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Scout fields to determine treatment needs

Western corn rootworm beetles feeding

Weekly scouting for western corn rootworm beetles through August will be helpful in developing an effective control strategy. Western corn rootworm beetles were beginning to emerge at Clay Center on July 8.

Beetles emerging before silking may feed on corn leaves. They feed by scraping the surface tissue, leaving a white parchment-like appearance. Once silks emerge this is the favored food. There are no treatment thresholds for silk-clipping damage based on beetle numbers because damage levels are not correlated well with beetle densities. Usually an average of at least 10 beetles in the silks of an ear are required to seriously affect pollination. Severe silk feeding at 25-50% pollen shed may indicate the need to apply an insecticide, especially in seed production fields.

During August these beetles will lay eggs in corn fields. These eggs overwinter in the soil, hatch into rootworms in the spring, and feed on corn roots if continuous corn is grown. However, not all continuous corn fields will have infestations above economic treatment thresholds.

Weekly scouting of rootworm beetles in July and August will provide the information necessary to decide whether a rootworm insecticide is needed next year. Timing of any spray applications should be based on field scouting results.

Begin scouting for corn rootworm beetles soon after beetle emergence begins and continue scouting weekly until threshold levels are exceeded or beetle activity stops. Examine 50 plants per field, taking samples from each quarter of the field. Sampled plants should be several paces apart, so that examining one plant doesn’t drive beetles off of the next plant to be sampled. The most reliable method is to examine the whole plant for beetles. Beetles may hide behind leaf sheaths or in the silks, so care is required to observe all beetles present. An alternative method is to check for beetles only in the ear zone (the area including the upper surface of the leaf below the primary ear and the under surface of the leaf above the primary ear).

In continuous corn if beetle counts exceed 0.75 beetle per plant, damaging populations of corn rootworms are possible in that field next year. In first year corn, there is a higher proportion of female beetles, so the threshold is lowered to 0.45 beetle per plant. These thresholds are based on a 24,000 plant population per acre. The number of beetles per plant to equal a threshold level should be adjusted for different plant populations. (See Western corn rootworm soil insecticide treatment decisions based on beetle numbers, NebGuide G86-774).

If you’re using the ear zone method, divide the above thresholds in half, since on average only 50% of the beetles on a plant are counted using this method.

In addition to visual scouting methods for rootworm beetles,

(Continued on page 129)
Bob Wright, Extension Entomologist at the South Central Research and Extension Center: We are starting to get reports of spider mites on corn. A crop consultant from Adams County reported finding spider mites at low levels in a lot of fields, and he has one field at threshold levels. With the extended forecast calling for hot dry weather, spider mite problems will likely increase.

Dave Wysong, Extension Plant Pathologist: On short disease survey trips in several southeastern and south central counties, I’m beginning to see gray leaf spot lesions more and more frequently. The incidence is still at very low levels, but growers and consultants should be alert to its development.

For more information on gray leaf spot, see your nearest Extension Office.

Diane Merrell, Coordinator, Plant and Pest Diagnostic Clinic: Samples of stunted, yellowing, unhealthy looking soybean plants that are significantly reduced in size have been numerous this week. The plants show heavy amounts of root rotting. A variety of fungal pathogens can combine to cause the overall root rot problems shown by so many samples.

The roots and below the soil line “stem” area are necrotic and when split in half the rot can be located either on the outer surface where it has destroyed the root vascular tissue or in some cases the disease has rotted the root all the way through. Indications of the fungi Rhizoctonia are the brick-red colored lesions on the main root. Much of the soybean crop was in the ground earlier than usual this year and may have been affected by the surprisingly cold weather the week of May 26. That cool, damp weather was prime for this disease to develop and the ramifications of that early infection is being seen now with the hotter and, in places, dryer weather.

Gray leaf spot continues to stay at low levels. Fields should still be scouted for disease development. At this time the number of confirmed diagnoses of gray leaf spot remain quite low. Only five counties in southeastern Nebraska have had confirmed gray leaf spot infections. With the hit and miss type of rain showers that have occurred and growers using the tolerant hybrids in fields where the disease was present in the past, the amount of infection or even the appearance of gray leaf spot will vary from field to field.

Alex Martin, Extension Weeds Specialist: Producers planning to crop CRP acres next spring should begin weed and vegetation control this summer. Established cool season and warm season grasses and other plant species present in CRP acres will need to be controlled if conversion is to be successful. In many cases, control will improve if begun in the late summer or fall before planting. Grasses need to have 6-8 inches of new growth and should not be under drought stress when herbicide is applied. A shredding now will reduce standing dry matter and allow herbicides to reach the new growth.

Other plant species may include (Continued on page 129)
Scouting for corn rootworms  (Continued from page 127)

yellow sticky traps may be used. Iowa research identified an unbaited Phercon AM trap as the best trap among several tested. Attach traps to the corn plant at ear height and leave in the field for a week. Use 12 traps per field, spread out over the whole field. If beetle counts exceed an average of six beetles per trap per day, this is equal to the treatment threshold. If beetle counts are below this level, continue sampling until the threshold is exceeded or beetle activity stops. Some advantages of using traps over visual examination include:

1) traps catch beetles over several days and average out variation due to time of day or weather; and

2) counts are not influenced by the sampler’s experience or skill.

Traps are available from the manufacturer, Trece (408-758-0204), or from Great Lakes IPM (517-268-5693) or Gemplers (800-382-8473) and cost about $1 each.

Rotating the field out of corn or using an insecticide at planting or cultivation time can help prevent economic damage. Fields remaining below the threshold level do not need to be treated with a rootworm insecticide next year.

Individuals using adult beetle control programs should begin treatments when the beetle threshold is exceeded and 10% of the female beetles are gravid (abdomen visibly distended with eggs). This is an important point since the first beetles to emerge are mostly male, and females require at least 10-14 days of feeding before they can lay eggs. Treatments applied too early may be ineffective if large numbers of females emerge after the residual effectiveness of the treatment has dissipated. Continue to monitor fields weekly after treatment for rootworm beetles. If beetle numbers exceed 0.5 beetles per plant, retreatment is warranted. Late maturing fields are particularly susceptible to corn rootworms moving into them from nearby earlier maturing fields. A complete discussion of adult corn rootworm management can be found in Adult Corn Rootworm Management, UNL Misc. Publ. 63, by UNL Entomologist Lance Meinke. It is available from your local Cooperative Extension

Be aware that reduced adult rootworm control with foliar insecticides due to insecticide resistance has been documented in the Holdrege and York areas (see Crop Watch article, July 19, 1996). If you experience poor control with repeated applications of foliar insecticides, and high numbers of beetles are still present, it may be better to consider rotating that field out of corn next year rather than continuing to treat for beetles.

Rates and restrictions of registered insecticides for adult corn rootworm control can be found on the label or at the UNL Entomology Home Page http://www.iianr.unl.edu/iianr/entomol/fldcrops/fldcrops.htm

Bob Wright
Extension Entomologist
South Central Research and Extension Center

Reports from the field  (Continued from page 128)

average, biennial, and perennial weeds, including woody plants. This vegetation may be controlled by either deep tillage or herbicides; however, deep tillage will expose the soil to erosion. Control started this summer also may diminish potential rodent problems by removing their habitat.

Timing of the herbicide application is important and will vary

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Timing of the herbicide application is important and will vary

slightly depending on local weather conditions. Also, getting good coverage may be a problem. Grazing, haying, shredding, or burning dead vegetation one to two months before herbicide application will remove old growth and stimulate new growth.

For more information on converting CRP to row crops see the April 11 special issue of CropWatch.
Western bean cutworms caught in North Platte light traps

Western bean cutworm moths were captured in light traps near North Platte Tuesday (July 15), indicating the need for producers to begin scouting corn and bean fields.

As field corn starts to tassel, western bean cutworm moths usually begin to fly. These large brown “miller” moths lay eggs on corn and field beans. The eggs are about 1/32 of an inch in diameter and have a sculptured dome shape. The eggs are laid in masses of five to 200, usually on the upper surface of the flag leaf in corn. It usually takes five to seven days for the eggs to hatch.

When first laid, the eggs are white. As they develop, they turn tan and prior to hatch they turn purple. When the larvae hatch, they move to the developing tassel where they feed on the bracts. Western bean cutworm larvae migrate down the plant when the green silk becomes available. They feed on the silks, then move behind the husk and begin to feed on the developing ear. Infestations are severe when more than one larva feeds in an individual ear.

Corn fields should be scouted for western bean cutworm eggs which are found on the upper surface of the flag leaf. Check 25 plants in several field areas. One field check usually represents 10-25 acres thus, larger fields need to be checked in more locations. The check locations should be randomly selected but cover all areas of a field. If 8% of the corn plants checked have a western bean cutworm egg mass or small larvae, consider an insecticide application.

Liquid insecticides applied by an airplane or injected through a center pivot irrigation system typically provide adequate control. Application timing is important — larvae are most susceptible when they are active on the plants. Once the larvae move behind the husks of the ear, they are difficult to control.

Treat a field when it is 95% tasseled but before the larvae reach the silks. For current insecticide recommendations, see Insect Management Guide for Corn and Sorghum (EC96-1509) or the Department of Entomology Home page on the World Wide Web (http://ianrwww.unl.edu/ianr/entmol/entdept.htm).

It is difficult to check field bean plants for western bean cutworm eggs or larvae. The larvae cause damage by feeding on developing seeds. This damage can reduce the yield, but more importantly, it can reduce the quality of the beans. Damaged beans may result in dockage or in some cases, the buyer may refuse the product.

Previous University of Nebraska recommendations for control of the western bean cutworm in field beans has been tied to infestation levels in adjacent field corn. If the field corn needed an insecticide application, the beans probably did too. Recently, pheromone traps have been used successfully to predict western bean cutworm infestations in field beans. A pheromone is a scent produced by female moths to attract males for mating. Pheromone traps are constructed with a milk jug. The sides of a milk jug are removed, the bottom is filled with a water/anti-freeze mixture and a pheromone source is attached to the lid. Male WBC moths are attracted to the pheromone and get caught in the liquid in the bottom of the trap. When the WBC moth flight begins, the traps should be monitored daily and total moths counted. When the moth counts begin to decline, the date of the highest number should be determined and the cumulative number of moths caught from the initiation of the flight until the peak should be calculated. If the cumulative number is less than 700, the risk of significant damage is low. If the number is between 700 and 1000 moths per trap, the risk of damage is moderate. In this situation bean pods should be checked about three weeks after the peak moth flight. If pod feeding is noticeable, consider an insecticide application. If the total moth count is greater than 1000, the risk for damage is significant and an insecticide application should be considered. If an insecticide treatment is required, apply it 10-20 days after the peak moth flight. Although this trapping method is experimental, it has shown promise. Contact me for a source of western bean cutworm pheromone.

Ron Seymour, Extension Assistant
Integrated Pest Management
West Central Research and Extension Center
Stop wheat viruses from spreading

Volunteer wheat must be destroyed by August 1 to prevent carryover of the wheat streak mosaic virus to next year’s crop. Neighbors should cooperate in the effort since the vector can easily travel from one field to the next.

provide background information on wheat streak mosaic and its control. These are available at the local extension office.

Wheat harvest is underway and reports of grain being rejected at elevators because of contamination with ergot or common bunt are filtering into the extension plant pathology office. Both are serious diseases and farmers are put into a dilemma when grain is rejected because of either. If ergot is the problem, the consequences are serious because it is toxic to livestock and humans. Ergoty grain should not be fed to livestock. Modern seed cleaning methods remove many, but not all of the ergot sclerotia from ergoty grain.

Removal of sclerotia by flotation in a 20% salt brine may be effective for small seed lots. The sclerotia float and the grain sinks in the brine solution.

Common bunt is not toxic; however, livestock often refuse to eat it because of the strong odor and low palatability. If the contamination is not too severe, bunted wheat can sometimes be blended with corn as a feed. Diseases Affecting Grain and Seed Quality in Wheat, Extension Circular 97-1874, provides information on several diseases affecting wheat grain and seed quality. This bulletin is for sale at the local extension office.

John E. Watkins
Extension Plant Pathologist

Chinch bugs/greenbugs found in sorghum

Low to moderate numbers (5-100 per plant) of chinch bugs are present in the outside rows of sorghum next to wheat in many fields in southeast Nebraska. Few chinch bugs were detected more than four rows from the field edge.

Chinch bug migration was first detected July 5 and slightly increased numbers were found July 12. Chinch bug migration is fairly late again this year. We do not expect to see serious chinch bug damage in most fields other than in the outside rows next to wheat. Most chinch bugs were late instars and will probably become adults soon.

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Extension Plant Pathologist

For more information on chinch bugs see Chinch Bug Management, NebGuide G86-806, Insect Management Guide for Nebraska Corn and Sorghum, EC 94-1509, or the Sorghum Insect Guide on the Entomology Home Page (http://ianrweb.unl.edu/ianr/entomol/pmguides/sorguide.htm)

Low numbers of greenbugs (0-100 per plant) are still present in many Nebraska sorghum fields. So far the combination of hard rains and an abundance of predators such as the lady beetle have helped keep greenbug numbers low and little damage has been noticed. Greenbugs are just now being reported in Kansas. Corn leaf aphids are abundant in many fields and have attracted many beneficial insects to sorghum fields. Other than exceptionally heavy corn leaf aphid infestations in dry years, we do not recommend control of this pest.

First brood European corn borer damage is very noticeable in many sorghum fields this year. So far the heaviest damage we have found was when 2-6% of the plants were damaged and there was an average of 0.2 live larvae per plant. We do not have an economic threshold for European corn borer in sorghum but this level of damage is probably well below the treatment threshold.

Z B Mayo
Extension Entomologist
**You asked about it . . .**

**Q** There is an old wives’ tale that you should delay the first irrigation to cause the crop to “root down” which will help it later in the growing season. Any truth to this?

**Chuck Burr**
Extension Educator
Clay and Webster counties

Plants will use as little effort as possible to extract water from the soil. A good rule of thumb is the 4-3-2-1 principle: a crop will extract about 40% of its water needs from the top 1/4 of the root zone, about 30% from the second 1/4 and so on. Given this, watering extremely early in the growing season with very shallow application depths, could result in the crop being shallow rooted. Normally, however, by the time the first irrigation rolls around (late June to early July) the crop has rooted to a depth of about three feet, and delaying the first irrigation is not necessary to promote “rooting down”. So, with all due respect to “old wives”, delaying the first irrigation is not necessary to develop a good root system. Perhaps we should start a “new” wives’ tale: using good irrigation scheduling principles can help you best manage your available water resources.

**Brian Benham,** Water Management Engineer
South Central Research and Extension Center

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**Precipitation**

(\(\% = \text{percent of average}\))

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For data on more emergence dates and maturity classes, consider subscribing to the *CropWatch News Service* on the web, where crop water use data is updated daily.

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**Degree day accumulations for wheat, corn, soybeans and sorghum***

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<th>Location</th>
<th>Med. maturity wheat ending on 7/13</th>
<th>Corn ending on 7/13/97</th>
<th>Soybeans ending on 7/13/97</th>
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*Growing degree days to maturity for early season (1), mid season (2) and late season (3) crops:
MC = maturity class
Corn: MC1 = 2400; MC2 = 2500; and MC3 = 2750
Wheat: MC1 = 1600; MC2 = 1840; and MC3 = 2000
Soybeans: MC1 = 1950; MC2 = 2360; and MC3 = 2450
Sorghum: MC1 = 2125; MC2 = 2200; and MC3 = 2369