



PEST MANAGEMENT & CROP DEVELOPMENT

BULLETIN

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Executive editor: Kevin Steffey,
Extension Entomologist

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acesnews@uiuc.edu

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In This Issue

- Mark Your Calendars Now for the 2002 University of Illinois Agronomy Day—August 22, 131**
- Black Cutworm Damage Is Economic in Some Central Illinois Counties, 131**
- “Clouds” of European Corn Borer Moths in the West—Southwest Crop Reporting District, 132**
- Update on Corn Rootworm Hatch, 132**
- Stink Bug Damage Reported in Some Cornfields, 132**
- And More!**

Mark Your Calendars Now for the 2002 University of Illinois Agronomy Day—August 22

On August 22, 2002, the 46th Annual Agronomy Day will be held at the Crop Sciences Research and Education Center (South Farm), beginning at 7:00 a.m. The theme for this year's program is *Agriculture Is Changing: Let Us Show You Where It's Going*. Walking tours begin every 30 minutes, between 7:00 a.m. and 12 noon. This program serves as an annual showcase for faculty to discuss their latest research findings with clientele throughout Illinois and also from neighboring states. The Department of Crop Sciences, in cooperation with some other units on campus, will feature four tours, each with four to five speakers. If you have any additional questions about Agronomy Day, please call Sharon Conatser, Department of Crop Sciences, at (217)333-4424. Aaron Hager is program chair for this event, and he would be pleased to provide any additional information that you may need. Aaron can be reached at (217)333-4424. Topics to be featured at this year's program include the following:

- Resistance mechanisms in waterhemp
- Value-added corn and corn diseases
- Filter strip research and pathogens
- Progress on western corn rootworm research
- Nitrogen and water quality
- SCN resistance and classification
- Control of fumonisin production in corn
- The USDA Germplasm Collection
- Nightshade and giant ragweed
- Computer-aided weed-management recommendations

In addition to the tours, numerous educational displays will be featured beneath the orange and blue “big top.” Presenters will be available to answer questions about the displays. At noon, a special bus tour will highlight some current field research, in which scientists are examining the effects of atmospheric change on crop production (part of the renowned SoyFACE project). For just \$5.00, you can purchase a lunch ticket at the registration table in the tent. I hope you'll join us this year for what should be an informative excursion to the field.—*Mike Gray*

INSECTS

Black Cutworm Damage Is Economic in Some Central Illinois Counties

During the latter half of the week of May 3, we received numerous reports of significant levels of damage caused by black cutworm larvae. All of the reports we received came from a band of counties in south-central, central, and east-central Illinois—Christian, Coles, Douglas, Edgar, Fayette, Macoupin, Montgomery, Moultrie, and Shelby counties. The level of damage in many fields exceeded 5% cutting, so insecticide applications were warranted. In some fields, the damage was severe enough that the farmer decided to replant.

Although reports of severe damage by black cutworms are not widespread beyond the aforementioned band of counties, farmers throughout Illinois should inspect cornfields for signs of cutworm injury. Rapid growth of corn will allow many fields to escape severe cutworm damage. However, black cutworm larvae can eat several small corn seedlings, and timely scouting is the only way to detect the problem before it's too late.

A table with suggested "rescue" treatments for black cutworms was provided in last week's *Bulletin* (issue no. 11, June 7, 2002). I also made some comments about controlling black cutworms when the soil is dry and crusted. Because several people have observed these conditions, you should do everything necessary to enhance control if cutworms seem to be feeding primarily below ground. If you need some reminders about scouting, including information about determining instars and amount of time black cutworms will feed, refer to the article in issue no. 4 (April 19, 2002) of the *Bulletin*.—Kevin Steffey

"Clouds" of European Corn Borer Moths in the West—Southwest Crop Reporting District

Duane Frederking, field sales agronomist with Pioneer Hi-Bred International, and Matt Montgomery, Sangamon/Menard Extension unit educator in crop systems, reported encountering "clouds" of European corn borer moths in grassy areas around cornfields in Cass, Menard, Morgan, and Sangamon counties. Duane's windshield apparently "got plastered" with corn borer moths during a recent drive home at night. They also found some egg masses on some of the corn plants during the week of May 3. The plants they examined were in the 6- to 7-leaf stage. Ria Barrido, an agronomic systems manager with Monsanto Company, found European corn borer egg masses on 4- to 5-leaf-stage corn in Douglas County on June 7.

In last week's *Bulletin* (issue no. 11, June 7, 2002), Mike Gray wrote a detailed article about European corn borers. He and others have observed quite a mixture of corn plant heights across the state. Consequently, the differential corn heights probably will have an impact on survival of this first generation. As we have indicated several times, European corn borer larvae probably will not survive very well on plants less than 16 inches tall (higher levels of DIMBOA). However, if the larvae become established on taller plants, the infestations in west-southwestern Illinois could be significant. Although we have not received reports about European corn borers from elsewhere in the state, we urge people throughout the state to start looking, especially in early-planted fields.

We have become aware of an irresponsible recommendation from an independent consultant in Illinois. Apparently he has recommended application of an insecticide for control of European corn borers on corn that is spiking to 12 inches tall. We cannot fathom the rationale for this recommendation, but we strongly oppose it. This type of recommendation takes advantage of the frustration that a lot of farmers have had with poor planting and growing conditions this spring. Applying an insecticide to corn on which corn borer larvae probably will not survive is a waste of money. We would appreciate your help in contradicting such inappropriate recommendations.

To our readers in northern Illinois, please let us know when you begin to observe European corn borer adults, egg masses, or larvae. Corn in northwestern Illinois was planted relatively early compared with planting times elsewhere in the state, so infestations of corn borers could be significant. Your reports to use will enable us to spread the word.

Refer to last week's *Bulletin* (issue no. 11, June 7, 2002) for information about scouting, making control deci-

sions, and insecticides suggested for control of European corn borers.—Kevin Steffey and Mike Gray

Update on Corn Rootworm Hatch

Last week, we received a report from Larry Bledsoe, an entomologist with Purdue University, regarding the anticipated corn rootworm hatch. Larry indicated that a colleague of his, John Obermeyer, found a second-instar corn rootworm larva on June 4. Based on this observation, they believe that hatch began on May 31 for larvae found at the latitude of Tippecanoe County, Indiana. While troubleshooting fields because of crop injury, don't be surprised to find small corn rootworm larvae. The larvae are quite small; head capsule widths are 0.2–0.23 millimeter, 0.3–0.35 millimeter, and 0.45–0.5 millimeter for first, second, and third instars, respectively. The hatch will proceed for approximately 2 to 3 weeks, as not all larvae emerge from eggs at the same time. Following the larval stage of development, pupation occurs within an earthen cell. The pupal stage lasts from 6 to 13 days. In most years, the first sightings of adult corn rootworms occur near the 4th of July celebration. Let us know when you begin to find corn rootworm injury in your fields. Also, we would like to know how your soil insecticides are "holding up" this year.—Mike Gray

Stink Bug Damage Reported in Some Cornfields

Duane Frederking, an agronomist with Pioneer Hi-Bred International Inc., reported that several cornfields near Beardstown, Cass County, were infested with stink bugs. Infestation levels ranged from 5% to 10% of plants affected. Onespotted and brown stink bugs can be found throughout the North American continent; however, they are especially common in the Midwest. Both species are very

similar in appearance and are easily recognized as brown, shield-shaped insects, measuring 2/5 to 3/5 inch in length and roughly 1/3 inch in width. Onespotted male stink bugs display a dark spot on the undersurface of the abdomen near the wing tips. Not all stink bugs injure crops. The spined soldier bug looks very similar to the onespotted and brown stink bug species. Spined soldier bugs are predaceous and are therefore considered beneficial insects. Predaceous stink bugs have thicker and stouter mouthparts than their plant-eating “relatives.” All stink bugs undergo incomplete metamorphosis, with the immatures or nymphs undergoing several moults (five instars) before reaching the adult stage. The nymphs do not have fully developed wings and display some eye-catching flashes of orange, yellow, and green against a black body. Stink bugs may complete one to three generations per year (latitude dependent), with a complete life cycle requiring 6 to 8 weeks.

Onespotted and brown stink bugs spend the winter beneath vegetation found growing near cultivated fields. Overwintering vegetation may include alfalfa, wheat, or rye cover crops. Stink bug injury to corn is generally favored following a mild winter. Corn that has been planted into a wheat or rye cover crop is more susceptible to economic problems. Both nymphs and adults insert their needlelike mouthparts into the tender stems of corn plants, thereby introducing enzymes into the vascular system of young plants. These compounds can elicit phytotoxic symptoms and/or lead to growth abnormalities, such as “suckering” or profuse tillering. Other symptoms on plants may include the presence of very small feeding holes surrounded by yellow or decaying plant tissue. Severely injured plants may become stunted, wilted, and subsequently die. Stink bug injury limited to even 1 day of feeding has been reported to cause significant yield reductions. Fields most likely to support economic infestations of stink bugs include those fields with seed slots that have not been closed prop-

erly. This often occurs when fields have been planted too wet and/or the planter settings have not been adjusted to match field conditions.

Thresholds have not been developed for stink bug injury to corn. Thresholds that have been developed for cutworms have been used to assist in the decision-making process on occasion. Insecticides that are labeled as rescue treatments for stink bug infestations in corn include *Capture 2EC (2.1 to 6.4 ounces of product per acre), *PennCap-M (1 to 3 pints of product per acre), and *Warrior (2.56 to 3.84 ounces of product per acre). These products are restricted-use insecticides and may be applied only by certified applicators.—*Mike Gray*

Armyworms Here and There

Thank goodness armyworms did not reach the outbreak proportions we experienced in Illinois last year. Farmers have had enough to worry about this spring. Nevertheless, I have received a handful of reports of armyworm injury in corn, primarily in corn planted no-till into rye, alfalfa, or alfalfa/grass mixtures. The reports have come from fields scattered across southern, central, and northern Illinois.

Jim Morrison, Extension educator in crop systems at the Rockford Extension Center, observed armyworms in a few no-till cornfields in JoDaviess County on June 7. The corn had been planted in early May and sprayed with Roundup either just before or shortly after planting. In one field of 3-leaf-stage corn, the armyworms had “cleaned house,” leaving only stubs about 2 inches tall. Armyworm injury in other fields was less extensive. The armyworm larvae ranged in size from very small to about 3/4 to 1 inch long. Randy McElroy, an agronomic research manager with Monsanto Company, observed second-instar armyworms in a minimum-tilled cornfield in Hamilton County on June 12. He found as many as three larvae on one V4-stage plant; an average of 18% of

the plants had been fed on. This report is important to note because the armyworm larvae are far smaller this year than they would have been at this same time last year.

Although we’re into the time of season when corn rootworms and European corn borers capture most of our attention, other insects are still present and causing injury in some fields. As you scout for any insects in corn, keep an open mind about what you might encounter. Our extended cool, wet spring weather has slowed development of most insects, so people are observing insects that usually aren’t of any concern at this time of year.

Look for armyworm larvae in fields most likely to be infested (e.g., no-till cornfields in which grass was plentiful). Also keep an eye on fields of corn adjacent to fields of wheat. Although we have had few reports of armyworms in wheat, it’s still possible for more mature worms to crawl from wheat into corn when wheat no longer is acceptable as a food source. If armyworms are still small and causing extensive leaf-feeding injury, control may be justified. Refer to *Bulletin* issue no. 5 (April 26, 2002) for information about scouting, thresholds, and insecticides suggested for control of armyworms.—*Kevin Steffey*

Insects Interfering with Weed Control

Over the past few years, we (entomologists and weed scientists) have received reports from some farmers who have experienced poor control of giant ragweed after application of a translocated herbicide. In many instances, the weeds that were not killed were infested with a stalk-boring insect that had disrupted the translocation of the herbicide. Although the species of the insect involved was not verified in all fields, stalk borers were responsible for this in at least some of the fields. As you know, giant ragweed is a primary host for stalk borers.

Recently I received a report that some marestalk (horseweed) plants had not been killed after an application of Roundup to a field that had not yet been planted. Two Monsanto Company representatives, Ron Lloyd (agronomic systems manager) and Craig Riley (retail sales manager), dug up some of the surviving marestalk plants and found extensive tunneling in the stems. Instead of stalk borers, they found small beetle grubs feeding in the stems. I inspected the samples and have determined that the larvae are some type of beetle; however, they have not been identified to species.

I will try to have the specimens identified to species by a Coleoptera expert with the Illinois Natural History Survey. We should have additional information about this situation shortly.

If you become aware that insects of any type seem to be interfering with translocation of any herbicide, please contact me or one of the Extension weed scientists, Aaron Hager or Christy Sprague. We are interested in learning more about this phenomenon.—*Kevin Steffey*

WEEDS

Preharvest Herbicides for Wheat

With the wheat crop nearing maturity in southern portions of Illinois, some producers may consider applying a preharvest herbicide treatment to control weeds that could make harvesting operations difficult. Few herbicides are cleared for preharvest applications in wheat. Clarity, glyphosate, and some formulations of 2,4-D are labeled for preharvest applications in wheat. If you intend to plant soybeans after using one of these herbicides as a preharvest treatment, be sure to follow herbicide label precautions. Preharvest treatments in maturing wheat fields often require aerial application, and drift of any of these products out of the target area can seriously injure

susceptible plants (crops, ornamentals, gardens, etc.).

Some 2,4-D labels allow preharvest treatment in wheat after the wheat is in the hard dough stage. Few label specifications are given regarding using treated wheat for seed, but it's probably wise to conduct a germination test prior to planting the seed from fields where 2,4-D was used as a preharvest treatment. Ester formulations are generally more active on weeds than amines, but esters can volatilize more easily than amines, especially when temperatures are over 85°F. Use of amine formulations increases the preplant interval for soybeans. The soybean planting interval after 2,4-D application is 7 days for 1 pint of ester, 14 days for 1 pint of amine, and 30 days for 2 pints of amine or ester formulations.

Several formulations of glyphosate can be used after the hard dough stage (30% moisture or less) and at least 7 days prior to harvest. Application rates depend on the formulation used. Do not apply to wheat grown for seed, as a reduction in germination or vigor may occur. There is no preplant delay before planting soybeans if glyphosate is used as a preharvest treatment in wheat.

Clarity (dicamba) can be used as a preharvest treatment at 8 fluid ounces per acre when wheat is in the hard dough stage and the green color is gone from the nodes (joints) of the stem. Apply at least 7 days prior to harvest. Do not use preharvest-treated wheat for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better. Clarity may be tank-mixed with 2,4-D or certain glyphosate formulations. Following a Clarity application up to 8 fluid ounces, a minimum accumulation of 1 inch of precipitation and a waiting interval of 14 days must occur prior to planting soybean.—*Aaron Hager and Christy Sprague*

REGIONAL REPORTS

Extension center educators, unit educators, and unit assistants in northern, west-central, east-central, and southern Illinois prepare regional reports to provide more localized insight into pest situations and crop conditions in Illinois. The reports will keep you up to date on situations in field and forage crops as they develop throughout the season. The regions have been defined broadly to include the agricultural statistics districts as designated by the Illinois Agricultural Statistics Service, with slight modifications:

- North (Northwest and Northeast districts, plus Stark and Marshall counties)
- West central (West and West Southwest districts, and Peoria, Woodford, Tazewell, Mason, Menard, and Logan counties from the Central district)
- East central (East and East Southeast districts [except Marion, Clay, Richland, and Lawrence counties], McLean, DeWitt, and Macon counties from the Central district)
- South (Southwest and Southeast districts, and Marion, Clay, Richland, and Lawrence counties from the East Southeast district)

We hope these reports will provide additional benefits for staying current as the season progresses.

Northern Illinois

The major activities the past week, where fields were dry enough, included sidedressing corn with nitrogen, postemergence herbicide application, replanting soybeans due to field ponding, and finishing first cutting of alfalfa. Corn populations throughout the area are quite variable.

Jim Morrison, crop systems Extension educator, reports armyworm damage in corn no-tilled into alfalfa. Bean leaf beetles are feeding in soybeans, but there have been no reports of economic damage.

Wheat is starting to turn, and oats are approaching the boot stage.

West-Central Illinois

After a dry weekend, substantial rain fell again on Tuesday, soaking most of the region. Newly constructed waterways, dry dams, and terraces will undoubtedly require some well-deserved attention this fall. Most planting is complete, with the exception of a few soybean fields and some late replanting of corn. The bulk of the fieldwork this past week has been sidedressing of nitrogen on corn, mowing roadsides, and putting hay in the barn. Early-planted corn has progressed well and is anywhere from the V5 to V8 growth stage. Newly planted soybeans are emerging very rapidly and will likely catch up with earlier-planted soybeans. Wireworm feeding has begun to become less of a problem, while the focus switches to corn borer and bean leaf beetle.

Most emerged soybeans are approaching the first trifoliolate, which means that it will not be long before a postemergence application of herbicide will be required in fields where a preemergence herbicide was not used. Keep in mind that, while delaying application of a nonresidual such as glyphosate may reduce the need for retreatment, a substantial reduction in yield may result if early-emerging weeds are allowed to compete with the soybean crop beyond the second or third trifoliolate stage.

Contributing Authors

Mike Gray (m-gray4@uiuc.edu),
Extension Entomology, (217)333-6652

Aaron Hager (hager@uiuc.edu),
Extension Weed Science, (217)333-4424

Christy Sprague
(lsprague@staff.uiuc.edu), Extension
Weed Science, (217)333-4424

Kevin Steffey (ksteffey@uiuc.edu),
Extension Entomology, (217)333-6652

U of I Extension Newsletter Service
University of Illinois
at Urbana-Champaign
528 Bevier Hall, MC-184
905 S. Goodwin Avenue
Urbana, IL 61801

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