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Scout now for European corn borers; assess need for treatment

European corn borer egg masses have been found in several corn fields in southeast and south central Nebraska. The next two to three weeks is a critical time statewide for scouting and planning management options.

With the current air temperatures, egg masses will hatch in three or four days. After hatching, worms disperse rapidly and attempt to establish in plant whorls. Signs of establishment are feeding scars or shot-holing on whorl and fully expanded leaves. However, larval mortality due to weather, predation and plant resistance is usually very high on these early instars, particularly the first instars. Shot-holing is not a validation of live borers. At the same time, early in the egg laying and hatch cycle, lack of visible shot-holing is not a validation of larval absence.

Begin scouting fields every few days and track populations over time. If early scouting information indicates a treatment may be necessary, hold off and re-evaluate after the larval population stabilizes and most are late second or early third instar. The key to effective and economic management is a valid predictive estimate of the number of surviving larvae per plant that are capable of tunneling and forming cavities. The closer to first tunneling when the assessment is made, the more accurate it will be; however, once tunneling occurs, larval control is impossible. The skill is in assessing the larval population level and instar; the art is in balancing time requirements and future weather events with the necessity of completing the application before tunneling begins. It is better to be early, but not too early, than late. Use the worksheet to determine the economics of a treatment.

Once tunneling occurs, larval control is impossible.

The insecticide application can be ground, aerial or by chemigation. Each has its pluses and minuses and its place. Granular formulations are more effective than liquid formulations if ground or aerially applied. Consider using products containing the bacteria, Bacillus thuringiensis or Bt. These

(Continued on page 97)
Black cutworms
There have been several reports to the Northeast Research and Extension Center of corn dying or showing “dead heart” symptoms. On further examination, there is evidence of a hole bored into the side of the plant just below ground level and possibly some feeding on older leaves. Sometimes a large cutworm has been found in the stem or in the soil near the plant.

While we have not seen these fields, this is almost certainly damage caused by a late flight of black cutworms who laid eggs in residue or weed growth. When the weeds were controlled, the pests moved to nearby corn plants to feed. For the size of the larvae reported (over 1 inch long) feeding should be ending shortly and treatment would likely not be profitable.

Corn rootworms
Corn rootworm egg hatch has now been reported at Mead and Concord, indicating scouting should be underway throughout the state.

Soil erosion
With last month’s heavy downpours — sometimes up to 6 inches in one night — several Extension Educators in southeast Nebraska have reported seeing some of the worst soil erosion in recent years.

“I don’t think I’ve seen erosion this bad in my lifetime. It’s really pretty serious,” said Ken Burgert, Extension educator in Nemaha-Johnson counties.

Keith Glewen Extension educator in Saunders County agreed, adding that a number of producers had done tillage in the fall and spring, leaving their fields vulnerable to erosion when the downpours deluged the area. “It’s at least the worst I’ve seen in 15 years,” he said.

Condition update
Last week’s hot dry weather provided excellent conditions for rapid crop development and spring planting, according to the Nebraska Agricultural Statistics Service. Following is their crop condition report, as of Monday.

Winter wheat condition rated 7% very poor, 22% poor, 44% fair, 23% good, and 4% excellent, with 94% of the crop heading as of Sunday. This compared with 86% headed by this time last year and 97% for the five-year average. Some southern wheat fields have already started changing color.

Soybean planting made excellent progress last week with 95% planted by week’s end, ahead of last year’s 78%, and slightly ahead of the five-year 94% average.

Sorghum planting progressed rapidly with 92% completed, which compares to a five-year average of 91%. Emergence was at 55%, compared to 32% last year and 76% for the five-year average. Producers were spraying for greenbugs in portions of the south central and southeast districts.
European corn borer (Continued from page 95)

products are not harmful to beneficial insects and generally are safer for the applicator. In any case always read the insecticide label before using.

Scouting method

Examine at least 25 corn whorls at each of several locations in each field for fresh whorl feeding. Record the percent of total plants showing recent whorl damage. Unroll several damaged whorls at each site and record the number of live worms present. Multiply the average number of larvae/damaged whorl by the average percent of the plants with whorl damage. Enter this number into the worksheet in Step #2. In Step #3, use an average figure of 5% loss in yield for each live larvae found per plant.

For more complete information, contact your local extension educator and/or buy a copy of EC96-1509, Insect Management Guide for Corn and Sorghum.

John Witkowski
Extension Entomologist
Northeast District

Management worksheet for first generation European corn borer larvae

<table>
<thead>
<tr>
<th>Step</th>
<th>Calculation</th>
<th>Example field</th>
<th>Your estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Yield potential for this field</td>
<td>150 bu/A</td>
<td>bu/A</td>
</tr>
<tr>
<td>2.</td>
<td>Number of larvae/plant = average Live larvae/plant x average percent Infestation (4 larvae x 50% infestation = 2 larvae/plant)</td>
<td>2 larvae/plant</td>
<td>Larvae/plant</td>
</tr>
<tr>
<td>3.</td>
<td>Potential yield loss (2 larvae/plant x 5% loss/larva = 10% loss in yield, 10% x 150 bu/acre = 15 bu loss/acre)</td>
<td>15 bu loss/acre</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Dollar loss/acre (15 bu/a x $3.50 per Bu = $52.50 loss/a)</td>
<td>$52.50</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Preventable loss (if chemical is 75% effective = $52.50 x 75% = $39.37)</td>
<td>$39.37</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Cost of chemical (ex. $8.00/a) and cost of application (ex. $4.50/a)</td>
<td>$12.50</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Compare preventable loss ($39.37/a) with total cost of treatment ($8.00 + $4.50/a = $12.50/a or $39.37/a - $12.50/a = $26.87 dollars saved by the treatment)</td>
<td>$26.87</td>
<td></td>
</tr>
</tbody>
</table>
Postemergence weed control in sorghum

Crop growth stage restrictions are an important consideration when choosing a postemergence herbicide for sorghum. Gauge treatments on crop growth stage in the majority of the field. Early applications may allow lower rates, better coverage, and more effective weed control. As with most solutions, small weeds are more easily controlled than large weeds.

**Atrazine 90 DF** at 1.3 pounds per acre plus oil concentrate can be used to control broadleaf weeds up to 4 inches tall after the sorghum has reached the three-leaf stage. Do not use atrazine if the sorghum is more than 12 inches tall.

**Banvel** applications at 0.5 pints per acre alone or with 0.5 to 1.25 pounds active ingredient of atrazine should also be delayed until the sorghum is in the third-leaf stage. Banvel can be applied to sorghum up to 15 inches tall. Use drop nozzles if the sorghum is over 8 inches tall.

**Buctril plus Atrazine** can be applied alone or with Banvel or 2,4-D. The maximum sorghum growth stage for all Buctril plus atrazine treatments is 12 inches. Buctril plus atrazine at the rate of 1.5 to 2 pints per acre can be applied after sorghum emergence. When using the three-pint rate, delay applica-

**Laddok** at 2.4 pints per acre plus either oil concentrate or UAN effectively controls 2- to 4-inch broadleaf weeds and can be applied until sorghum is 12 inches tall. A 3.5 pint rate will control taller weeds and help suppress yellow nutsedge and field bindweed.

**Peak** was recently registered and can be applied at 0.75 to 1.0 ounce per acre over the top of sorghum 5-30 inches tall to control many broadleaf weeds. Crop oil concentrate, or non-ionic surfactant, can be used as a spray additive. Nitrogen solution (28-0-0) may be added with non-ionic surfactant.

**Permit** can be applied at 2/3 ounce per acre over the top of sorghum from the two-leaf stage through layby for control of many broadleaf weeds. Use crop oil concentrate or surfactant as a spray additive. Add nitrogen solution (28-0-0) to improve control of certain weeds.

**Shotgun**, a prepacked combination of 2,4-D and atrazine, can be used for broadleaf weed control in sorghum from the spike to five-leaf stage. Use directed spray on sorghum that is 8-12 inches tall.

**2,4-D amine** at 1 pint per acre or **2,4-D ester** at 0.5 to 1.25 pints per acre can be used on 6- to 15-inch sorghum. Use the 1.25 pints per acre rate of 2,4-D ester for perennial broadleaf weeds. Use drop nozzles if the sorghum is over 8 inches.

John McNamara  
Assistant, Weed Science  
Alex Martin  
Extensin Weeds Specialist

County maps offer information to reduce potential pollution

Pesticide users in Nebraska now have a little help in determining the application methods that best prevent groundwater contamination in their area.

"Pesticides and Groundwater: An Applicator's Map and Guide to Prevent Groundwater Contamination" are now complete for Box Butte, Buffalo, Dawson, Hall, Hamilton, Kearney, Merrick, Phelps, Adams, Cheyenne, Holt and Scotts Bluff counties.

This publication series is being produced by UNL's Conservation and Survey Division and Department of Agronomy and the Nebraska Department of Agriculture. Each four-page guide features a Nebraska county and includes a full-color map indicating the relative vulnerability of areas to contamination and a list of pesticide types and their respective leaching potentials and groundwater contamination risks. Each guide also provides general information about the depth to groundwater, soil conditions, and factors to consider when selecting a pesticide and application method.

Guides are scheduled to be completed by late September for 19 more counties: Sheridan, Morrill, Garden, Deuel, Keith, Lincoln, Nuckolls, Lancaster, Jefferson, Platte, Colfax, Dodge, Saunders, Butler, Polk, York, Seward, Saline and Gage.

Guides are free and available by writing: Conservation and Survey Division-Map Sales, University of Nebraska-Lincoln, 113 Nebraska Hall, Lincoln, NE, 68588-0517.

Jason Grotelueschen  
Editorial Assistant, CropWatch
Adjust harvesting procedures for uneven stands

Wheat producers may face some harvesting challenges with this year's short crop and thin, frail stalks. Adjustments to harvesting procedures and equipment may help maximize harvest production under these conditions.

Although specific harvest remedies will vary from area to area, there are five distinct concerns for producers when dealing with a poor, uneven stand of wheat:

1) weed control,
2) height variability,
3) uneven crop maturity,
4) variability in thick and thin stands, and
5) variability in head and kernel size.

Weed control is a primary concern where patches of unhealthy wheat have given way to thick concentrations of weeds, which can slow harvesting equipment and add high amounts of foreign material to harvested grain. The best way to deal with this problem before harvest is to apply a herbicide as a harvest aid to reduce weed populations (see CropWatch, 96-12). Another method, not common in Nebraska, is to swath the crop and let the weeds dry. If neither method is used, operators must either combine around problem areas or go right through them, neither of which is ideal.

Height variability will be a fairly common problem for wheat farmers in some areas of the state. The best solution is simple to explain but not as simple to do. Operators must be aware of variations in crop height and adjust the header height accordingly as they move across the field. If the header height is too high, low-growing heads will be missed; if it is too low, an excessive amount of straw may be run through the combine.

Dealing with uneven crop maturity is essentially a judgment call by the combine operator. Sections of the field that are not as mature may have high grain moisture content. One way to deal with maturity problems at harvest is to combine around them, then go back later. In good drying weather, this may mean going back within just a couple of days. Although this practice decreases harvest efficiency, the benefits of avoiding problems with grain storage and grain elevator restrictions far outweigh this setback.

Variability in thick and thin stands within a field is another problem that is best solved with good judgment by the combine operator. Operators should vary the speed of the combine to compensate for these changes and adjust header height as necessary. The trick is finding a speed at which there is enough material coming through the combine without decreasing the machine's ability to cut and take in the crop. Careful monitoring of cutter bar performance and header losses will help the operator determine a suitable speed.

The final common concern is the harvesting of a crop with high variability in head and kernel size. Plump, full heads will harvest relatively easily while small, shriveled heads present a problem. Operators may have to adjust the cylinder, rotor speed or concave setting in order to harvest problem areas more effectively. Fan speed may also have to be changed, depending on how much grain loss is occurring.

Two valuable tools that many combine operators have at their disposal are a loss monitor and a yield monitor. Both devices should be properly adjusted before harvest and used often during combine operation. Watching and responding to the information on these monitors can help operators recognize and adjust for the five major problems mentioned earlier.

In some areas of the state that have experienced recent heavy rains, operators may also have to deal with excessive soil wetness. Grain trucks and carts should be kept to the edges of fields or on adjacent roads, and combine operators should be aware of soil compaction problems and closely monitor tire pressure to reduce compaction.

In addition to the obvious monetary reasons for getting as much grain out of the field as possible, it can reduce headaches next season with volunteer wheat. Excessive amounts of wheat lost in the field may pose an expensive volunteer problem during the fallow period or in later cropping.

Jason Grotelueschen
Editorial Assistant, CropWatch
John Smith, Extension Engineer, Panhandle District

June 21, 1996
Equipment adjustments can maximize wheat harvest

Several adjustments to harvesting equipment can help increase its performance in a short, thin wheat crop, according to Randy Taylor, Extension farm machinery specialist at Kansas State University. He shares the following information on adjusting equipment to maximize harvest.

First, the reel must be operating at the proper height and speed so the crop can be gently moved onto the cutter bar. The reel should be set slightly lower and farther forward, square with the cutter bar, and should be operated at slightly faster than ground speed. If the reel is set too far forward, however, the crop will feed in bunches. Also, excessive reel speeds will cause shattering of grain, while a speed that is too slow will not feed crops through properly.

Producers should adjust tine pitch on the pickup reel to hold the crop against the cutter bar, then sweep it into the cross auger. If wheat is extremely thin and/or short, covering the tines with a material such as plywood to make a solid “bat” may help.

The header or cutter bar should be tilted up slightly to allow the reel to operate at a lower height without taking up dirt. Before harvesting, tires should be equally inflated and the header leveled from side to side. Header accumulators should be properly charged.

If possible, the cutter bar should be moved forward to allow the reel to operate lower and sweep across the cutter bar without hitting the cross auger. Knives and sections should be kept sharp and adjusted properly before harvesting. For thin crops, finger extension timing should be adjusted so that the fingers extend later — making sure that the adjustment allows for clearance between the fingers and the platform door.

Many operators tend to drive faster when harvesting short, thin wheat to keep the machine full. Because this often results in poor harvesting performance, the combine should instead be operated in a lower gear with a higher hydrostat setting. The opposite (high gear with low hydrostat) could damage the hydraulic system.

Since harvested grain will likely be lighter than normal and therefore easily lost, it is important to adjust fan settings and sieve openings to minimize grain loss from excess fan blast. The fan blast should be just enough to keep the layer of material on the cleaning shoe suspended.

Finally, Taylor recommends checking the operator’s manual for more detailed information about specific, effective adjustments that can be made on harvesting equipment.

Jason Grotelueschen
Editorial Assistant, CropWatch

What’s causing yellow striping?

We have received reports of and examined corn fields with yellow striping of leaves with a yellowing of the plants. Deficiencies of three nutrients could cause this condition. Most of the reports indicate that it is likely not caused by a nutrient deficiency, but rather is caused by some problem with nutrient uptake. Most likely low soil temperatures in May inhibited root development. Poor root development caused deficiency symptoms in the plants. On some fields the symptoms became worse last week when the temperatures were ideal for growth. The growth rates increased, but the root system was not adequate to keep up.

On the sandy soils of Pierce, Antelope and Holt counties deficiency symptoms that are usually attributed to magnesium have been reported. Magnesium deficiency is possible on acid soils with low cation exchange capacity. Many soils in this area are acid and low in cation exchange capacity. Magnesium deficiency can be induced by excessive application of potassium and or calcium. Water soluble magnesium can be leached.

My guess is that on soils that have low cation exchange capacities, the cold weather which reduced root growth, coupled with a leaching rain induced the apparent magnesium deficiency. Hopefully, warm weather and normal root growth will correct the problem.

George Rehm conducted magnesium studies in the late 1970s and early 1980s and was never able to increase yields on the irrigated sands, even when soil tests were low in magnesium.

Charles Shapiro
Extension Soils Specialist
Northeast District

Get pest updates

Zeneca Ag Products is sponsoring a toll-free hotline for information on crop insect activity (1-888-BUG-NEWS), starting June 15 and running for 10 weeks.

Reports will be submitted by university entomologists in Nebraska, Iowa, Indiana and Illinois. These will be short reports of insect activity (30-60 seconds) and will not get into any detail on management recommendations, so it will not replace other information sources such as CropWatch. This project is an attempt to get timely information out more quickly than we can by newsletters. Try it and let us know what you think.

Robert J. Wright
Extension Entomologist
South Central District
Start preparing now for transition to no-till into CRP next year

As CRP contracts expire, many producers are considering bringing the land back into crop production. In order to conserve soil and water, and to keep the soil building benefits of idling the land for ten years, no-till is the best production system to use. Now is the time to start preparing the CRP land for no-till next year.

Depending on the stand and species of the grass and the amount of maintenance performed, there could be considerable dry matter accumulation in fields coming out of CRP. This residue provides erosion control by absorbing raindrop impact, acts as a mulch to reduce evaporation from the soil surface, and helps build organic matter. However, large amounts of residue, particularly standing dry matter, may interfere with herbicide application to kill the grass.

Mowing or haying the grass the year before bringing the land back into crop production will make it easier by reducing the amount of residue or by improving the distribution. A flail shredder, with good suction uplift, will cutup and distribute the residue most evenly. Too often, rotary shredders leave windows of residue behind them. Sickle bar mowers cut off the grass but do not chop the residue into small pieces.

The mowing should be conducted several weeks before spraying to reduce the residue and to encourage new growth, making it easier to kill the grass with herbicides. The cutting height should be between six and twelve inches, to reduce the possibility of creating a mat of residue on the soil surface. The standing residue remaining won't have to be cut with no-till planting equipment and offers some wind erosion control potential.

The key to effective herbicide application is thorough and complete coverage of green leaves when the grass is actively growing, not spraying stems, residue, or soil. As with any perennial, the best time to apply the herbicide is late summer or early fall while the grass is storing energy in the root system. Warm season or native grasses should be mowed now and sprayed in late July or August. Cool season grasses and legumes could be mowed soon but wait with the spraying until late September or October.

Consult your local NRCS office before mowing or spraying.

CRP lands still under contract. Mowing is usually permitted and often recommended, primarily to reduce fire risk and weed problems. Spraying, however, needs special permission and is usually allowed as long as the cover remains in place until the contract ends. A modification of the CRP guidelines to allow spraying before contract expiration is under consideration at the state level of FSA and NRCS. This spraying in late summer or early fall would be necessary for successful no-till next year, especially into CRP land with warm season or native grasses.

Paul Jasa
Extension Engineer

Registration deadline for Crop Diagnostic Clinics July 1

Crops (and weeds) have been planted, fertilized, inoculated, infested, sprayed, and irrigated in preparation for the upcoming Crop Management and Diagnostic Clinics. Sessions will be July 19-20 and 24-25 from 8:30 a.m. to 5 p.m. at the University of Nebraska Agricultural Research and Development Center (ARDC) near Mead. These two-day clinics are for industry personnel, crop consultants, extension educators and governmental agency personnel, crop managers and producers.

The first day will cover managing insect pests of field crops, including European corn borer, corn rootworm and greenbug; diagnosing herbicide injury, yield losses from weed competition and disease identification. The second day will focus on site specific fertility management using GPS and GIS technologies, nutrient deficiencies, crop residue management, soil compaction, and irrigation scheduling and surge irrigation management. Organizers have applied for 13.5 continuing education units in the certified crop advisor program in the areas of soils and water management, pest management, crop production and soil fertility.

Dr. Dale Flowerday, Professor Emeritus of Agronomy at UNL, is coordinating the preparation of the demonstration plots of these two-day training sessions. UNL faculty teaching at the clinics will include Tracy Blackmer, DeLynn Hay, Paul Hay, Paul Jasa, Alice Jones, Dave Keith, Lenis Nelson, Z B Mayo, Alex Martin, Steve Mason, Jim Peterson, Rick Waldren, John

(Continued on page 102)
Check your soil moisture account before depositing more water

The calendar and the heat hint that irrigation season is near, but before producers turn on their systems, they need to evaluate the rooting depth of their crop and the soil moisture status in that soil layer. Too often, unnecessary water is applied on the first irrigation simply because the soil can’t hold that much additional water this early in the season.

The soil can only hold a certain amount of water in the root zone, depending on soil type and rooting depth. The soil acts as a bank for water, holding about 1 to 1.5 inches of available water per foot on sandy soils or about 2 to 2.5 inches per foot on silt loam soils. With the May rains, the soil moisture profile in irrigated fields across most of the state was fully recharged to six feet, starting the season with a "full account". Crop growth and evaporation from the soil surface have been subtracting from that account and rainfall has been making deposits similar to entries in a checkbook.

Each soil type has a maximum deposit or water storage limit, which is called field capacity. If the soil is filled beyond field capacity, excess water is lost to deep percolation below the root zone, carrying nitrogen with it. If the soil moisture content drops below a minimum balance called the wilting point, about half of field capacity in the active root zone, plant stress may begin. Thus irrigations must be scheduled to supplement rainfall to keep the amount of available water in the root zone between the wilting point and field capacity.

Knowing how much water is already in the soil profile is important because excess deposits are lost. In addition, it is important to know how deep the crop roots are actively withdrawing water. For example, at this time of year, we may have a full profile but the crop roots may be only about 2 feet deep. Assuming a silt loam soil (2 inches available water per foot), plant stress may begin when about half the water is gone. To refill the soil moisture bank in the active root zone completely, only a 2 inch application is needed (2 inches per foot x 2 foot depth x 1/2 gone). This small amount is very difficult to apply with furrow irrigation, especially on the first irrigation.

Applying more water than the soil can hold leads to losses by runoff or deep percolation. In addition, with the profile "too full", little room is left for rainfall, again increasing losses. Some studies show that for every inch of excess water applied, from 5 to 30 pounds of nitrogen are carried away, which results in lower yields and potentially contaminates the groundwater. However, for each inch of water less than full ET demanded by the crop, corn yields can be reduced from 6 to 10 bushels. Thus, the key to irrigation scheduling is applying the right amount of water when the crop needs it, in a manner that makes most efficient use of the irrigation water and most of the rainfall that occurs.

Publications are available at your local University of Nebraska Cooperative Extension office explaining the "checkbook" method of irrigation scheduling and techniques to either estimate or measure the available water in the soil. Proper scheduling makes irrigation more efficient, saving water, energy, and fertilizer, while decreasing the potential for leaching nitrogen and pesticides to the groundwater.

Paul Jasa
Extension Engineer

Crop diagnostic clinic (Continued from page 101)

Watkins, Kelly Wertz, John Witkowski, Bob Wright and Dave Wysong.

The cost of each two-day clinic will be $225 if persons register by July 1. Registration at the door will be $250. Enrollment at each clinic session will be restricted to 60 persons. Participants will receive reference materials, including a notebook. Most of this training will be in the field so participants should bring rain gear if needed. On day one, participants will congregate at the new Research and Education Building at 8:30 a.m. to register.

For more information about this clinic or for a registration form, call Keith Glewen (402-624-8030) or Barb Ogg (402-441-7180). To register, send a check for $225 per person to:

Crop Management and Diagnostic Clinic
RR 1 Box 63A
Ithaca, NE 68033-9731
Phone: (402) 624-8000
FAX: (402) 624-8010

Barb Ogg
Extension Educator
Lancaster County
July 19-20
July 24-25

A two-day intensive training clinic for agricultural professionals

Agricultural Research and Development Center; Ithaca, NE

Presenters

Jane Christensen
Andy Christiansen
Kim Fleming
Ken Frank
DeLynn Hay
Paul Hay
Dave Holshouser
Keith Jarvi
Paul Jasa
Alice Jones
Dennis Kahl
Mark Liebig

John McNamara
Alex Martin
Steve Mason
Z B Mayo
Lenis Nelson
Jim Peterson
Rick Waldren
John Watkins
John Witkowski
Bob Wright
Dave Wysong
Gary Zoubek

Management Team

Keith Giewen
Barb Ogg
Dave Varner

Dennis Ferraro
Dan Duncan
Mark Schroeder

Crop Management and Diagnostic Clinic Field Manager: Dr. Dale Flowerday

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Cost—Includes training, lunches, notebook. $225.00 ($250.00 at the door).
Lodging—Arrange directly with the motel of your choice in Lincoln, Omaha or Fremont. All three communities are within 30-40 miles of the ARDC.
Information—Keith Glewen (402-624-8030) or Barb Ogg (402-441-7180).
All registrants will be sent a confirmation letter (with receipt) and a finalized schedule of the two-day sessions. Limit: 60 people per session.
Registration Deadline—July 1, 1996.

Name____________________________________ Daytime Phone__________________
Address________________________________ State____ ZIP____________
Company________________________________
CCA Certification Number (SSN)________________________
Amount enclosed $________________________

Make checks payable to: University of Nebraska

Return to Crop Management and Diagnostic Clinic,
RR 1 Box 63A, Ithaca, NE 68033-9731.
Phone (402) 624-8000 FAX (402) 624-8010

Application for CEUs has been submitted.

Day two: Crop Growth and Development
- Plant structure and growth
- Irrigation management
- Soil fertility
- Soil quality assessment
- Tillage

Day one: Crop Growth and Development
- Disease management
- Insect pest management
- Weed management

Participants will meet at the ARDC, Research and Education Building on day one at 8:30 a.m., rain or shine. (Bring rain gear)