CropWatch No. 98-8, May 8, 1998

Lisa Brown Jasa
University of Nebraska-Lincoln, ljasa@unlnotes.unl.edu

Follow this and additional works at: http://digitalcommons.unl.edu/cropwatch

Part of the Agriculture Commons

http://digitalcommons.unl.edu/cropwatch/163

This Article is brought to you for free and open access by the Extension at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Crop Watch by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.
Scout emerging corn for cutworms

Early planted corn is beginning to emerge and should be scouted for cutworms. Every field, regardless of whether it was treated with an insecticide at planting, should be scouted for cutworms soon after emergence to guard against stand loss.

Several species of cutworms can attack corn. The severity and the area affected varies greatly, and is dependent on cutworm species involved, previous crop history, and weather conditions.

Cutworms that attack corn can be divided into two general categories based on seasonal life cycles. Black cutworms do not overwinter in Nebraska. Dingy, claybacked, darksided, sandhills and other species 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, and 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 for causing a widespread problem.

We monitor black cutworm flight with a series of pheromone traps across the state. 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 efforts.

Black cutworm moths prefer to lay eggs in green vegetation or heavy surface residue, and seem to prefer legume residue over corn residue. When weeds are destroyed mechanically or by herbicides, they will feed on the newly emerging corn. Last year, several fields of corn planted into soybean or old alfalfa residue experienced black cutworm damage when a late flight of moths came in. By the time the larvae hatched, the corn plants were too big for the cutworms to cut. In this case, the cutworms will burrow into the stalk just below the soil surface. The symptom is usually called “dead heart”, since the newer

(Continued on page 73)
Earle Raun, a crop consultant in southeast Nebraska, and ZB Mayo, Extension Entomologist in Lincoln, this week reported flea beetles in seedling corn. In one- to two-leaf corn, Raun found two to four flea beetles per plant, severely damaging leaf tissue. Damage will be more significant if cooler temperatures prevail and plant growth is delayed, Raun said.

Bob Wright, Extension Entomologist, advises: Given the mild winter weather, flea beetles or other early season pests (cutworm, wireworm, white grubs) may be injuring seedling corn.

From past conversations with Dave Wysong and John Watkins, Stewart's wilt, transmitted by flea beetles, is not a concern in Nebraska.

Flea beetles scrape away the green surface tissue on the leaf, leaving a 'window pane' effect, usually in long narrow strips. Our rough threshold for flea beetles is treatment is probably justified if there are five or more beetles per plant (4-6 inches tall). Fewer beetles can injure smaller plants. Corn taller than 6 inches can probably tolerate five beetles per plant without economic loss.

Post emergence foliar sprays of synthetic pyrethroid insecticides (Asana, Pounce, Ambush, Warrior), Sevin or Lorsban 4E are possible treatments.

Ralph Anderson, Extension Educator in Buffalo County: While some producers are just starting to plant corn, some are done and beginning to play soybeans. Wheat acreages seem to be down again this year. The wheat crop is jointed and with little or no evidence of significant disease. Cattle are being moved to pastures but there isn't a lot of grass yet.

Del Hemsath, Extension Educator in Frontier County: Corn planting is nearly complete. Conventional tilled fields are dry enough that center pivots are being used to provide moisture for germination and activation of herbicides. Wheat is jointing and close to stem elongation.

Paul C Hay, Extension Educator in Gage County: Corn planting is nearing completion for most area farmers and soybean planting is moving ahead quickly. Alfalfa is looking good and cutting should start in mid-May.

Gary Zoubek, Extension Educator in York County: Planting has progressed rapidly this year. By now about 75% of the corn has been planted with some early planted corn just coming up. Several producers have planted some soybeans. Received a little rain on Monday night along with some hail in parts of the county.

Steve Pritchard, Extension Educator in Platte County: Corn planting is progressing well with most of it planted; a few fields are still too wet to plant. A few producers have started planting soybeans. Top soil moisture is a little short and is causing a concern among producers.

Noel Mues, Extension Educator in Furnas/Red Willow counties: Corn producers made excellent progress with planting. Moisture supplies are a big concern in southwest Nebraska. Areas to the west and northwest of Furnas County are

(Continued on page 79)
Cutworms (Continued from page 71)

leaves in the whorl will turn brown as the larvae reach the growing point. This damage is often confused with wireworm damage. Wireworm damage usually happens early in the season and always involves attacking the seeds, although in severe infestations they may bore into the corn plant.

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 the vegetation before overwintering. In the 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 potential for cutworm problems. In 1991, claybacked cutworms overwintering in alfalfa were numerous in a field near Coleridge. In 1992, black cutworms were attracted to a no-till field of corn near Wayne that was planted into alfalfa that had been killed with 2,4-D. Some research has shown that if the food source has been removed for more than 10 days, most cutworms will starve; however, that is no guarantee.

You cannot be sure that tillage will have a significant effect on cutworm populations. If fields are tilled before black cutworm migration, it 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. Previous vegetation is probably the most important factor in cutworm potential.

It is extremely rare to experience cutworm problems in continuous corn. Corn residue is not a preferred egg-laying site. Potential problems in continuous corn may be the result of a previous year’s late season flush of weeds or an interseeding of a fall cover crop such as rye, which would possibly attract fall egg laying moths.

Managing cutworms in corn

Several options exist for the grower who wants to manage cutworms in corn. Since most corn acreage is not affected by cutworms, the most economical practice is to scout for cutworm damage as soon as the corn emerges and apply a rescue treatment if necessary. Early detection of a problem is essential because most of the cutting occurs within seven days of plant emergence. Because many cutworm problems are caused by overwintering species, every field should be checked for cutworm problems regardless of black cutworm pheromone trap counts. Generally, a rescue treatment should be considered if 5% (one plant in twenty) or more plants are damaged, 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, Lorsban 4E, Pounce 3.2EC and Warrior-T have all given 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.

There is some use of planting time treatments for cutworm control. The use of granular soil insecticides and broadcasting or banding liquids has met with mixed success. In the case of black cutworms, the material may deteriorate before the black cutworms migrate into an area. Planting time treatments may work better on cutworms that overwinter in the soil, since they are already present when treatment occurs. Excessively dry conditions may limit the activity of granular insecticides. The primary risk to using planting time treatments is economic. Since there is no way to know whether a field is or will be infested with cutworms, most of these “insurance” type treatments are applied when nothing is present, resulting in possibly unnecessary expenses.

At several northeast Nebraska sites, Force has provided consistently better results for cutworm control at planting time than other granular insecticides. Lorsban 15G will also work well but may be a little more moisture dependent. In the same tests, banded treatments of Ambush worked as well as Force but cost less. We suspect that the other pyrethroid liquids would perform similarly at planting.

Keith Jarvi
Extension Assistant
Integrated Pest Management

Corn insect resource

The University of Nebraska Cooperative Extension has published “Corn Insects — Quick Reference,” a six-page circular with brief descriptions, damage symptoms, incidence, sampling strategies, and economic thresholds for 22 corn pests. Contact your local Extension Office for your copy.
Tan spot identified in wheat; watch for crown and root rot symptoms

With the recent wet weather, tan spot has started causing some yellowing in fields containing or adjacent to stubble. Symptoms are yellow leaves with small tan spots. The more numerous the spots on the leaves, the more pronounced the yellowing. Since we’re still early in the season, this shouldn’t present a serious threat to the wheat. Other diseases that can cause yellowing now are crown and root rot and soilborne mosaic.

Any suspect fields should be examined for a mosaic pattern on the younger leaves and discoloration of the crowns and roots. To examine the crowns and roots, remove plants with a shovel, clean off the dirt and split the crowns. If they are healthy, they will appear white; if they are diseased, they will be tan or brown. Plants with diseased crowns and roots generally produce weaker poorer-yielding plants. Severe crown and root rot can substantially reduce yields.

Diseases to watch for in May include tan spot, Septoria leaf and glume blotches, wheat streak mosaic, barley yellow dwarf, high plains virus, scab and Cephalosporium stripe. Leaf rust severities so far are light in Kansas and Oklahoma, but it’s still early in the season. We’ll keep a close watch on its development in those two states.

Tan spot, leaf rust and the Septoria diseases can be effectively controlled by fungicide application. The critical factor is to get the wheat treated before the disease is severe on the flag leaf. A fungicide applied too late will not be effective. Scout fields regularly in May to assess disease development and then base your decision to treat on these factors:

1) the level of disease on the lower leaves,
2) the potential for leaf rust,
3) the potential for periods of wet weather,
4) the potential yield of the field (should be at least 40 bu/a) and
5) the cost of treatment (can range from $15-$20/acre).

If the level of tan spot on the lower leaves is high, the potential for leaf rust is good, and wet weather is forecast, applying a fungicide to prevent severe disease damage to the flag leaf usually pays off. If you treat the wheat, keep an untreated check strip to compare yields. Wheat varieties that have a good level of resistance to leaf rust will not benefit from fungicide treatment unless tan spot is a threat.

John E. Watkins
Extension Plant Pathologist

Grasshoppers ‘abundant’ in some western areas

Newly hatched grasshoppers have been seen in substantial numbers in road ditches and ditch banks in the Panhandle. In addition, some growers have already treated fields to stop the feeding of these small nymphs.

Apparently the warm and dry winter and spring have resulted in an early hatch as was seen last year. Grasshoppers overwinter as eggs in undisturbed soil, so these untilled areas are most likely to be producing the grasshoppers this spring. Growers are advised to watch their fields closely to prevent grasshopper damage as these grasshoppers move out from the edges of these fields. The most susceptible crops to this early feeding are sugar beets and newly seeded alfalfa. Areas around these fields should be watched closely as the small size of these nymphs make them difficult to detect once they have moved into the fields.

Other crops should also be monitored regularly to determine the damage potential of the grasshopper populations in the hatching areas. In many situations, these populations can be controlled by treating only the ditches or other areas where the hoppers are hatching. This can significantly reduce costs, especially if repeated treatments are required to control the hoppers throughout their extended hatching period. Repeated applications are more likely to be required around the more sensitive crops.

Refer to NebFact NF97-328, A Guide to Grasshopper Control in Cropland, for more information on grasshopper management and control.

Gary L. Hein, Extension Entomologist, Panhandle Research and Extension Center, Scottsbluff
Creating a transgenic ‘event’

How it happens in the lab affects how the trait will be exhibited in the field

Last fall when ordering seed for the 1998 season, you might have contemplated trying one of the new transgenic lines. That decision may have been complicated not only by the question of whether transgenic crops are economically superior, but also which line, or “event”, is agronomically superior.

An event is the insertion of a particular transgene — a new gene — into a specific location on a chromosome. There are two factors that determine an event: 1) What transgene was inserted; and 2) Where it was inserted on the chromosome.

The first factor is the cause of most of the differences in genetic events on the market today. These different events are created when geneticists tinker with the gene even before it is inserted into a plant cell in an effort to create a gene that will produce the desired results. The structure of a gene enables them to do this.

Every gene has two regions that control gene expression. They are the promoter and the coding region.

The promoter

The promoter acts as a genetic dimmer switch in that it turns the gene on and off and specifies how much protein should be produced. The coding region tells the gene specifically which protein to produce. Using special enzymes, geneticists can cut apart the regions, remove one of them, and

(Continued on page 76)
Producing transgenic events (Continued from page 75)

replace it with another that will give the desired results. Two promoters used in transgenic crops are the 35S and PEP carboxylase promoters. Each promoter produces different results in plants.

The 35S promoter originated from the cauliflower mosaic virus. The promoter on the gene of this virus tells the gene to produce the virus protein in every cell of a plant all of the time. When genetic engineers add this promoter to the transgene, the protein encoded by the gene will be produced in every cell throughout the plant’s life.

The PEP carboxylase promoter is a photosynthetic promoter. Any transgene with this promoter will produce the protein only in cells actively making photosynthetic proteins. Genetic engineers use this promoter to limit expression to cells that make up green tissue. Bt corn is a good example of these two promoters in action. Some lines, or events, are designed to have resistance to European corn borer all season long in every part of the plant. Those events use the 35S promoter. Other events are designed to have resistance in green tissue but not in other parts, such as the seed or roots. These events contain the PEP carboxylase promoter. The design of this promoter results in decreased production of the Bt protein at the end of the season.

The coding region

The second region that can be modified is the coding region. Numerous coding regions are used today to provide everything from resistance to European corn borers and Round-up to high oil corn.

Genetic engineers can mix and match the two regions to obtain a gene that will produce the protein they want, where they want, when they want it.

Once the desired gene is achieved, the goal becomes getting it into a plant cell. This is done through a process called transformation, and results in the second factor that can determine an event.

There are several different techniques used in transformation. However, the two most common are the gene gun, which blasts gold particles coated with DNA into the cell, and agrobacterium, a natural genetic engineer which injects DNA into the cell.

Although both of these transformation methods are widely used, neither is very efficient or accurate. Geneticists have no control over whether the transgene actually reaches the nucleus and where the transgene inserts into a chromosome. As a result, every time a plant cell is transformed, it is a unique ‘event’ that is not reproducible.

The location on the chromosome where the transgene inserts itself is the second factor that determines an event. A chromosome is actually a structure composed of tightly wound DNA. Each chromosome contains thousands of genes. When the transgene inserts itself into a chromosome, it may insert right in the middle of the sequence for another gene. This interrupts the genetic sequence of that gene, preventing the production of the protein it encodes. If that protein is important to the plant’s growth and development, plant growth and yield may be decreased, or in other cases the plant may die. If the transgene inserts itself into a location that is not important to plant growth and yield, the plant will grow normally with the addition of the new trait added by the transgene.

Every time a plant cell is transformed, it is a unique ‘event’ that is not reproducible.

It can take thousands of tries before genetic engineers find a transgenic plant that expresses the transgene in the desired way. Those few plants are then passed on to the plant breeders who will backcross them with agronomically elite lines. Their goal is to get a line that has as many of the genes from the elite line as possible while still retaining the new transgene.

Which events are best? Each has its own strengths. Transgenic traits are designed to protect yield. So the single most important factor to remember in selecting a line is its yield potential in your field environment.

Patty Hain
Graduate Student
Plant Breeding and Genetics
Department of Agronomy

Plant/Pest Diagnostic Clinic update

Wheat diseases diagnosed in the last two weeks were soilborne wheat mosaic, crown and root rot, tan spot, and Septoria leaf blotch. We also identified our first sample with wheat streak mosaic virus for the season.

Conifer diseases included Sphaeropsis tip blight, Kabatina tip blight, and Dothistroma needle blight.

Loren J. Giesler
Plant and Pest Diagnostic Clinic Coordinator
Use caution when combining liquid nitrogen and fertilizers

The wet weather experienced by much of the state this season has many producers looking to save time by applying fertilizer with their preemergence herbicides. In a normal year, many producers would have applied anhydrous ammonia already.

Applying UAN and preemergence herbicides together can be safely done prior to crop emergence. Crop injury increases sharply when applications are made after crop emergence and varies with the herbicide. Dual and Lasso would provide the least amount of injury, with symptoms similar to injury from UAN alone. Herbicides in the triazine family can cause the most severe injury. Severity of injury increases as triazine rates increase. For example, going from Bicep II Lite to Bicep II would result in greater injury, 2.0 lb/a of Atrazine being even more severe. Bladex or Extrazine would probably result in more severe injury than Atrazine. Research has shown atrazine applied to four-leaf corn with 60 lbs nitrogen per acre caused injury similar to 150 lbs nitrogen per acre applied alone, resulting in widespread necrosis on the second, third, and fourth leaves. If liquid nitrogen is to be applied to emerged corn, apply early post herbicides in water several days before applying the liquid nitrogen. Increased injury can be expected with cool, wet weather. Differences also exist between crops. Corn is more tolerant than sorghum of fertilizer-herbicide mixtures. The tolerance of emerged corn and sorghum to liquid fertilizer is greatest in the spike stage and decreases with maturity. However growers may be willing to accept some injury for the time and money saved with the combined application.

Jeff Rawlinson
Extension Assistant Weed Science

Alex Martin
Extension Weed Specialist

Testing for compatibility

Combining liquid nitrogen with a preemergence herbicide may appeal to producers this year. Many herbicides are readily compatible with liquid nitrogen, however compatibility should be checked before mixing large quantities.

Compatibility test based on 25 gallon per acre application:

1. Add 1 pint of fertilizer to each of two jars
2. To one jar add 1/4 teaspoon (1.2 ml) of a compatibility agent and stir.
3. To both jars add the appropriate amount of herbicide(s). Add dry herbicides first, flowables second, and emulsifiable concentrates last. Stir after adding each material.

**Dry herbicide:** For each pound per acre to be applied, add 1.5 level teaspoons.

**Liquid herbicide:** For each pint per acre to be applied, add 1/2 teaspoon or 2.5 ml.

4. Shake or stir the contents of each jar thoroughly and let the mixtures stand for 15 minutes.

If either mixture separates but can be readily remixed, the mixture can be sprayed with good agitation. Comparing the two jars will indicate if a compatibility agent is needed.

Compatibility of mixtures can often be improved by 1) mixing the dry fertilizer with water before addition 2) adding one-half of the compatibility agent to the fertilizer and the other half to the emulsifiable or flowable herbicide before adding to the mixture.

General mixing procedure: Fill the spray tank one-fourth to one-half full with liquid fertilizer and start the agitation. Add a compatibility agent if needed. Add the dry herbicide to the spray tank. Dry herbicides and flowables often mix more readily if mixed with a small quantity of water before adding the fertilizer. Continue filling the tank with liquid fertilizer until it is 90% full. Add flowable herbicide, followed by emulsifiable concentrates and oil concentrates.

Jeff Rawlinson, Extension Assistant Weed Science
Alex Martin, Extension Weed Specialist

Crop update

Winter wheat condition declined from last week and rated 1% very poor, 8% poor, 30% fair, 51% good, and 10% excellent. By Sunday, 29% of the crop had jointed ahead of 15% last year but behind the five-year average of 31%.

Corn planting was 43% complete Sunday, ahead of 27% last year and 26% for the five-year average.

(Continued on page 80)
You asked about it

Sprayer and planter adjustments

1. A producer from Saline County asked: How do I set up flood nozzles for herbicide application?

   Extension Engineer Paul Jasa responded: Simply put, you don’t. Flood nozzles were designed for applying fertilizer, not herbicides. The large orifice and spreading surface of the nozzle produces a spray pattern that has a very uneven distribution of droplets making it difficult to achieve a uniform pattern. In addition, the droplet sizes formed are far too large (over 1,200 microns) to be effective for herbicide application (200 to 400 microns for contact herbicides or 400 to 800 for systemic herbicides).

   Even with soil-applied herbicides, it is difficult to achieve uniform application without increasing the carrier volume to more than 40 gpa and using tillage for incorporation. An extended range flat fan spray tip, or any other nozzle with a fan spray pattern, should be used for herbicide application.

2. A producer from York County asked: I am using an eight-row mounted planter with notched disk furrow openers for ridge plant and am having difficulty keeping it on the ridge. What can I do?

   Extension Engineer Paul Jasa responded: First, center the drive wheels exactly between the rows so they run in the bottom of the furrow. Next, adjust the toolbar height so that the parallel links are running level and not pulling the planter

(Continued on page 79)

Preemergence herbicides for use early postemergence

Many producers were not able to apply preemergence herbicide treatments in a timely manner this season. This has put many in the uncomfortable situation of deciding just how late preemergence herbicides can be applied without injury to the crop. Many preemergence herbicides can be applied early postemergence without crop injury. This delayed treatment may not be as effective in some cases. The following table lists a variety of preemergence herbicides that can be applied early postemergence.

Herbicides not listed can not be applied postemergence due to label restrictions.

Jeff Rawlinson, Extension Assistant Weed Science
Alex Martin, Extension Weed Specialist

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Crop stage</th>
<th>Weed stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aatrex/Atrazine</td>
<td>0-12&quot;</td>
<td>1.5&quot; grass</td>
</tr>
<tr>
<td>Bicep</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Bladex 80W</td>
<td>before 5th leaf</td>
<td>1.5&quot; grass</td>
</tr>
<tr>
<td>Broadstrike + Dual</td>
<td>0-5&quot;</td>
<td>unmerged</td>
</tr>
<tr>
<td>Bullet</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Contour</td>
<td>0-12&quot;</td>
<td>0-3&quot;</td>
</tr>
<tr>
<td>Dual</td>
<td>0-5&quot;</td>
<td>unmerged</td>
</tr>
<tr>
<td>Dual II Magnum</td>
<td>0-5&quot;</td>
<td>unmerged</td>
</tr>
<tr>
<td>Dual + Aatrex</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Extrazine</td>
<td>before 5th leaf</td>
<td>1.5&quot;</td>
</tr>
<tr>
<td>Frontier**</td>
<td>0-8&quot;</td>
<td>unmerged</td>
</tr>
<tr>
<td>Guardsman**</td>
<td>0-8&quot;</td>
<td>1.5&quot;</td>
</tr>
<tr>
<td>Harness</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Harness Xtra</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Hornett</td>
<td>0-24&quot;</td>
<td>2-8&quot; broadleaf</td>
</tr>
<tr>
<td>Lariat</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Lasso</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Lasso + Aatrex</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Lasso + Banvel</td>
<td>0-3&quot;</td>
<td>0-4&quot; broadleaf</td>
</tr>
<tr>
<td>Marksman</td>
<td>0-5&quot;</td>
<td>unmerged</td>
</tr>
<tr>
<td>Optill</td>
<td>0-5&quot;</td>
<td>1&quot;</td>
</tr>
<tr>
<td>Prowl + Atrazine</td>
<td>up to 2-leaf</td>
<td>1&quot;</td>
</tr>
<tr>
<td>Prowl + Bladex 80W</td>
<td>up to 2-leaf</td>
<td>weeds &lt;3&quot;</td>
</tr>
<tr>
<td>Pursuit (IMI corn)</td>
<td>corn &lt;8-leaf</td>
<td>unmerged</td>
</tr>
<tr>
<td>Python</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Ramrod + Atrazine</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Shotgun</td>
<td>0-12&quot;</td>
<td>0-4&quot;</td>
</tr>
<tr>
<td>Surpass</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Surpass 100</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Topnotch</td>
<td>0-5&quot;</td>
<td>2-leaf</td>
</tr>
</tbody>
</table>

(Continued on page 79)
Preemergence herbicides
(Continued from page 78)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Crop stage</th>
<th>Weed stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybeans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broadstrike + Dual</td>
<td>through unifoliate</td>
<td>unemerged</td>
</tr>
<tr>
<td>Detail</td>
<td>up to unifoliate</td>
<td>unemerged</td>
</tr>
<tr>
<td>Dual</td>
<td>through unifoliate*</td>
<td>unemerged</td>
</tr>
<tr>
<td>Dual II Magnum</td>
<td>0-5**</td>
<td>unemerged</td>
</tr>
<tr>
<td>First Rate**</td>
<td>up to 1/2 flower</td>
<td>unemerged</td>
</tr>
<tr>
<td>Frontier</td>
<td>up to 3rd trifoliolate</td>
<td>unemerged</td>
</tr>
<tr>
<td>Lasso</td>
<td>through unifoliate*</td>
<td>unemerged</td>
</tr>
<tr>
<td>Pursuit</td>
<td>---</td>
<td>weeds &lt;3&quot;</td>
</tr>
<tr>
<td>Python</td>
<td>through unifoliate*</td>
<td>unemerged</td>
</tr>
</tbody>
</table>

Grain sorghum

<table>
<thead>
<tr>
<th>Treatment</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aatrex/Atrazine</td>
<td>0-12&quot;</td>
<td>1.5&quot;</td>
</tr>
<tr>
<td>Bicep</td>
<td>up to 5**</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Bullet</td>
<td>0-5**</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Dual</td>
<td>up to 5**</td>
<td>unemerged</td>
</tr>
<tr>
<td>Dual II Magnum</td>
<td>0-5*</td>
<td>unemerged</td>
</tr>
<tr>
<td>Frontier**</td>
<td>up to 3rd trifoliolate*</td>
<td>unemerged</td>
</tr>
<tr>
<td>Guardsman**</td>
<td>0-8**</td>
<td>0-1.5&quot;</td>
</tr>
<tr>
<td>Lariat</td>
<td>up to 5**</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Lasso</td>
<td>up to 5**</td>
<td>unemerged</td>
</tr>
<tr>
<td>Lasso + Atrazine</td>
<td>up to 5*</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Ramrod + Atrazine</td>
<td>0-5**</td>
<td>2-leaf</td>
</tr>
<tr>
<td>Shotgun</td>
<td>0-12&quot;</td>
<td>0-4&quot;</td>
</tr>
</tbody>
</table>

*Not labeled postemergence; however, experience indicates little chance of crop injury.
**Labeled as EPP, PPI, PRE, and EPOST.

You asked about it
(Continued from page 78)

down off the ridge. Then, add weight to the planter and carry that weight on the drive wheels. If the drive wheels are “heavy” enough, gravity won’t let them come out of the furrow and the planter will stay on the ridge. Also, raise the ridge cleaners to move only residue, not soil, leaving the old root stumps in the ground. Removing them pushes the planter off the ridge and potentially causes problems later with cultivation and furrow irrigation.

(A follow-up with this producer: He added 1200 pounds of cast iron weight, leveled the toolbar, and reduced the operating depth of the ridge cleaners. He said it now behaves as a completely different planter and always stays on the ridge.)

Field updates
(Continued from page 72)

in dire need of rain. Winter wheat condition has declined with many fields showing evidence of soil-borne mosaic virus. Alfalfa fields are rebounding from severe army cutworm damage.

Ralph Kulm, Extension Educator in Holt/Boyd counties: Army cutworms delayed alfalfa greenup and/or slowed early growth in Boyd County. Several fields were sprayed yet last week because of the extensive damage. Planting is continuing with over 50% of the corn in and 10% of it emerged. Soybean planting has started.

Keith Glewen, Extension Educator in Saunders County: Most corn is planted. A few producers have started planting soybeans; however most are waiting until the soils warm up. Many growers in Eastern Nebraska have learned from experience that early planted soybeans may not be the best at harvest. The trend toward more tillage seems to be continuing.

Alfalfa weevil forecast

Base 48 growing degree days accumulated Jan. 1-May 4. Spring hatching weevil larvae usually cause noticeable damage at about 300-375 growing degree days.
Field Scout Training
May 13-14

Field scout training will be offered May 13 at the University of Nebraska West Central Research and Extension Center near North Platte and May 14 at the Buffalo County Extension Complex at the Kearney fairgrounds. Registration begins at 8 am for both dates.

The classroom and laboratory sections will explore the broad spectrum of potential pest and agronomic problems associated with corn and alfalfa production. Pests of soybeans will be discussed at Kearney and pests of soybeans will be discussed at North Platte. Participants will learn details about field scouting, irrigation scheduling, diagnosis of agronomic and fertility problems, and identification of weeds, disease and insect problems.

The $15 registration fee will cover the cost for speakers and a noon meal. Field scout manuals will be available for $50.

These meetings will qualify for CCA continuing education credits in each of the listed areas.

For more information, contact Ron Seymour, (308) 532-3611 x160.

Ron Seymour, Extension Assistant
Integrated Pest Management
West Central Research and Extension Center, North Platte

Crop update
(Continued from page 76)

In areas of very short moisture supplies, some producers were irrigating to assist seed germination. Oat seeding was virtually complete as of Sunday, ahead of 85% last year and 84% average.

Alfalfa condition was rated 2% poor, 20% fair, 64% good, and 14% excellent.

Nebraska Agricultural Statistics Service Report