Crop Insect Management Update Scheduled

Producers, agribusiness dealers, and crop scouts can gain timely information about corn and soybean insects on Thursday, June 26, at the Crops Training Center, Northern Illinois Agronomy Research Center, 14509 University Road, Shabbona. Corn rootworm, soybean aphid, and western bean cutworm are among the insect pests to be discussed.

The workshop will address field crop insect issues to date this season and others expected to arise through July in northern Illinois. An overview of insect research efforts in 2008, with some background from previous years, will be shared. Presenters will be Dr. Kevin Steffey, University of Illinois Extension entomologist, and extension educators.

The workshop will include hands-on samples, handouts, and viewing of field research trials (weather permitting). Three hours of continuing education units in IPM have been applied for for Certified Crop Advisers.

Registration begins at 8:30 a.m., and the workshop runs from 9:00 to noon (no lunch provided). The cost is $30, and reservations are due by June 23 to Whiteside County Extension, c/o Greg Clark, 100 E. Knox St., Morrison, IL 61270; telephone 815-772-4075. Make your check payable to University of Illinois Extension. Reservations also can be made online at web.extension.uiuc.edu/whiteside.

A workshop brochure is available from Whiteside County Extension and other Extension offices in northern Illinois. At least 20 reservations are needed for the event to be held.

Additional workshops at the Crops Training Center are set for July 18 (corn and soybean diseases) and August 13 (soil fertility and status of the corn crop). The programs are all sponsored by University of Illinois Extension.

—Jim Morrison

INSECTS

All (Mostly) Quiet on the Insect Front

As has been true for several long, soggy weeks, the weather is creating most of the headlines related to crop production in Illinois and elsewhere in the Midwest. So commentary about insect management while crops in many areas are under water or not planted seems relatively insignificant. However, some folks continue to find cutworm activity in cornfields, and a few other insects have been observed, so a brief update is in order. We’ve speculated about as much as we can on the relationship among delayed crop development, wet weather, and insects, so on that topic we will remain mute for this issue of the Bulletin.

During a teleconference on June 2, several extension entomologists in the north-central region provided updates of the insect situation in their states. Although not all north-central states were represented, the general theme
on insect issues in Illinois, Iowa, Kansas, Michigan, North Dakota, and Ohio was “not much is happening.” Among the insect and mite issues mentioned were cutworms (black, dingy, sandhill, variegated, and winter [Michigan, North Dakota]), the appearance of bean leaf beetles, and scattered reports of armyworm, cereal leaf beetle, and wheat curl mite in wheat. Since then, we entomologists in Illinois have continued to receive reports about cutworm injury, mostly in a band across the central third of the state, especially the westernmost counties.

Dan Schaefer, with Illini FS in Tolono, and John Fulton, University of Illinois Extension director in Logan County, both reported some instances of economic and subeconomic infestations of black cutworms in eastern and central counties. John also noted the presence of dingy and variegated cutworms in a few fields. Loretta Ortiz-Ribbing, University of Illinois Extension specialist in Macomb, indicated that a noticeable number of cornfields in her region had been treated for control of black cutworms, and Robert Williamson, with Agrivest in Jacksonville, has reported that fields are being sprayed for control of black cutworms in his area. Loretta also noted the presence of dingy and sandhill cutworms.

In fields that have not been flooded and in which scouting is still possible, continued scouting for cutworms will be necessary for at least two more weeks, depending on the stage of corn growth. When the corn plant reaches the 4-leaf stage or larger, cutting by black cutworm larvae is less likely. However, black cutworm larvae also have a tendency to bore into the bases of larger corn plants, and such injury can kill the growing point. This injury, often referred to as “dead heart,” results in corn plants with wilted center leaves. So until the progeny from black cutworm flights in May develop into pupae and moths, the threat from the larvae persists. (Please note that other pests, including stalk borer, can cause dead heart as well.)

Most of our attention on cutworms is justifiably focused on black cutworms annually. However, the other species mentioned in this article are important, too, some because they might cause economic damage (e.g., sandhill cutworm) and others because they rarely cause economic damage (e.g., dingy cutworm) but may be misidentified as black cutworms.

People who want to learn more about the identification, life cycles, and distributions of cutworms that threaten corn should consider buying the Handbook of Corn Insects, published by the Entomological Society of America and available through APS Press (www.shopapspress.org/haofcoin.html). The cutworm species discussed on pages 68 to 77 in the handbook are black, bristly, bronzed, claybacked, dingy, glassy, pale western, redbacked, sandhill, spotted, and variegated. Most of the discussions are accompanied by excellent photographs from Marlin Rice (Iowa State University, Ames) and Roy Rings (Ohio State University, Columbus). (All other insect and mite pests of corn also are discussed in detail, by the way.) A quick source of discussion and photos of some of these cutworm species is the article “Correct Identification of Cutworm Species Is Important Each Spring” in the Bulletin back in 2001, issue No. 5 (April 27; www.ipm.uiuc.edu/bulletin/pastpest/articles/200105b.html).

Although less than half of the soybeans planted in Illinois have emerged thus far, according to the June 2 issue of Illinois Weather & Crops, bean leaf beetles are finding some of the early planted soybeans. If early planted and emerging soybeans are few and far between, bean leaf beetles will accumulate in relatively few fields. Consequently, the injury could be significant. Direct your scouting energies to the most advanced soybean fields in a given area, and watch for the telltale chewing injury on cotyledons and newly emerged leaves. Under normal circumstances, bean leaf beetles have to be numerous (16 to 39 beetles per foot of row at stage V2+) to cause economic damage. However, with soybean seedlings struggling to grow and considering the current and future values of soybeans, lower rational thresholds can be considered.

If an insecticide for control of bean leaf beetles in soybeans is justified, products suggested for their control in Illinois can be found in Chapter 1, Table 2, page 11, of the 2008 Illinois Agricultural Pest Management Handbook (www.ipm.uiuc.edu/pubs/iapmhl/01chapter.pdf).

It seems trite to say that time will tell what effects delayed crop growth and future weather conditions will have on insect problems in field crops, but it’s true. This spring has been one for some record books, so we should learn more than we already know.—Kevin Steffey

**Just In—Rootworm Larvae Detected in Indiana**

We entomologists in Illinois almost always rely on the careful observations of Larry Bledsoe, research entomologist at Purdue University, for the first report of rootworm larvae during any given season. Just as articles for this issue of the Bulletin were due to the editors, Larry notified us and other Midwest colleagues that he had found first instar corn rootworms on June 4 in Tippecanoe County, Indiana. He and his crew had been examining about 100 plants per day since May 28, and they finally struck pay dirt. Larry estimated that emergence began in his area in 2008 no sooner than June 2, about two weeks later than his observation of first hatch in 2007. Review Mike Gray’s article “Late Corn Rootworm Larval Hatch Anticipated This Spring” in issue No. 9 (May 23, 2008) of the Bulletin to find comparisons of first rootworm larval hatch among the years 1996 to 2007.

It will be interesting to find out how rootworms are affected by the torrential rains we just experienced in much of Illinois on June 3 and 4. Research has revealed that first instars that hatch...
into flooded or saturated soils do not fare well—they cannot locate corn roots, or they drown. Rootworm eggs, on the other hand, have been known to survive flooded or saturated soil conditions. In areas where saturated soils are common, it is likely that rootworm larval populations will experience considerable mortality. So maybe there’s a bit of good news associated with this excessive rainfall. — Kevin Steffey

WEEDS

Considerations for Postemergence Herbicide Applications in Corn

Cornfields across areas of Illinois will soon be treated with various postemergence herbicides to control a broad spectrum of weed species. The forecasted high temperatures will accelerate the growth of emerged weeds, making timely applications of postemergence herbicides a bit more challenging. This article highlights a few considerations for postemergence herbicide use in corn.

Herbicide application timing. The governing principle of postemergence herbicide programs is that crop and weeds can coexist for a critical period of time without resulting in yield loss. Numerous research trials conducted over many years have demonstrated that if weeds are removed within this critical period, crop yield is generally not adversely affected. Thus, the goal of postemergence weed management should be to remove interference from the corn crop before the weeds reduce corn grain yield. The key to success is determining when the weeds should be removed by applying postemergence herbicide(s).

Unfortunately, no one can accurately predict which specific day after planting or emergence weeds begin to reduce corn yield. Weed scientists generally suggest an interval, based on either weed size (in inches) or days after crop/weed emergence, during which postemergence herbicides should be applied to avoid yield loss through weed interference. This interval for corn is often recommended to be before weeds exceed 2 to 4 inches in height. If weeds are allowed to remain with the crop past this size range, the risk of crop yield loss substantially increases. Apart from preserving crop yield, another advantage of removing weeds at these suggested sizes is that small weeds are usually much easier to control than large ones.

Staging the corn crop. The labels of most postemergence corn herbicides include application restrictions based on a maximum corn size (specified as corn height or as leaf or collar number, or sometimes both). For product labels that indicate a specific corn height and growth state, be sure to follow the more restrictive of the two. If these restrictions are not followed, there can be substantial injury to the crop that may lead to yield reductions. Adverse environmental conditions (such as prolonged periods of cool air temperatures) can sometimes result in corn plants that are physiologically older than their height would suggest, so be sure to accurately assess plant developmental stage by leaf/collar number in addition to plant height.

Corn response. Corn plants under stress may be more prone to injury from postemergence herbicides. Stress can arise from a number of factors, including cool temperatures and wet soils. Be sure to consult the product label when selecting spray additives to include with postemergence herbicides. Many labels suggest changing from one type of additive to another when the corn crop is experiencing stressful growing conditions. Attempting to save a trip across the field by applying a postemergence corn herbicide with a liquid nitrogen fertilizer solution (such as 28% UAN) as the carrier is not advisable. While applying high rates of UAN by itself can cause corn injury, adding a postemergence herbicide can greatly increase corn injury.

Herbicide–insecticide interactions. Labels of several postemergence corn herbicides (most commonly ALS-inhibiting herbicides but also some HPPD-inhibiting herbicides) include restrictions with respect to applying the product to corn previously treated with certain soil insecticides. Be sure to consult the respective herbicide label for other restrictions and limitations.—Aaron Hager

CROP DEVELOPMENT

Nitrogen Applications for This Spring

We continue to stay excessively wet this spring, with several additional inches of water falling in the first days of June. The big questions for many people now are whether they will have a crop worth harvesting this year and whether to replant corn or plant an alternative crop; these topics have been addressed in recent articles in the Bulletin. Another question people are asking is whether they have sufficient nitrogen (N) in their fields and what to do if they find they do not.

The first point to be remembered is that whether planting was delayed or not, the cool and wet conditions prevailing this spring have caused, and continue to cause, reduced yield potential. At this time it is difficult to know exactly what the reduction may be, because much will be dictated by weather conditions later during the summer. What is certain is that we should be very cautious about application of additional N this spring, for two main reasons: if the later part of the season turns out to be limiting for yield, there is very little likelihood that N in addition to that already applied in fall or preplant will increase yield; and the risk of not recovering the investment on expensive nitrogen is high, not only because of the possibility of low yields but also because, depending on weather conditions in the next two weeks, important decisions on replanting or replacing with a different crop altogether will have to be made in many cases.

It is challenging to expect patience at this time, but the best advice is to
wait to apply N until weather conditions allow a more informed decision. Research in Illinois has shown that there is no yield reduction due to N if applications are done before the 5-leaf stage. This is because most soils in Illinois can provide sufficient N to satisfy the demands of young corn plants. After about the 7- to 8-leaf stage, N uptake is rapid until after pollination. So if supplemental N cannot be applied before the 5-leaf stage, it is critical to apply it as soon as possible before the 10-leaf stage and definitely not later than tasseling.

At present there are no soil tests that provide very reliable information to determine how much N will be available and whether additional N is needed at side-dress time. The preside-dress soil nitrate test (PSNT) can help determine the amount of organic N that will be available to the plant through mineralization. However, accurate collection of samples is critical to obtaining reliable information from the test. Soil samples should be collected when corn is in the 4- to 6-leaf stage to a soil depth of 12 inches, and each sample should be a composite of at least 10 cores (15 to 25 are recommended). Due to the difficulty in obtaining an adequate sample, this test is not being used extensively. If nitrogen results are greater than 25 ppm, the chance of increasing yield with additional N under typical growing conditions is very small. This interpretation is especially true for 2008. Due to the excessive rain, even if test values are below 10 ppm I would not apply a large amount of N. A more practical approach to determining whether additional N is needed is to perform strip N applications in a field to see if there is a response in growth or level of greenness.

Another possible method to determine the need for additional N is estimating the amount of nitrate N from N applications that have been lost. In an earlier article in the Bulletin I mentioned that the wet conditions in the early spring were not a cause to be overly concerned about N loss since the soils were still cool and not much conversion of ammonium to nitrate had likely taken place. By now, warm soils (temperatures well above 70°F) allow bacterial activity and conversion of ammonium to nitrate. Likely more than three quarters of the ammonium from fall anhydrous ammonia applications has been converted to nitrate by now. For early spring preplant N applications, probably half of the ammonia has been converted to nitrate. Of course, bear in mind that if an inhibitor was used these values will be lower.

Between the short window for application and limited supply of anhydrous ammonia last fall and the slow start to the growing season this spring, many have applied N in the last two weeks. This application, especially if anhydrous ammonia was used, would still be largely in the ammonium form and not subject to loss at this time. On the other hand, if the application used sources that contain nitrate (such as urea-ammonium nitrate), 25% of the N is in the nitrate form at the time of application.

Typically for Illinois, N losses occur mainly via denitrification in fine-textured soils. But the substantial rainfall (several inches in some areas) occurring in the first days of June on soils that were already moist could also result in substantial amounts of nitrate being leached out of the root zone. Still, denitrification is a great concern due to the warm soil temperatures combined with continuing excessive rainfall, causing fields to be saturated. Denitrification of nitrate in fine-textured soils can be significant under saturated conditions at this time of the spring. Research conducted in Illinois has shown that when soil temperatures are above 65°F, 4% to 5% of the nitrogen in the nitrate form (not the ammonium form) can be lost for each day that soils are saturated. Having an estimate of how much nitrogen is in the nitrate form and knowing how many days the soils are saturated can be used to estimate N loss via denitrification. The following is an example:

If 50% of a 140 lb N application is in the nitrate form, and soils are then saturated for 5 days, the N loss estimate would be (140 lb N per acre X 50% nitrate/100) X (5% per day/100) X (5 days) = 17.5 lb N per acre.

Having said all of this about N loss, I would like to reiterate the need to be extremely cautious about going out and applying additional N at this time. It is important to remember that some yield potential has been lost, and important planting decisions will have to be made in the next two weeks. Under present conditions, I doubt that supplemental N above 60 to 80 lb N acre-1 would be necessary to maximize yields.

If additional N applications are deemed necessary in your field, reduce the chance of crop injury from free ammonia by making sure soil conditions are adequate for applying anhydrous ammonia. Other alternative N sources (listed from most to least desirable) include application of UAN solution between rows, broadcast of solid ammonium-containing fertilizers, broadcast urea, dribble UAN solution between rows, and broadcast UAN solution. —Fabián G. Fernández

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 South- west districts, and Peoria, Woodford, Tazewell, Mason, Menard, and Logan counties from the Central district)
• East-central (East and East South- east 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.

East-Central Illinois

The Decatur–Champaign area has received more than 5 inches of rain since last Friday. Little fieldwork has occurred, and significant ponding may cause localized crop problems. Prior to the storms, farmers were finishing up soybean planting.

From Don Frederick in Cumberland/Jasper Extension: “Although periodic showers have occurred in the past seven days, farming has progressed. The corn crop is nearly all in the ground, and the replant corn may soon catch up with the earlier planted fields. Soybean planting is approaching 70% completion. Haying is occurring between rain showers, and the wheat crop is progressing quite nicely.”

Northern Illinois

Corn planting is complete throughout the region; soybean planting is about 85% complete but varies. Field activity has been minimal in most areas from May 25 through June 4 due to several thunderstorm events. Field work that did occur focused on soybean planting, herbicide application, and sidedressing anyhydrous ammonia.

The warmer temperatures have greatly improved the appearance of the corn crop, and soybeans are beginning to emerge. Wheat is headed, and no reports of widespread diseases have been received. The wet weather has made alfalfa harvest difficult, with some fields yet to be harvested.

Southern Illinois

Continued rainfall during the past week has prevented any significant planting progress. While some cornfields remain untouched, others have been replanted—in some cases twice—and are still failed. Some fields are beginning to show emerged corn with adequate stands, but that is by far the exception.

Hay harvest has also been a challenge. Fields where producers were lucky enough to have harvested haylage in early May are now awaiting dry weather for the second cutting to be taken. Many other fields are in full bloom, lodged, and still waiting for first cutting. In between are the fields that were cut and rained on several times in late May before the hay was gotten off.

Wheat is beginning to lose its bright green color as it begins the approach to physiological maturity. In spite of wet conditions, wheat remains the bright spot in this year’s crop production, and growers are wishing they had more acres of it.

The annual Ewing Field Day will be held Thursday, June 12, beginning at 9:00 a.m. Topics will include wheat production, corn replanting decisions, and crop insurance issues. The Ewing Demonstration Center is about 12 miles northeast of Benton. From Illinois Route 37, turn east on Ewing Road and watch for signs. If weather conditions are questionable, call 618-242-9310 heading out.

West-Central Illinois

Soybean planting progress is varied across the west-central region. Depending on location, beans may stand at 80% planted or 80% yet to be planted. Recent rainfall has also been varied. A few to several inches were poured on much of the region; depending on the total, the precipitation is seen as a benefit or a detriment. The weather conditions have hampered progress on the first cutting of alfalfa, which is struggling to get underway throughout the region.

Wheat is headed out, with mild disease pressure in most of the district. Fungicides have been the topic at hand in wheat production circles, with a lot of material applied to wheat over the last week.

Corn averages about 3 leaves in the region. Plant color is a concern in some fields. A few fields have displayed some superficial tissue injury that may be a result of low temperatures encountered a few weeks ago. Others display tissue injury associated with surfactants—a perennial but minor problem. A few fields are simply suffering from wet feet (or in this case roots), imparting an off color to the plant. Some fields have progressed past these issues and are greening up, while others continue to struggle.

Cutworms continue to be a topic of discussion in corn, with some early season winter annual problems apparently providing an imidacloprid-free food source that has led to impressive cutworm sizes in otherwise treated seed. Many populations are presenting a confusing decision for producers who find injury just shy of recommended thresholds.

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