yields by cleaning soybean residues from the row before or at planting.

Results from studies on the effects of removing crop residue from the row area in no-till systems have been inconsistent in the Corn Belt. In most studies, the crop residue was removed at planting time. In Iowa, removal of residue from a six-inch band resulted in increased corn plant emergence, but only occasionally increased yield. In southern Minnesota, corn yields increased an average of five bushels per acre with row cleaning, but the benefit of row cleaning was greatest when no starter fertilizer was applied.

As part of the Nebraska Soybean and Feed Grains Profitability Project (*http://on-farmresearch.unl.edu*), Jerry Mulliken has conducted replicated trials on his farm in Dodge County for six years to evaluate the effect of row cleaning on corn yield following soybean. For five years, he cleaned a six-inch band 14 days before planting when pre-plant herbicide was applied. In 2003, he compared row cleaning two weeks before planting with row cleaning at planting.

Mulliken cleans the row space with a notched or tined furrow opener running just below the residue layer, while disturbing less than the top inch of soil. He estimates the added cost of row cleaning to be $3 per acre. The average gain in corn yield with row cleaning has been five bushels per acre. Mulliken conducted the trials with 4-6 gallons of 10-34-0 applied in the seed furrow to both the strips with and without row cleaning.

Row cleaning is sufficiently promising that no-till producers may want to test it by conducting replicated comparisons on one or more of their fields. In the meantime, we are conducting trials at the Rogers Memorial Farm to determine the effect of row cleaning with earlier planted milo. Combining row cleaning with another operation such as pre-plant herbicide application or planting is important to reducing costs. Row cleaning on highly erodible land can result in increased soil erosion, especially when planting up and down slopes.

Charles S. Wortmann
Nutrient Management Specialist

Starter fertilizer *(Continued from page 24)*

On average, there was a corn yield increase of 7.5 bushels per acre with starter fertilizer, with a slightly greater increase with in-furrow placement of nitrogen plus phosphorus as compared to other starter treatments (*Figure 1*). Response was greater under irrigated conditions (*Figure 2*) than under dryland conditions although several dryland trials experienced severe water deficits. Most of the response occurred where soil Bray-1 phosphorus was less than 15 ppm (*Figure 3*). This suggests that phosphorus is more important than nitrogen in the starter fertilizer.

Over all trials, there was no benefit to including sulfur in the starter fertilizer (*Figure 1*), but there may be a small advantage to including sulfur for dryland sites (*Figure 2*). There was no yield difference due to sulfur source in the starter fertilizer whether applied as ammonium thiosulfate or as ammonium sulfate.

Conclusion

The increase in corn yield under irrigated conditions, especially if soil phosphorus is less than 15 ppm, is sufficient to justify applying phosphorus and maybe nitrogen in a starter fertilizer (e.g. 10-34-0 or 11-52-0) at about 10 lb phosphate per acre. Yield increases with starter fertilizer under dryland conditions were smaller and less frequent but starter fertilizer use may be profitable in adequate rainfall years. In-furrow placement was as effective, or more effective, than over the row or 2x2 placement.

Charles S. Wortmann, Extension Nutrient Management Specialist

Seedling diseases

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prior to germination or attack the young seedling before or after emergence. Symptoms of *Pythium* are typically a brown discoloration and rotting of the exterior portion of the root and mesocotyl. Like *Fusarium*, these infections can spread into the plant's crown. Crown infections cannot be differentiated based on symptoms. Early season damage from *Pythium* will also result in more stalk rot as the plants mature.

Management

Fungicides are the main seed treatment to prepare for potential damage from seedling diseases. While most corn seed is treated, the treatment may not last long enough to protect the seedlings past the critical stage if development is slowed by cool temperatures. In fields with a history of significant *Pythium* problems, producers might consider increasing the rate of mefenoxon (Apron) on the seed. After a stand has been identified as having a seedling disease problem this spring, careful cultivation to promote nodal root development can help plant recovery.

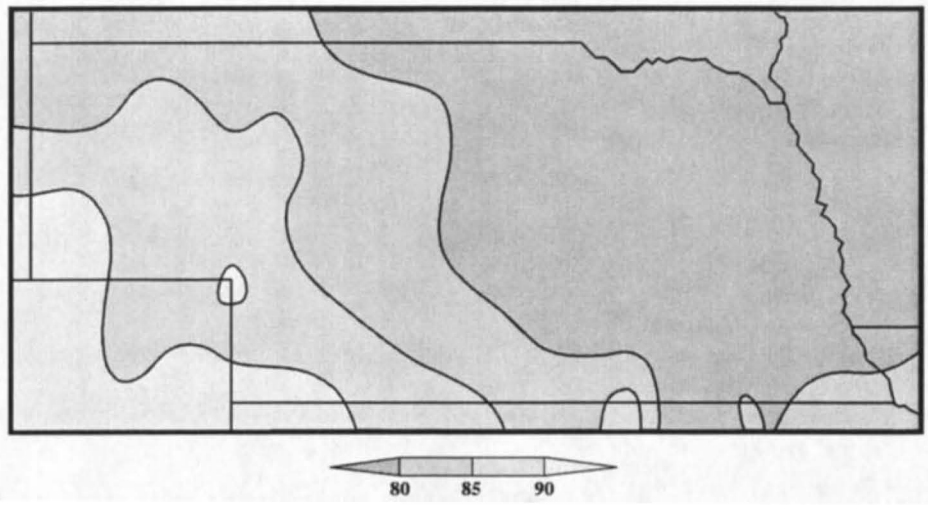
Loren J. Giesler
Extension Plant Pathologist

Corn flea beetle survival expected to be low

Conditions generally were not favorable for overwintering survival of the corn flea beetle this year. The map shows the sum of the average monthly temperatures (F) for December, January and February. If this value is above 90 in an area, high winter survival of the corn flea beetle can be expected. Areas with values from 80 to 90 are expected to see average survival and areas below 80 are expected to see below average survival.

Based on the data in this map, most of the eastern third of Nebraska did not have favorable conditions for flea beetle survival over the winter. Corn flea beetle feeding causes direct damage, but perhaps more importantly, the beetle is a vector of Stewart's wilt.

Corn flea beetles overwinter as adults in protected areas near corn fields. They become active in April and feed on a variety of grasses before corn emerges. Corn flea beetles can directly injure corn by feeding on seedling plants; however, probably more importantly they vector the bacterium which causes Stewart's wilt. (For more information, see the NebGuide, "Stewart's Wilt of Corn in Nebraska," G1462.)



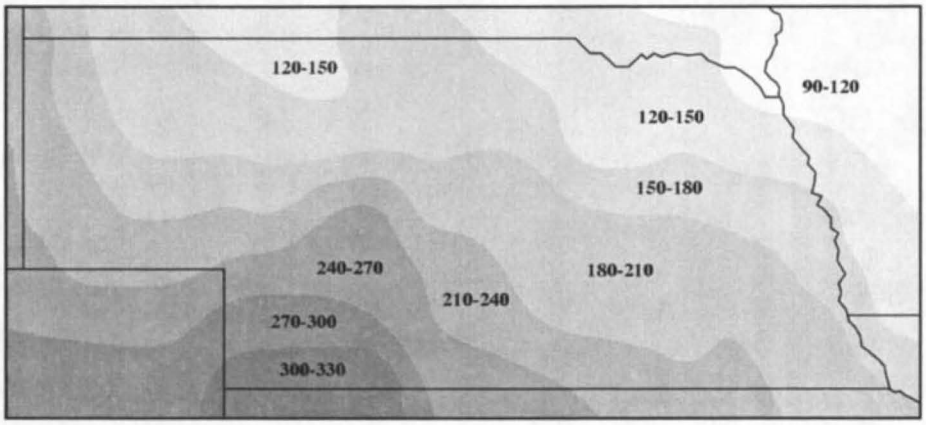
The potential for overwinter survival of the corn flea beetle can be estimated by adding the average monthly temperatures for December to February. Values over 90 indicate high survival while those from 80 to 90 indicate average survival. *(Map developed by Al Dutcher, State Meteorologist, High Plains Climate Center.)*

To minimize damage:

- Avoid hybrids or inbreds known to be more susceptible to Stewart's wilt (see seed catalog or local seed company representative).
- Avoid early planting dates if susceptible inbreds or hybrids are planted.
- Seed treatments containing imidacloprid (Gaucho, Gaucho Extra and Prescribe), clothianidin (Poncho) or thiamethoxam (Cruiser) are systemic and provide protection from feeding by flea beetles and other early season soil insects.
- Scout for corn flea beetles on seedling corn. Postemergence treatment may be warranted on dent corn if 50% of plants show severe flea beetle injury (plants look silvery or whitish, or leaves begin to die), and five or more flea beetles per plant are found. If susceptible inbreds or hybrids are grown, an insecticide may be needed when two to three flea beetles per plant are present and 10% of the plants show severe flea beetle injury.

A variety of foliar insecticides are effective in controlling flea beetles. They include: Lorsban 4E, 2-3 pints per acre; Sevin XLR Plus, 1-2 quarts per acre, Asana XL, 5.8-9.6 fl. oz per 1000 row-feet; Lannate LV 0.75-1.5 pints per acre; Pounce 3.2 EC 4-8 fl. ounce per acre; Warrior 2.56-3.84 fl. ounce per acre), Mustang Max 2.72-4.0 ounce per acre; Baythroid 2 1.6-2.8 ounce per acre. Additional information is available at *http://entomology.unl.edu/fldcrops/pestipm.htm*

Bob Wright
Extension Entomologist



Alfalfa weevil development

Accumulated growing degree days (GDD), using a base of 48 degrees, can be used to help predict alfalfa weevil activity. Feeding begins at about 250 GDD. Next week's ***CropWatch*** will feature more detailed information on scouting and treatment options. *(Map developed by Al Dutcher, State Meteorologist, High Plains Climate Center.)*

Strategies for early season weed control in corn

Warmer weather across much of the state has been tempting many producers to hook up their planters. Of course, with warm weather weeds can't be far behind, especially the early germinators like lambsquarters, giant foxtail, velvetleaf, and sunflower.

Choosing a herbicide strategy to deal with weeds is not always easy, given the many options that should be considered. Factoring in the economics such as herbicide costs, fuel and time, combined with biological and environmental factors, makes the job tough enough; however, when you consider that within that environment, you include weed species spectrum, soil type, organic matter, herbicide efficacy, herbicide restrictions, annual precipitation, precipitation at time of application, and the ability to make timely treatments, there's no easy decision. After factoring in all of these variables, often there is still no perfect choice.

Corn /weed competition

All weeds are not created equal. Each weed species competes differently with corn with some species being much more competitive than others. For example, common sunflower has a competitive index of 10 and is much more competitive than lambsquarters, which has a competitive index of about 2. Understanding the differences between each species and their competitive factors can be very important in determining what weed management strategy will provide the best return on investment.

Since weeds are not created equal we should acknowledge that neither are crops. Each crop differs in its competitive ability as well. Corn is one of the most competitive row crops planted in Nebraska. The relative competitive load necessary to cause a specific yield loss quantifies the competitiveness of a crop. For corn, it would take a competitive load of about 36 per 100 ft^2 to cause a 5% yield loss (100 ft^2 is approximately 40 feet of row in 30-inch rows) Sunflower, however, has a competitive index of 10, therefore it would take 3.6 sunflower plants per 100 ft^2 (3.6 x 10 = 36) to cause a 5% yield reduction in corn. This is assuming that the weeds emerge at the same time as the crop. Accurately calculating yield loss, especially when several species of weeds are present in the field, can be difficult. WeedSOFT, a computer aided weed management decision support tool, can be purchased from the University of Nebraska to supply this information at the click of a button. Using this type of technology allows for more accurate yield loss analysis, providing better information to make weed management decisions.

Early preplant and preemergence weed management

Controlling weeds before they become a problem just makes good sense. As the saying goes "an ounce of prevention is worth a pound of cure" and this is true with weed control in corn. Various techniques are available and depending on individual circumstances, one may be better than the other. Producers need to determine their seasonal goals before committing to any one strategy.

Before we discuss all the strategies available, be sure to refer to *Table 1 (page 29)* for an explanation of the terms and acronyms used with preemergent corn weed control.

Early preplant herbicide (EPP) applications 10-30 days before planting offer many advantages, especially for no-till farmers. Early preplant treatments will kill winter annuals, including henbit and mustards, and early summer annuals, including giant ragweed, common sunflower and lambsquarter. This early control can be very important, especially in a dry year, when these weeds can quickly rob precious soil moisture. An early preplant treatment also will reduce most, if not all, weed competition as the crop emerges from the soil. Although this early competition may not be the most critical with respect to yield, it can quickly reduce yield as corn enters the two-leaf stage. Another advantage is that in years with limited moisture the herbicide has a greater chance of being activated before the crop emerges. A disadvantage of the early preplant treatment is decreased longevity of the residual activity. Common sense tells you the earlier a herbicide is applied to the soil the earlier it will stop working. Postemergence programs need to be carefully evaluated before making such a decision and some knowledge of the weed history in the field will be helpful.

Preplant (PP, PPSA, PPI) is similar to early preplant as many herbicides used are the same. Treatments are typically made 0-10 days before planting. Preplant doesn't give you the advantage of catching early weeds but at the same time it may give you the needed residual for setting the stage for a good POST treatment.

A preemergence treatment (PRE), applied after the crop is planted but before emergence, offers many of the same advantages. An additional advantage is that it allows the producer to increase the longevity of control provided by the herbicide. This works well with conventional till fields. This also provides increased management flexibility later in the season as summer annuals begin to emerge.

Table 2 (page 29) lists labeled preemergence herbicides and their application timings. As always, read, understand, and follow the label supplied with each product. For further evaluation of herbicide efficacy on weeds and weed/crop competition, see the *Guide For Weed Management in Nebraska (EC130)*, available for $3 from your local Extension Office.

Brady Kappler
Weed Science Educator
Alex Martin
Extension Weed Specialist

Table 1. Preemergence herbicide terms

Acronym	Treatment	Timing
EPP	Early Preplant	10-30 days prior to planting
PP	Preplant	0-10 days prior to planting
PPSA	Preplant Surface Applied	0-30 days prior to planting, on the surface
PPI	Preplant Incorporated	0-30 days prior to planting, incorporated
PRE	Preemergence	Planting time until crop emerges

Table 2. Preplant/preemergence herbicides for corn

Note: Rates are dependent on soil type and application type and those listed are based on a silt-loam soil with 1-2% organic matter. Sandy soils with less organic matter may require lower use rates. Soils with more clay and over 2% organic matter may require higher rates. Always consult the label before use.

Treatment	Rate/acre	Application information
Aatrex/Atrazine	2.2 lb	EPP, PPSA, PPI, PRE, EPOST.
Axiom DF	15-18oz	EPP, PPSA, PPI, PRE
Axiom AT	1.5 – 4 lb/a	EPP, PPSA, PPI, PRE
Balance Pro	1.9 – 3.0 oz	PPSA, PPI, PRE *Do not use where water table is within 25 feet on loamy sand or sandy loam and soil organic matter is less than 2% or on coarse soils with soil organic matter <1.0%. On medium soils with pH >7.5, reduce rate by 0.25 oz/a from recommended rate.*
Bicep II Magnum	1.6 – 2.1 qt	EPP, PPSA, PPI, PRE, POST
Bicep Lite II Magnum	1.1 – 1.5 qt	EPP, PPSA, PPI, PRE, POST
Bullet	3 .2 qt	PPSA, PRE
Callisto	6 oz	PPSA, PRE
Camix	2.0 qt	PPSA, PRE, or EPOST
Define	14 –16 oz	PPSA, PPI, PRE
Degree	3.2 – 4.0 pt	EPP, PPSA, PPI, PRE, POST
Degree Xtra	3.5 qt	EPP, PPSA, PPI, PRE, POST
Dual II Magnum	1.3 pt	EPP, PPSA, PRE, POST
Dual IIG Magnum	8 – 10 lb	EPP, PPSA, PRE, POST
EPIC	11 – 15 oz	EPP, PPSA, PPI or PRE. *(Use low rates for soils with pH _>7.4 or with less than 1.0% organic matter.)*
Expert	3 qts	EPP,PPSA,PRE Also EPOST on RR® corn
Fieldmaster	4-5 qt	PRE, PPSA Also EPOST on RR® corn
Fultime	2.7– 3.0 qt	EPP, PPSA, PRE
G-MAX lite	2.5 pt	PPSA, PRE, PPI, EPOST
Guardsman Max	2.9 – 3.4 pt	PPSA, PRE, PPI, EPOST
Harness/ Confidence	2.25 qt	PPSA, PRE, EPOST
Harness/Confidence Xtra	2.3 qt	PPSA, PRE, EPOST
Hornet WDG	4.0 – 5.0 oz	PPSA, PRE, EPOST
Keystone	2.4 – 2.8 qt	PPSA, PRE, EPOST
Keystone LA	1.8 – 2.1 qt	PPSA, PRE, EPOST
Lasso II	17 – 20 lb	PPSA, PRE, EPOST. *Do not use on soils < 1.0% organic matter*
Lumax	2.5qt	PPSA, PRE, or EPOST
Micro Tech/Lasso	2 qt	PPSA, PRE, EPOST
Outlook	14-16 oz	PPSA, PPI, PRE, EPOST
Prowl/Pendimax	1.8 qt	PRE. *Do not use on soils < 1.0% organic matter. Do not incorporate.*
Prowl H_2O	1.5 qt	PRE. *Do not use on soils < 1.0% organic matter. Do not incorporate.*
Python	1.0 oz	PPSA, PPI, PRE
Surpass	1.5 – 2.5 qt	PPSA, PRE, EPOST
TopNotch	2 – 2.5 qt	PPSA, PRE, EPOST

State's winter wheat greening up; stands filling in

With some rain and good temperatures, the winter wheat crop throughout the state has been greening up. It appears that much of the wheat survived the winter in good shape, with that in eastern Nebraska appearing to come through slightly better than that in the west. Fall and winter moisture generally was better in eastern Nebraska and this may account for the more vigorous growth so far this spring as stands are beginning to fill in. There was some yellowing immediately after the snow melted in eastern Nebraska, but that wheat is now green. Fertilizer is being applied in many fields.

In western Nebraska, drier conditions have resulted in spottier stands. Most wheat is O.K., but differences in plant survival and vigor can be seen between and within fields. Drier locations, such as hillsides and terrace tops, have poorer stands than low spots in fields. Many fields have visible patterns which may be linked to practices such as seeding depth or previous tillage or the effects of blowing soil or snow drift. Wheat planted into summer fallowed ground appears to be doing better than continuous wheat, but that is often the case early in the spring before soils warm up. Subsoil moisture in continuously cropped fields is very low, particularly with increasing depth. Without good spring rain this wheat could suffer.

NASS wheat report

The USDA Nebraska Agricultural Statistics Service reported Monday that wheat condition rated 10% very poor, 18% poor, 37% fair, 34% good, and 1% excellent, a slight improvement over last year's rating of 31% good to excellent.

Warm dry conditions this spring in western Nebraska will encourage early growth and increase the need for timely moisture. Subsoil moisture in much of western Nebraska is not adequate to carry the winter wheat crop very far into the active spring growth period. Fields fallowed with herbicides, and that had crop residues, contain more soil water than conventionally fallowed fields. Growers will be dependent once again on timely precipitation this spring. Last year, Mother Nature provided excellent growing conditions for the winter wheat crop. We are unsure she will be so generous again this year.

Drew Lyon
Dryland Crops Specialist
Bob Klein
Cropping Systems Specialist
Lenis Nelson
Crop Variety Specialist

Watching for early season wheat diseases

One of the earliest diseases to occur in seedling wheat will be the soil-borne mosaic virus which is already visible in Oklahoma and Kansas. From a distance wheat fields affected by soil-borne mosaic show areas of yellow or pale green wheat. These areas often conform to low areas such as terrace channels or drainage paths. Sometimes the pattern may be generally distributed across a field.

So as to not confuse this disease with nutrient deficiency, closely examine plants in the affected areas. They are often stunted and the leaves will show a light green mosaic pattern. Losses are generally not severe unless the variety is very susceptible and the incidence of disease in the field is high. Since this is a virus, nothing can be done to control it once the crop has been planted.

Soil-borne wheat mosaic can appear as patches of yellow or pale green wheat. Examine plants carefully to determine whether the problem is being caused by a disease or nutrient deficiency, which can be corrected.

For more information, see the NebGuide, *Wheat Soil-borne Mosaic Disease* (G74-202, revised in 2001), available from your local Cooperative Extension office or on the Web at *http://ianrpubs.unl.edu/plantdisease/g202.htm.*

Last fall Oklahoma reported a fairly high incidence of leaf rust, but apparently it did not overwinter well. The latest reports have leaf rust at a low incidence in Oklahoma. In Texas the incidence appears to be scattered with some areas of south Texas reporting severities of 60% on the more susceptible varieties. As of last week no leaf rust had been reported active in Kansas.

Stripe rust incidence is light across southern Texas and has not been found in either Oklahoma or Kansas.

Development of both rust diseases south of Nebraska will continue to be monitored as the season progresses. If rust looks like it will be a problem, we will provide advance notice in ***CropWatch*** in sufficient time to apply a foliar fungicide.

John Watkins
Extension Plant Pathologist