Corn and Soybean Insects Discussed at Crop Session

Producers, agribusiness dealers, and crop scouts can gain valuable information about seasonal corn and soybean insect pests at a workshop on June 30. Western corn rootworm, soybean aphid, and western bean cutworm, among other insects, will be discussed at the Crops Training Center on the Northern Illinois Agronomy Research Center, 14509 University Road, Shabbona. The workshop will provide an update on corn and soybean insect problems, ongoing research, and management strategies. University of Illinois Extension entomologists will lead the discussion.

The workshop will include hands-on samples, handout materials, and in-field activities (weather permitting). Continuing education units have been applied for for Certified Crop Advisers.

Registration begins at 8:30 a.m., and the workshop will be conducted from 9:00 to noon (lunch is not provided). The cost is $25; reservations are due by June 23 to Whiteside County Extension, c/o Greg Clark, 100 E. Knox Street, Morrison, IL 61270; telephone (815)772-4075. Make checks payable to University of Illinois Extension.

A brochure for the workshop is available from Whiteside County and other Extension offices in northern Illinois. A minimum of 20 reservations is needed.

Another workshop on August 9 will emphasize nitrogen fertility and weed control management. The programs are sponsored by University of Illinois Extension.—Jim Morrison

Reminder: Weed Science Field Tour on Wednesday, June 21

We invite you to make plans to attend the 2006 University of Illinois Weed Science Field Day on Wednesday, June 21, at the Crop Sciences Research and Education Center (aka South Farms). The center is located south of the main campus and north of Windsor Road. Registration begins at 8:00 a.m. at the Seed House, and we’ll begin the tour at 8:30 with introductory remarks before carpooling to the field. The tour will provide ample opportunity to look at research plots and interact with weed science faculty, staff, and graduate students. Participants can compare their favorite corn and soybean herbicide programs to other commercial programs and get an early look at some new herbicides. Other highlights include a corn replant study and a demonstration of one-pass programs in corn and soybean. The tour ends with lunch at noon. The $15 registration includes a tour booklet and lunch ticket. CCA credits in IPM will be available. If you have questions or would like additional information, please call (217)333-4424.—Aaron Hager, Dawn Nordby, and Doug Maxwell

INSECTS

Corn Rootworm Injury Becoming Noticeable

The numbers of reports from people who are finding corn rootworm larvae and observing root-feeding injury have increased over the past week. In some areas where soil moisture is short, corn rootworm larval injury is adding insult to injury. Joe Spencer, research entomologist at the Illinois Natural History Survey, found plenty of second- and third-instar rootworms feeding on unprotected corn in his plots on June 12 and 13. The soil in his plots is dry, and the injured plants have rolled leaves during the day. Injury
to the roots is becoming noticeable, with tunneling and some pruning occurring. On a positive note, the YieldGard Rootworm hybrid in his study has not been injured by rootworm larvae and is not showing signs of moisture stress. Clayton Mai, seed specialist/APS, has found rootworm larvae tunneling in roots of V10-stage corn planted after soybean in northern Greene County.

With predicted high temperatures and a continued lack of rainfall in some areas, the incidents of rootworm injury will increase. We encourage people to begin checking cornfields now for rootworm larvae and their injury. Although the full extent of rootworm injury in any given field will not be realized for a month or more in many areas, some investigation now might provide an early assessment of the impact of rootworm larvae on corn production. You might also get a head start comparing rootworm injury in untreated areas with rootworm injury in protected corn (i.e., protected with a soil insecticide, seed-applied insecticide, or transgenic Bt protein).

In a future issue of the Bulletin, we’ll provide more detail about rating roots for rootworm injury using a scale that quantifies the amount of injury to a root system. — Kevin Steffey

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**Soybean Aphids in Soybean Fields in Illinois**

With reports of soybean aphids beginning to colonize soybean fields in the upper Midwest, it was only a matter of time before someone found soybean aphids in soybean fields in Illinois. Our first 2006 report came from Ryan Stoffregen, Advanced Crop Care, on June 8. Initially he reported very low numbers of soybean aphids in soybean fields in Boone and DeKalb counties. On June 12, Ryan reported finding soybean aphids on about 20% of the plants in a soybean field near the McHenry-Kane county line. There were three to four aphids per infested plant, and ants were climbing plants to harvest the aphids’ honeydew. A field in Boone County had about an 8% infestation, with three to four aphids per plant.

Beginning the week of June 12, we began weekly monitoring of 26 fields from Woodford County to Stephenson County. Our surveyors will monitor 10 fields at various distances from the suction trap near Metamora (Woodford County), 10 fields at various distances from the suction trap near Freeport (Stephenson County), and six fields between the two locations (in Marshall, Putnam, Bureau, Lee, Whiteside, and Ogle counties). The soybean plants were quite small (VC to V3) on June 12 and 13 during the first monitoring trip, but the surveyors already had observed soybean aphids. One soybean aphid was found on one V1-stage soybean plant in Woodford County on June 12, but aphids were slightly more common in the more northern fields. As many as three aphids were found on individual plants in Marshall, Putnam, and Bureau counties on June 12, and a high of eight aphids was found on one plant in a field in Stephenson County on June 13. At least one soybean aphid was found in four of the 10 fields sampled in Stephenson County.

I report these very low numbers only to give a baseline indication that soybean aphids are beginning to colonize soybean fields in northern Illinois, an indication that should intensify scouting efforts. With the predicted high temperatures, the development of soybean aphid populations will slow down, at the very least, and possibly stop if temperatures exceed 90°F. However, it’s far better to be aware of early-season infestations of soybean aphids than to be surprised by large colonies later in the summer. As I indicated in last week’s issue of the Bulletin (issue no. 11, June 9, 2006), insecticide applications at this time are neither warranted nor beneficial.

Our two surveyors observed insidious flower bug nymphs in one field in Woodford County, suggesting that these early-season predators could be waiting for soybean aphids when they arrive. (Well, actually they’re not “waiting”; they’re feeding on other insects already present in the field.) Research conducted by entomologists at Purdue University suggests that these predators may be responsible for suppressing soybean aphid populations early in the growing season, leaving the cleanup for multicolored Asian lady beetles later in the summer.

We will keep you apprised of our findings weekly throughout the summer, and we invite you to do the same with us. The more in-field observations of soybean aphids we have, the better we can assess the extent of a soybean aphid outbreak, or lack thereof.

— Kevin Steffey

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**Corn Borers Deserve Attention in Some Areas of Illinois**

I use the phrase “corn borers” in a broader sense for this article. Although most people in Illinois are concerned primarily with European corn borers, corn growers in Illinois are continually reminded of the threat posed by southwestern corn borer, which, insect for insect, actually causes more damage to corn. I’ll try to assess the current situation with each borer.

Mike Roegge, crop systems Extension educator in Adams County, found a fairly healthy infestation of first-generation European corn borers in early-planted sweet corn on June 7, with 35% to 65% of the plants infested. Second instars were feeding in the whorls, resulting in noticeable windowpane feeding injury when the leaves unfurled. Jim Donnelly, crops specialist with Ag View FS in Walnut, found first instars in early June in an early-planted cornfield. About 10% of the plants also had egg masses. Elsewhere, we have information about flights of European corn borer moths, ranging from virtually zero in southern Illinois (refer to the “Hines Report” at www.ipm.uiuc.edu/pubs/hines_report/comments.html) to “noticeable” in some northern Illinois counties. I enclose the word *noticeable* in quota-
tion marks because European corn borer moths have been decidedly not noticeable over the past few years.

Although we usually can’t correlate results from our annual fall survey with the occurrence of first-generation European corn borers the following year, we know that large numbers of overwintering larvae increase the potential for infestations of first-generation larvae. Thus far, it’s interesting to note that the reports of noticeable infestations of first-generation European corn borers have come from areas with relatively larger populations of overwintering larvae (primarily western counties). You can refer to the results from our 2005 survey at www.ipm.uiuc.edu/fieldcrops/insects/european_corn_borer/index.html. Although European corn borers have not garnered much attention in recent years, we don’t want to forget that they still have potential to cause significant yield losses in fields of non-Bt corn and in non-Bt corn refuges. If you have not already begun to look for symptoms of injury caused by first-generation European corn borers, you should start now. If necessary, European corn borers can be controlled effectively with insecticides while borers are still small (first, second, and third instars) and feeding in the whorls. When larger larvae bore into stalks, they cannot be controlled with insecticides.

For information about the biology and life cycle of European corn borers, refer to our fact sheet at www.ipm.uiuc.edu/fieldcrops/insects/european_corn_borer/factsheet.html.

The southwestern corn borer situation seems to be more threatening than the European corn borer situation in southern Illinois. Ron Hines, senior research specialist at the Dixon Springs Agricultural Center, reported captures of large numbers of southwestern corn borer moths in his trap in Massac County (577 captured during the week ending June 13: www.ipm.uiuc.edu/pubs/hines_report/comments.html). The numbers of moths captured at the Massac County location have increased steadily since the week ending May 30.

Bt corn has been effective for controlling southwestern corn borers in the United States, but non-Bt corn, including non-Bt corn refuges, is at risk. Scouting for first-generation southwestern corn borers should commence immediately in southern counties. By keeping track of when southwestern corn borer moths have been captured in your area, you can begin to estimate important life-cycle events for this insect. After 190 heat units (base 50°F) have accumulated beyond the initial flight of southwestern corn borer moths, first instars can be found; second instars can be found at 361 heat units; third instars at 533; fourth instars at 713; fifth instars at 902; pupation at 1,153; and emergence of adults at 1,321. At the very least, you should be looking for egg masses and early instar larvae before the larger larvae begin to tunnel into stalks.

Each female southwestern corn borer moth deposits eggs in masses on the upper and lower surfaces of corn leaves. Female moths lay approximately 250 eggs over a 5- to 7-day life span. Eggs are yellow-green when first laid, but after 36 hours they become cream colored, with three orange-red lines on each egg. Economic infestations of the first generation of southwestern corn borers are not common, and they most generally occur in corn planted near last season’s infested and undisturbed corn residue. Yield losses caused by subsequent generations of this pest can be significant due to stalk lodging caused by the girdling of plants by larvae.

Small southwestern corn borer larvae might be confused with European corn borer larvae. However, a southwestern corn borer larva appears to have indistinct bands across its body, from which hairlike setae arise. The bandlike appearance becomes more pronounced as the larvae grow, until the spots formed by the tubercles (small, knotty lumps) become visibly distinct in the fourth instar. The last (fifth) instar has very distinct, large, dark tubercles. Like European corn borers, the last two instars tunnel in the stalk. If you have a good magnifying glass or microscope and a little patience, another characteristic also distinguishes the two species. On the bottom of the prolegs (the peglike false legs on a caterpillar’s abdomen) of the southwestern corn borer, the tiny hooks (called crochets) form a complete circle. On a European corn borer larva, the crochets on the bottom of the prolegs do not form a complete circle.

Whorl-feeding injury caused by southwestern corn borer larvae can be confused with injury caused by both European corn borers and fall armyworms. Early instar southwestern corn borer larvae “windowpane” the leaf tissue, much like small fall armyworms; however, the windowpaning usually is more extensive. Injury caused by larger southwestern corn borer larvae resembles whorl-feeding injury caused by European corn borers, except more leaf tissue is removed. The injury is less ragged-looking than injury caused by fall armyworms, and southwestern corn borer larvae do not produce the dark, coarse frass produced by fall armyworms.

Bt corn probably has suppressed corn borer populations in Illinois and elsewhere in the Midwest over the past few years. However, environmental conditions can benefit survival of both European and southwestern corn borers, so we need to keep both species on our scouting checklists. — Kevin Steffey

Some Dry-Environment Insect Problems—Grape Colaspis and False Chinch Bugs

When I receive reports of both grape colaspis injury (especially in soybean) and false chinch bugs, I am always reminded of 1988. Not that I am predicting a drought, but both of these insects caused significant problems early in the season in 1988, to be overshadowed later by twospotted spider...
mites. We have not received a large number of reports of these two insects causing problems, but the reports are worth mentioning nonetheless.

Let’s start with grape colaspis. In issue no. 10 (June 2, 2006) of the Bulletin, I wrote about grape colaspis larvae injuring corn. Since that article was published, a few more reports of such injury have trickled in, primarily from north-central Illinois. The symptoms reported were classic—stunted plants, purple stems, “burned” leaf edges, classic symptoms of phosphorous and potassium deficiencies. These symptoms arise from the colaspis larvae basically denuding the roots of root hairs.

Although grape colaspis and corn are most commonly associated, grape colaspis larvae also can injure soybean. Grape colaspis injury to soybean was relatively widespread in 1988 when soybean seedlings were struggling to grow in dry soils. Hundreds of fields were affected, with as much as 95% stand reduction in a few fields. However, it’s important to note that most of the affected soybean fields were soybean planted after PIK (payment-in-kind) acres on which legumes (e.g., clover, alfalfa) had been grown. We received few reports of grape colaspis damage in fields of soybean planted after corn. Nonetheless, it’s worth keeping grape colaspis larvae on the “culprits-to-consider” list.

On June 13, I had a telephone conversation with a grower in Macoupin County who suspects a grape colaspis problem in a field of soybean planted after red clover (almost a dead giveaway). Although I have not seen the insects firsthand, the description of the larvae and the situation have grape colaspis written all over them. Grape colaspis larvae chew tunnels and occasionally girdle soybean roots, resulting in plants that wilt and often die. As is the case with corn, rescue treatments are not effective. Replanting is the only solution, but the overall cost of replanting must be considered before making such a decision at this late date. Fortunately, grape colaspis larvae should finish feeding by mid- to late June, depending on the location, after which they will pupate and eventually emerge from the soil as beetles.

Now, let’s turn our attention to false chinch bugs. I always associate the phrase “The ground seemed to be moving” with false chinch bugs because their sheer numbers in a given field can be awe-inspiring. Robert Bellm, crop systems Extension educator in Edwardsville, visited an 80-acre soybean field in Jersey County on June 7 and discovered patches of injury caused by false chinch bugs. The soybeans had been planted no-till into cornstalks, and there had been a heavy infestation of shepherd’s purse and pennygrass. The false chinch bugs seemed to be most prevalent in areas infested with shepherd’s purse. Conditions in the field were very dry.

False chinch bug nymphs are ash-gray with brown-white mottling on the back and red mottling on the abdomen. Adults are 1/8 inch long, dirty gray, with brown or black markings. False chinch bugs prefer to feed on plants in the mustard and beet families, but they have been known to cause injury to both soybean and corn. Both the nymphs and adults use their piercing-sucking mouthparts to feed on plant fluids, and injured plants wilt and may die.

So far as I know, there are no insecticides labeled for control of false chinch bugs, probably because these insects occur so infrequently. If anyone working for an insecticide manufacturer wishes to correct me, please contact me and I will share the information with our readers.—Kevin Steffey

More Insect Events of Note

Ron Hines, senior research specialist at the Dixon Springs Agricultural Center, reported captures of Japanese beetles at five of his six trap locations—Fayette, Massac, Pope, Pulaski, and St. Clair counties—during the week ending June 13. We should begin to observe Japanese beetle adults soon in central and northern counties. They may move first to flowering weeds and flowering plants around homes, but we’ll have to keep a watchful eye on pollinating cornfields and on soybean fields.

Ryan Stoffregen, Advanced Crop Care, noted a marked increase in armyworm activity in wheat in northern counties over the past week, with densities ranging from 1 to 2 larvae per foot of row (most common) to 4 to 5 per foot of row. The sizes of the larvae he found varied considerably, and most of the feeding was confined to the leaves on the lower half of the plant. However, as the larvae grow, they will continue eating leaves, moving upward toward the heads. If they begin devouring flag leaves or clipping the heads, yield losses may occur.

Few people encounter garden symphyllans in corn, but these arthropods can cause noticeable injury. David Keimig, field sales agronomist with Pioneer Hi-Bred International, has found garden symphyllans and symptoms of their injury in a couple of fields in northern Illinois. Injured plants were stunted, and the injury was most common in areas of the fields where the soil was very loose. Kevin Black, insecticide/fungicide technical specialist with Growmark, reported that an FS crop specialist also found garden symphyllans causing injury to corn near Arlington. Garden symphyllans are not insects, nor are they centipedes, despite their numerous legs (adults have 12 pairs of legs). They are small white arthropods, measuring 1/4 inch or less. They feed on the roots, often stripping root hairs. Injured plants often grow past the injury if growing conditions are suitable.

Stink bugs seem to be uncommonly common in some areas of Illinois this year. Matt Montgomery, crop systems Extension educator in Springfield, reported considerable stink bug injury in cornfields in Menard and Sangamon counties. He indicated that most of the injury was not economic, at least on a fieldwide basis, but that the injury was quite noticeable. Kevin Black also has received a fair number of reports of stink bug injury.
We currently have no explanation for the increased frequency of stink bug injury in corn in 2006, but we’ll do what we can to determine any common threads among fields with injury.—Kevin Steffey

**PLANT DISEASES**

**More Soybean Seedling Blight Concerns**

Several areas of the state have already been affected by seed rot and seedling blight, resulting in the need for replanting. Now is the time to begin looking for soybean seedling blights. Seedling blights are caused by a number of soilborne fungi that infect the roots of soybean seedlings. Wet conditions favor the development of seedling blights in soybeans. Seeds may simply rot in the soil, or the seedling itself may wilt and die shortly after emergence (damping off). Three genera of fungi (Rhizoctonia, Pythium, and Phytophthora) are responsible for most of these rots.

Although you can typically expect to see root rot diseases such as Pythium and Phytophthora in low, poorly drained areas, they are not always specifically limited to those areas, especially taking into consideration the wet weather conditions we have experienced thus far in the growing season. The diseases have similar symptoms: brown rotted roots with an absence of secondary roots. Also, both diseases typically kill the seedling. They are undistinguishable in the field and must be identified in a lab to be separated. This is important for future management options. While fungicide seed treatments are available that effectively control both Pythium and Phytophthora, only Phytophthora can be managed by the use of resistant varieties.

Other seedling root rots to look for now are Fusarium and Rhizoctonia root rot. These two fungi cause what is termed a “dry rot.” Both can cause a reddish brown canker, usually at the soil line, and a dry-type rot of the roots. Like the wet rots, the dry rots are virtually undistinguishable in the field. And to further complicate the situation, the two fungi are often found together. Both Fusarium and Rhizoctonia seedling blight are less environmentally limited than Pythium and Phytophthora. In other words, you won’t just find them in the wet spots in the field. Given optimal growing conditions, seedlings can recover fairly well from the dry rots. Fungicide seed treatments are an effective option for management.

Control of seedling blights is based on using good agronomic practices (well-prepared seedbed, high-quality seed), planting resistant varieties when appropriate, and using selected fungicide seed treatments. For a list of these seed treatments, see “Pythium Rots” in issue no. 9 of the Bulletin this year (www.ipm.uiuc.edu/bulletin/article.php?id=531). Any practice that encourages rapid emergence of seedlings will help minimize the impact of seedling blights. Plant resistant or tolerant varieties of Phytophthora (none are available for Rhizoctonia or Pythium), and apply preventive seed or soil treatments based on the knowledge of the disease or diseases present.—Suzanne Bissonnette

**Amended Section 18 for Headline SBR Fungicide**

The label for the soybean rust section 18 product, Headline SBR fungicide, from BASF has recently been amended for Illinois, Indiana, Michigan, and New Jersey. The following changes were approved by the U.S. EPA:

- Application rate was changed from 7.8 ounces per acre to 5.9 to 7.8 ounces per acre.
- The corresponding area to be treated with a single container was changed from 35 acres to 35 to 46 acres.
- The retreatment interval was changed from 21 days to 14 to 21 days.
- If an adjuvant is needed, a nonionic surfactant only is recommended.
- Explanatory text was expanded.

—Suzanne Bissonnette

**WEEDS**

**WeedSOFT Yield Loss and Tank Mix Calculators Now Available on the Web**

Two new weed management tools are available for use on the Web. The first is the WeedSOFT yield loss calculator, designed to estimate the yield loss from emerged weeds in corn or soybeans. This could represent weeds being controlled either in a total post program or in a respray or second-flush situation. Just select your state, enter a few pieces of information about the crop and weeds, and then click the calculate yield loss button. In these postemergence scenarios, the calculator will estimate the yield loss from early-season weed competition (yield loss up to that stage of growth), the loss if weeds are not controlled until the next growth stage, and total loss for the season if these weeds were not controlled. In addition to the estimated yield loss in bushels per acre, the dollar loss per acre is presented.

The second tool is the WeedSOFT Tank Mix Calculator. This tool has two great features. First, it calculates herbicide and adjuvant quantities that are needed to mix loads based on your spray volume (GPA), tank size, and the herbicide rates you enter. Second, it creates a printable load ticket that can double as a record-keeping form. It also has U.S. EPA registration numbers for a large number of herbicides, which are automatically loaded when you select your herbicide.

Both tools work rapidly over the Internet, even with dial-up service. Please check both of them out at weedsoft.uml.edu/weedsoftapps.htm. These tools are just two parts of the complete WeedSOFT software program, which provides a more complete analysis of herbicide management options and economic returns in corn and soybeans. The WeedSOFT software is available for $50 to purchase and
May now at about V3, which means start, with the fields planted in early. Soybean is coming along after the late very good in most cornfields. waist high to chest high. Stands are of normal in its development. In cen fore May 1, and as a result it is ahead April received 150 to 250 GDDs be ages. Corn that was planted in early 1 are fairly close to long-term aver day (GDD) accumulations since May Most areas have received rainfall in as the latter struggled with the weather and soil conditions.

The corn and soybean crops are mostly planted and mostly up in Illinois, even where replanting was needed due to poor conditions. It’s been a good planting season for corn in most of Illinois and a less favorable one for soybean, with cool, damp weather in mid-May and conditions ranging from too dry to too wet. Soybean replanting percentages were much higher than normal in some areas. About the only positive part of this is that replanted soybeans have ended up not too far behind fields that were not replanted, as the latter struggled with the weather and soil conditions.

Most areas have received rainfall in the past week, and growing degree-day (GDD) accumulations since May 1 are fairly close to long-term averages. Corn that was planted in early April received 150 to 250 GDDs before May 1, and as a result it is ahead of normal in its development. In central and southern Illinois, early-planted corn is at V10 to V12 and ranges from waist high to chest high. Stands are very good in most cornfields.

Soybean is coming along after the late start, with the fields planted in early May now at about V3, which means three fully expanded trifoliate leaves (those with three leaflets, as opposed to the bottom leaves on the stem, which have only a single leaflet). There is some debate about how to tell when a leaflet is fully expanded, but for practical purposes we can take it as the point when the leaf is at least as large as the leaf below it. That works for the first half of the season, when mature leaf size tends to increase as you move up the stem. After flowering, new leaves often do not get as large as older leaves, with the largest area per leaf found on leaves attached at about the midpoint of the stem.

Over the next month, the corn canopy will complete its growth in all but the latest-planted fields. Canopy formation is a critical process in crops, in that it sets the stage for successful flowering and grain filling. In corn, we often note when the canopy closes, which is the point when it appears that nearly all of the sunlight is falling on leaves rather than some getting through to the soil. With 30-inch rows, the canopy appears to close when the crop is about 30 to 36 inches tall, especially when there has been enough moisture that leaves are as wide and as long as usual. Moisture stress then makes leaves curl; hybrids with more upright leaf growth (though this is usually not nearly as apparent on the lower leaves as on the upper leaves) and wide rows make the canopy look less closed, and make canopy closure appear to happen later.

Is canopy closure as important as we think it is? It is clearly an advantage for the crop to be taking in as much sunlight as possible as early in the season as possible; so, yes, rapid development of leaf area is important. The longest day of the year is at the summer solstice, which occurs next Wednesday, June 21. On that day (if it’s not cloudy), the crop receives more sunlight energy than on any other day, and this does the crop good only to the extent that it has leaf area to intercept the light. If we had a way to manage it, having grain fill taking place in late June would be even bet-
and usually indicates a crop that can intercept at least 97% of the sunlight that falls on the crop. Of course, the leaf area has to be healthy—leaves with disease or inadequate nutrients may still intercept light well, but they cannot use the light as well as healthy, dark green leaves can.

Roots are also viewed as critical to the success of vegetative development, and rightly so. As we found out during the very dry June in 2005, a good root system is capable of maintaining a good supply of water to the plant almost completely from the water stored in the soil. Unlike the canopy, though, root system size and health are very difficult to evaluate. Short of digging up root systems, the only way to assess their effectiveness is to note how the aboveground part of the plant responds to periods of low rainfall. Much more stress has been noted during dry June weather in some years, very little in others. The only reasonable way to explain this is as differences in the size and depth of the root system.

We think that dry June weather is often very helpful in helping roots reach their maximum effectiveness. This is both because fewer diseases develop when surface soils are dry and because dry surface soils mean less root growth near the surface but increased root growth deeper in the soil where there is more water available. Roots cannot grow into dry soil, but as long as the leaves of the plant are healthy and supplied with enough water, the supply of energy to the roots will continue. This energy (sugars, mostly) will be diverted to those roots where there is enough water to enable them to grow and to take up nutrients. Dry weather also means more sunshine, which helps crops grow.

Is it the case, then, that the bigger the root system the better? No. Roots have an optimum size, where the benefit they provide to the plant is matched by the cost to the plant of growing and maintaining the root system. Seldom if ever is this optimum actually reached, but ideally there should be enough photo-
synthesis during vegetative growth to result in rapid growth of both roots and aboveground plant parts, with roots ending up larger than normal but still in a favorable proportion to the tops. Wet June weather will often favor top growth over root growth, since roots do not grow well into very wet soils. Dry June weather results in a better balance, unless it’s so dry that top growth is reduced, in which case roots will start to suffer as well.

Healthy root systems do a great deal to reduce stress during pollination, which in turn goes a long way in setting the course for high yields. So far in 2006, the corn crop is doing quite well on both ends (tops and roots), and we hope this balance can continue. As water movement through plants continues to build along with the canopy, though, demands on soil water will start to deplete that supply, and we will need some rainfall to make up the difference. Few areas in Illinois are critical yet, but water loss rates are approaching an inch per week now, and most soils will need some help from rain within the next three weeks if maximum crop growth rates are to be maintained.—Emerson Nafziger

REGIONAL REPORTS

East-Central Illinois

Some cornfields have really started to take off. Most fields fall into the 4- to 6-leaf maturity range. There have been several reports of stressed/stunted plants in fields sprayed with some ALS herbicides. Really cool nights followed by hot days can cause problems for corn plants trying to metabolize some ALS materials. There have also been several reports of glyphosate drift onto non-glyphosate-tolerant corn. Soybeans range from just emerged to second trifoliate. Some Roundup Ready fields are starting to look a little weedy as farmers wait for their first glyphosate application.

Northern Illinois

Thunderstorms went through the northern region on June 9 and 10, with most areas receiving at least 1 inch of precipitation; the Rockford/Freeport area received over 2 inches. The rainfall was most welcome wherever it fell. Corn and soybeans look good throughout the area.

Just a reminder that a program update focusing on corn and soybean insects will be held on June 30 from 9:00 to noon at the Crops Training Center at the University of Illinois Northern Illinois Agronomy Research Center, Shabbona. The cost is $25; reservations are due by June 23 to the Whiteside County Extension Unit Office, 100 E. Knox Street, Morrison, IL 61270; phone (815)772-4075. An additional program will be held on August 9 focusing on soil fertility and weed control management. Certified Crop Adviser CEUs have been applied for both programs.

Southern Illinois

Locally heavy rains on June 10 brought welcome relief to the drier areas of the region, and crop conditions have improved considerably. Much of the corn has entered the rapid growth stage.

As we return to hot, dry conditions, wheat harvest should be starting as this newsletter issue is published. Local estimations are that the crop will be average rather than record breaking. In the more southerly areas of the region where it was wetter early, growers have been pushing to complete full-season soybean planting so they can get wheat harvested and start planting double crop.

The soybean rust sentinel plot in Madison County is at growth stage V5, and scouting has begun.

West-Central Illinois

Much of the area received showers over the weekend of June 10 and 11. Reports vary from 1/4 inch to an inch, depending on location. Following the rain, producers could still find dry soil just an inch below the surface.

Corn growth stages vary from V6 in later-planted fields all the way to V10.

Emerson Nafziger

Pest Management & Crop Development Bulletin • No. 12 / June 16, 2006
Overall, the crop looks healthy going into mid-June. Mike Roegge, crops systems educator with the Adams-Brown Extension Unit, reports having already found European corn borer in some fields, as well as seeing issues with lingering grape colaspis larvae.

Depending on planting date, soybeans range from VE to V4 across the area. Some producers just finished replanting fields that did not emerge evenly due to heavy rains received just after planting. Herbicides are being applied to other fields as summer annuals have started filling in rows.

Wheat fields have reached maturity in much of the region. A few fields show developing weeds, which could be an issue if harvest delays are encountered.

Second cutting of alfalfa has started in the southern part of the region. Regrowth looks healthy except for reports of potato leafhopper damage.

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