INSECTS

Still Waiting on Corn Rootworm Adults

Although we are now in July, we had not yet received any reports of western corn rootworm adults in cornfields. By now we could have expected observations of western corn rootworm adults in southern Illinois, but with the continued, excessive rainfall this spring, rootworm eggs and larvae may not have survived in the saturated or ponded fields. We have wondered how the excess moisture in central Illinois might have affected corn rootworms, and we finally have insight from one field in Champaign County. Joe Spencer, research entomologist with the Illinois Natural History Survey, thoroughly inspected one of his research trials just south of Champaign on July 29 and 30 and reported some interesting observations.

Joe and his crew found mostly third instar (fully grown) larvae, several in the prepupal stage, and about one pupa per plant, suggesting that initial emergence of the adults (males first, followed by females) is imminent. He also observed significant larval injury to some of the root systems from a plot of corn (not a rootworm Bt hybrid) planted after soybeans, with no protection against rootworms. On the 0-to-3 node-injury rating scale developed at Iowa State University (www.ent.iastate.edu/pest/rootworm/nodeinjury/nodeinjury.html), the injury to the roots in the photo would likely rate as equal to or greater than 1 (at least an entire node of roots pruned).

Joe indicated that the field where significant root injury was observed was planted on May 5 and did not have any long-term standing water. He was on his way to check another trial area northeast of Urbana that was flooded during some of June. Comparison of his observations in that field with his observations in a nonflooded area should give us some relative sense of the mortality of rootworm larvae in flooded soils.

Before we turn all of our attention to the adults soon (their emergence during pollination will threaten some fields), it might be prudent to check out the level of injury (or lack of injury) caused by corn rootworm larvae, getting an early look at the performance (or lack of performance) of rootworm control products. We hope to begin evaluating our rootworm management trials during the week of July 14, delaying our assessments to accommodate the slower development of rootworms this year.

We’ll discuss management of corn rootworm adults in pollinating cornfields in next week’s issue of the Bulletin.—Kevin Steffey

Corn Earworms Found Feeding in Corn Whorls

A few days after we published “Captures of Corn Earworm Adults Are Worth Noting” in issue 13 (June 20, 2008) of the Bulletin, we received a report of corn earworm larvae feeding in corn whorls. Mike Roegge, University of Illinois Extension educator in Quincy, observed corn earworm larvae in a seed cornfield (“not even close to silking”) in Adams County on June 24. The larvae ranged in size from 1/4 to 1 inch long and were feeding on leaves still rolled up in whorls. A couple of days later, Dan Schaefer with Illini FS
in Tolono reported corn earworms feeding in “hot spots” in a cornfield (V8 stage) in Champaign County.

The corn earworm (also known as the cotton bollworm, soybean podworm, and tomato fruitworm) is well known as a pest of seed corn and sweet corn. However, as I indicated in the article in issue 13, we largely ignore corn earworms in field corn. But when the adults arrived in Illinois this year, they found corn in vegetative stages of growth. Given the broad range of acceptable hosts for the larvae, vegetative-stage corn was perfectly acceptable as an oviposition site for the females.

At this time of year, signs of insect feeding in corn whorls usually suggest the presence of European corn borers, southwestern corn borers (in southern Illinois), or armyworms. So it’s important to link injury to the leaves with the appropriate culprit before making a control decision. Following are descriptions of a few species of caterpillars that could be found in corn whorls at this time of year (from the *Handbook of Corn Insects*, published by the Entomological Society of America; www.entsoc.org/Pubs/Books/Handbooks/Corn.htm or www.shopapspress.org/haofcoin.html).

**Armyworm.** “The full grown larva is 1 1/2–1 3/5 in. [3.7–4.1 cm] long and green-grown with varying degrees of black mottling and white flecks. Two orange stripes along each side and two dark stripes on the back are characteristic. The head is yellow-brown with a brown netlike pattern of dark lines.” There are dark bands on the abdominal prolegs.

**Corn earworm.** “Newly hatched larvae are translucent cream to white with a black head. Larger larvae vary from yellow, brown, and red, to green with prominent bands of pink cream, pink, green, or yellow. The head usually is dark yellow or orange. The cuticle is covered with microspines.” Larger, erect hairs are surrounded by dark tubercles (“bumps” on the cuticle).

**European corn borer.** “Newly hatched larvae are 1/32–1/16 in. [1–2 mm] long with a dark brown head and a somewhat translucent white body. Mature larvae are 3/4–1 in. [19–25 mm] long with a medium to dark brown head and a creamy white to gray body. Raised, somewhat darkened tubercles are evident on the body.”

**Southwestern corn borer.** “Larvae are white with a pattern of large, raised black tubercles on each body segment and are 1–1 1/4 in. [25–30 mm] long when full grown. The head of first through third instars is black, whereas the head of older larvae is brown.”

Because we infrequently experience corn earworm injury to corn leaves rolled up in whorls in the Midwest, an economic threshold has not been established. The action threshold for fall armyworms, which often feed on corn leaves rolled up in whorls, is 75% of the plants with whorl injury and worms still present. If control with an insecticide seems justified (and in most instances, it isn’t), the insecticides suggested for control of corn earworm larvae are listed in Chapter 1, Table 1 (page 6) of the 2008 Illinois Agricultural Pest Management Handbook (www.ipm.uiuc.edu/pubs/ipamh). — Kevin Steffey

**Begin Monitoring for Western Bean Cutworm Adults**

Several University of Illinois Extension educators have erected western bean cutworm pheromone traps to begin monitoring for the adults. As you know, the western bean cutworm was first found in Illinois in 2004, and we (and other extension entomologists in the Midwest) have been monitoring for the moths ever since. Results from the vast monitoring effort (which includes agricultural seed and chemical company representatives) are reported on Iowa State University’s “Western Bean Cutworm Monitoring Network” (www.ents.iastate.edu/trap/westernbeanctworm). The moths typically are monitored from mid-June to mid-August.

After they emerge (just beginning, based on a couple of reports of captures), western bean cutworm females mate, and the females lay their eggs on the upper surfaces of corn leaves, usually near the tops of plants. After hatching, the larvae move either to the whorls (which they might encounter this year) to feed on the tassels or to the ears (if present). Feeding by western bean cutworm larvae in corn ears can cause economic damage; we’ll discuss this in more detail in a future issue of the *Bulletin*.

The western bean cutworm is not thoroughly established as a widespread threat to corn in Illinois. However, it has been found in many counties, particularly noticeably in the northwestern and north-central counties, and as of 2007 it had been found as far east as Michigan and Ohio. We’ll keep tabs on the moth flights and let you know whether larvae are found in either whorls or ears. — Kevin Steffey

**Glyphosate Use in Soybean: Alone or Tank-Mixed?**

The ability of glyphosate to control a broad spectrum of grass and broad-leaf weeds has resulted in its use as a “stand-alone” postemergence soybean herbicide more often than in combination with other postemergence herbicides. However, with the rapid adoption of glyphosate-resistant corn hybrids and weed spectrum changes in response to near-ubiquitous glyphosate use, the frequency of acres where glyphosate alone will be sufficient to manage weeds in soybean will continue to decrease over time. Soil-residual herbicides and tank-mix partners for postemergence applications of glyphosate will increasingly be needed to manage both the challenges currently faced by soybean farmers and those lurking beyond the horizon.

We’ve often discussed the merits of including soil-residual herbicides in glyphosate-resistant soybean systems,
but we have discussed less frequently the advantages and disadvantages of tank-mix partners with glyphosate. Are there instances when that approach might improve overall weed control? Are there instances when tank-mixes might not be advisable? The answer to both questions is yes.

Advantageous Tank-Mixes

Volunteer corn. Volunteer corn is easily controlled by glyphosate—unless it carries the glyphosate-resistance trait. The number of acres planted with glyphosate-resistant corn hybrids in Illinois has been steadily increasing the past few years and will likely continue to increase into the foreseeable future, so soybean farmers will need to rely on an alternative herbicide to control volunteer glyphosate-resistant corn. Control can be accomplished through the use of certain soil-applied herbicides, but it is often more consistently accomplished by tank-mixing certain postemergence ALS- or ACCCase-inhibiting herbicides with glyphosate.

Challenging annual broadleaf species. Annual morningglory species can be especially challenging to control with glyphosate alone. Soybean weed control practitioners are often frustrated when attempting to control morningglory postemergence exclusively with glyphosate. Current and past research at the University of Illinois has examined several glyphosate tank-mix partners that can substantially improve morningglory control compared to glyphosate alone. Products containing cloransulam, chlorimuron, 2,4-DB, fomesafen, lactofen, or acifluorfen may increase annual morningglory control over that achieved by glyphosate alone.

Some herbicide-resistant weed populations. Our colleagues in Indiana and Ohio have conducted extensive research on management options for glyphosate-resistant giant ragweed in soybean. Indiana and Ohio extension weed scientists have recommended applying the maximum allowable rate of glyphosate during the first postemergence application and then respraying (if needed) within 3 weeks. They also have reported some success controlling giant ragweed populations that are resistant to both glyphosate and ALS-inhibiting herbicides by combining glyphosate with Flexstar or Cobra/Phoenix, followed by a second glyphosate applications 3 weeks after the first application.

Tank-Mixes Not Recommended

Glyphosate-resistant waterhemp. As described in the Bulletin in “Glyphosate-Resistant Waterhemp in Illinois: Recommendations for Management” (issue 1, March 21, 2008), we do not recommend adding tank-mix partners to glyphosate in the 2008 soybean crop for postemergence control of waterhemp that may be resistant to glyphosate. What we do recommend is that the first application of glyphosate alone occur when waterhemp are 3 to 5 inches tall, followed with field scouting not longer than 7 days after application to determine treatment effectiveness. If scouting reveals that waterhemp control was inadequate and retreatment is necessary, we suggest you consider applying a PPO-inhibiting herbicide (lactofen, fomesafen, acifluorfen) at a full labeled rate and with recommended spray additives as soon as possible.

So why use glyphosate alone instead of tank-mixing with a PPO inhibitor? There are several justifications for this recommendation:

1. Glyphosate-sensitive waterhemp can be adequately controlled with 0.75 to 1.0 lb ae glyphosate per acre when applied to plants 3 to 5 inches tall. For these sensitive populations, there would be little to no increase in control from the tank-mix component. However, if waterhemp plants in the recommended size range do survive this rate of glyphosate applied alone while other weeds in the field appear to be adequately controlled, you should remain very attentive to these plants, as they may be glyphosate-resistant.

2. We simply have very limited experience with these types of tank-mixes applied specifically to glyphosate-resistant waterhemp populations.

Within the next couple of weeks, we will have sprayed several tank-mix experiments on a known glyphosate-resistant waterhemp population, but to date these types of data are lacking. Lingering unanswered questions with glyphosate + PPO inhibitor tank-mixes applied to glyphosate-resistant waterhemp include these:

• How likely is antagonism when combining glyphosate (a translocated herbicide) with PPO inhibitors (contact herbicides)? If antagonism occurs, will the control of waterhemp (sensitive, PPO-resistant, glyphosate-resistant) or other weed species be affected?

• What spray additive(s) should be included with these tank-mixes? PPO inhibitors generally perform better with COC or MSO, while many glyphosate product labels allow only AMS or NIS.

• What type of spray nozzle and how much spray pressure and volume should be used in conjunction with these tank-mixes? PPO inhibitors require more thorough spray coverage of the target vegetation for effective control than do translocated herbicides.

• At what rate should each tank-mix component be applied?

3. We have confirmed more populations in Illinois of PPO-resistant waterhemp than glyphosate-resistant waterhemp. There would be little to no benefit in control of PPO-resistant waterhemp from the PPO component of these tank-mixes. Additionally, if a PPO-resistant waterhemp population is treated with a tank-mix of glyphosate and PPO inhibitor, will the glyphosate adequately control this population given the concerns outlined previously?

In summary, glyphosate tank-mix partners can help improve control of certain problem weed species over that achieved with glyphosate alone. However, in other instances we suggest that tank-mixes may not be the most advis-
Making Profitable Fungicide Applications in Corn

In 2007, a record number of corn acres were sprayed with foliar fungicides in Illinois and other midwestern states. A similar trend is expected for 2008. But are all these applications necessary? The simple answer is no, because a foliar fungicide application to corn will not always provide a yield (or economic) benefit. Data summaries from both university and commercial sources all agree on this point—that foliar fungicides did not provide a benefit on corn every single time they were applied in 2007.

The real question that should be asked is under what circumstances a foliar fungicide applied to corn will be profitable. Because the main purpose of using a fungicide is to control a disease, the best answer is this: when foliar diseases are at a high enough level to cause economic losses. The problem lies in the fact that once you know a foliar disease is significant enough to cause economic loss, there is little you can do about it. So what option does that leave (besides just spraying everything prophylactically)?

Determining a cornfield’s risk of developing a severe foliar disease problem is something that can be done to help make a fungicide application decision. Certain production practices and factors can play a role in a cornfield’s foliar disease risk. When many of these risk factors are present, the likelihood of greater disease pressure increases (and thus does the likelihood of profitable fungicide application). I’ll discuss some of those risk factors here.

Previous crop and tillage practice. When corn was the previous crop and a substantial amount of residue is left on the soil surface, the risk of foliar disease increases. Many of the fungal pathogens that cause foliar diseases on corn survive in corn debris.

Planting date. Research conducted by Dr. Gary Munkvold at Iowa State University and by Ron Hines at the University of Illinois Dixon Springs Agricultural Center has indicated that late-planted corn is more at risk to gray leaf spot than early-planted corn.

Hybrid susceptibility. Most hybrids are rated for their susceptibility to diseases like gray leaf spot and northern corn leaf blight. When hybrids with greater susceptibility to these diseases are planted, the risk of the diseases increases. Results from university trials conducted in 2007 in 12 different states and Ontario indicated that hybrids with a “fair to poor” rating for gray leaf spot resistance had a 6 bu/A increase when a foliar fungicide was applied, compared to a 4 bu/A increase when a foliar fungicide was applied to hybrids with a “good to excellent” rating for gray leaf spot resistance.

Weather and environment. High relative humidity and moisture are important for the development of foliar diseases on corn. In corn fungicide trials conducted in 2007 by the University of Illinois (Carl Bradley and Emerson Nafziger) and Southern Illinois University (Bryan Young), the greatest yield increases occurred in the regions of the state that had the most rainfall in July. The average yield increase observed in fungicide-treated plots was 5 bu/A in northern Illinois compared to only 1 and 3 bu/A in southern and central Illinois, respectively.

Disease observations. Scouting fields prior to tassel emergence may give an indication of potential disease pressure. The earlier that some diseases are apparent, the greater the risk of losing yield. This is especially true for rust. No hard-and-fast economic thresholds are available for foliar corn diseases, but scouting can give an indication of how quickly diseases are building on the lower leaves. Be aware of the following fungicide guidelines based on scouting observations (adapted from G. Munkvold, Iowa State University):

- For susceptible or moderately susceptible hybrids, a fungicide application should be considered if the disease is present on the 3rd leaf below the ear or higher on 50% of the plants before tasseling.
- For intermediate hybrids, fungicide application should be considered if conditions and factors are favorable for disease and if disease is present on the 3rd leaf below the ear or higher on 50% of the plants before tasseling.
- For resistant hybrids, a fungicide application is generally not recommended, but field scouting is still important.

What about hail-damaged corn? The most recent questions I have received about foliar fungicides on corn deal with whether to spray a hail-damaged cornfield with a fungicide. The fungus that cause foliar diseases of corn do not need wounds to cause infection on the leaves, nor is there any evidence that wounds even favor infection by these pathogens. Wounds from hail may provide access for bacterial pathogens to gain entry and cause infections, but a fungicide will not control bacterial diseases anyway. These wounds may also provide an entry for the fungus that causes common smut, but common smut is not controlled by foliar fungicides either. If the risk factors discussed above are present, then it may make sense to apply a fungicide to this field, but the hail damage need not play a role in the decision (except for yield potential, perhaps).

A simulated hail–fungicide trial was conducted at Urbana in 2007, with corn plants being damaged with a string trimmer just before tasseling to simulate hail damage. Some plots were left undamaged as well. The fungicides Headline, Quadris, and Quilt were applied to the plots and compared to an untreated check. When the data were statistically analyzed, fungicides did not significantly improve yield compared to the untreated check in the “hail-damaged” plots or
the nondamaged plots. The simulated hail damage alone did decrease yield by approximately 30 bu/A compared to the nondamaged plots, however.

What about yield increases despite lack of disease pressure? As a plant pathologist, this is a question that I hate to tackle, because it is actually an issue of plant physiology that has nothing to do with plant pathology (diseases). That being said, it is true that some fungicide classes (such as strobilurin fungicides—the active ingredients in Headline and Quadris and one of the active ingredients in Stratego and Quilt) can have other impacts on plants besides disease control.

One of the most visual results of the strobilurin fungicides that can happen to corn plants is a “greening effect.” This effect does not automatically add yield to corn plants, however. In fact, the effect was observed in some of my research plots in 2007, in which no differences in yield occurred between fungicide-treated and untreated plots. In my opinion, the primary reason for applying a foliar fungicide should be related to controlling diseases. If other benefits occur, that is great, but that should not be the primary reason to apply the fungicide.

Overall, foliar fungicides are a great disease management tool to have available for corn production. With escalating commodity prices and the demand for greater yields, we are all looking for ways to bump corn yields; however, there are no silver bullets. Foliar fungicides can help increase production and profits, if they are used appropriately.—Carl A. Bradley

CROP DEVELOPMENT

Crop Condition: The Real Test Lies Ahead

Recent reports show gradual improvements in the condition of the Illinois corn crop, from 48% good to excellent on June 8 to 60% on June 29. I traveled north as far as DeKalb and south as far as Farina this week, and there is no question that the periods of dry, sunny weather over much of Illinois in recent weeks have helped the crop get back to some semblance of normal. Growing degree day accumulations from May 1 through the end of June average only 70 less than average, reflecting a cooler-than-normal May followed by a warmer-than-normal June. June provided a good mix of warm and cooler temperatures, with no extremes, which has been very helpful to recovery.

One exception to the return to normal is late-planted fields. Some cornfields in central Illinois were planted (or replanted) in June, and plants are now only about a foot tall. Many fields in south-central and southeastern Illinois were replanted or “repair-planted,” and it will be interesting to watch how the early-planted plants left standing will compete against the later-planted plants. In general, we expect the early-planted plants to compete well for water and nutrients, and to lower yield of nearby late-planted plants more than they increase their own yield. This will lower overall yield, especially in those parts of repaired fields with a lot of early plants, where the total plant population is much higher than normal. The late-planted fields have improved in color and growth is starting to accelerate, but these fields will not catch up quickly, and the high temperatures it would take for them to catch up at all would likely do more harm than good.

While a considerable amount of unevenness is present in many fields where water stood earlier, crop color is much better in most fields than it was a month ago. In much of the northern half of the state, the corn crop is in very good shape, with good stands and the deep green color that reflects the fact that roots are tapping into nitrogen well. There are some drowned-out low areas, and what appears to be loss of N, along with some easy-to-see errors in N application. But the rainfall in most areas in mid-June has helped move N to roots, and concerns about lack of N, along with the urge to take corrective action, have decreased.

Much of this improvement has come about because soils have dried out and warmed up, considerably improving the ability of the roots to do their job. Still, soil conditions were generally not very good at the time of planting, and it is not likely that even the most favorable weather will overcome that handicap. Most of this will play out as a limitation on the root system to take up water during dry periods. Even now, we are starting to see some leaf curling in the afternoon, indicating that the crop is unable to take up water as fast as the plant is losing water to the air. By itself, this mild stress is not a big concern before tasseling. But it does indicate that roots are not as extensively connected to soil water as we would like them to be, or as they were at this point in 2007. With June rainfall well above average over most of the state this year, and with the largest crop’s having used only 5 to 6 inches of water by now, there is certainly water available in the soil, even though much of it may lie below the zone of active rooting. The best possible situation is to have little or no occurrence of dry soils in the rooting zone over the two months.

Crop use exceeds average rainfall totals by 3 to 4 inches during July, so avoiding periods of dry soil will require that rainfall be above normal. Most importantly, we would like to have plants well supplied with water for two weeks before pollination, through pollination, and for two weeks after pollination. For the Illinois corn crop this year, this means that July has to be a good month, with above-average rainfall, to fully meet the needs of the corn crop. Positive signs now are the much-improved canopy condition, which will help the crop take full advantage of the sunlight and water it gets. But the old saying “Rain makes grain” has never been truer than it will be this year.

The soybean crop continues to struggle, with the crop in many fields still only a few inches tall, and canopies ranging from reasonably good in those fields planted earlier (this year,
“earlier” means during the second half of May) that escaped excessive rainfall. Like the corn crop has done, we expect the soybean crop to “jump-start” its growth soon in late-planted fields. At the same time, the crop has by now lost the use of practically a whole month of sunlight, and it will be difficult for the crop to manage even modestly complete canopy cover as it heads into flowering and then into pod-setting. That puts pod numbers at risk, and without adequate pod numbers, yields will suffer. While a good water supply during July will help the crop extend its flowering period and so will increase pod numbers, the soybean crop will recover its yield potential only if the good moisture supply extends through August and into September.

Wheat is one positive that we can put into the books for the 2008 cropping season in Illinois. Harvest is late, and is just now reaching up past I-70; combines were running on July 1 in the Vandalia area. Our concerns about late heading were mitigated by the good conditions during June, and the late harvest reflects the fact that the crop needed its usual 6 weeks from heading to full maturity to produce good yields. Double-cropping is clearly the order of the day, with many of the double-cropped soybeans planted little later than the “full-season” soybeans in many areas. We expect double-cropping to extend farther north than usual this year. The fact that normal soybeans were planted late means that double-cropping is less risky, but only in comparison to normal soybeans, not in an absolute sense. We would suggest that soybean planted following wheat harvest north of Route 16 or so be slightly earlier in maturity than full-season beans, but those at the earlier end of the range of normally planted soybean varieties should work. Do not plant this late in rows wider than 15 inches. With tall plants and heavy straw, double-cropping will probably work better if straw, at least the straw run through the combine, can be baled off before soybean planting. If that is not done, then cut as high as possible to reduce the amount of straw chopped back onto the ground.

Early wheat yield reports, and the appearance of the crop before harvest, are outstanding. One unusual feature is the bright yellow color of the harvested straw—it looks almost like oat straw. We expect to hear about yields in the 70s and 80s, and even 90s, though excessive water in parts of southern Illinois will have damaged some fields and lowered yields. But if corn and soybean crops make a comeback like the wheat crop did, we might still remember 2008 as a good year.—Emerson Nafziger

Region 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.

East-Central Illinois

Mild weather has enabled most planting/replanting to be completed. Corn varies from high to V-1. First-generation European corn borer is being found in some areas. Some suspected corn borer damage is actually first-generation corn earworm whorl feeding. Soybean sizes are not quite as varied as corn. Wheat is almost ready to harvest. But moisture is still a little high.

From Don Frederick, Cumberland/Jasper Extension: This area of the state continues to get periodic rainfall that complicates accomplishing seasonal tasks. Some wheat has been harvested, but a sizeable portion of the Jasper County crop remains in the field. Some planting of double-crop soybeans has occurred, but much is yet to be done. Much of the corn acreage has a canopy that is beginning to close, and the harvesting of hay continues.

Northern Illinois

Field activities the past week focused on postemergence herbicide application on soybeans, but nitrogen side-dressing and herbicide application were still occurring in some cornfields during the week of June 22.

Wheat has turned, and there have been minimal reports of disease pressure.

There have been very few reports of insect or disease infestations in corn and soybeans the entire growing season. Extension educators are monitoring soybean sentinel plots weekly for soybean rust and soybean aphids. To date only a few western bean cutworm moths have been captured in traps monitored by Extension educators.

Southern Illinois

Rainfall over the past week has become more seasonal from the standpoint that some areas received significant rain while others remain dry. The range in crop development is probably the most extreme it has ever been, with corn ranging anywhere
from V-2 up to V-18 and full-season soybeans from V-1 up to R-1. Cooler-than-normal temperatures are allowing crops with impaired root systems to develop without undue stress.

The delay in planting has also meant a delay in herbicide applications. In many cases crops appear to have been planted naked, with the intention of coming back and controlling weeds later. Uncontrolled or poorly controlled horseweed (marestail) is obvious in many no-till fields, which may be due to either herbicide resistance or simply delayed herbicide timing.

Although none of the levees along the Mississippi south of St. Louis is in danger of failing, many of the bottomland fields are experiencing severe crop damage from seep water.

Wheat harvest is rapidly approaching completion, with growers reporting yields in the 60- to 80-bushel range.

**West-Central Illinois**

The west-central region is quite variable in crop conditions. The crops look excellent in the eastern side of the region and get to the point of thousands of acres under water on the western side.

Corn throughout the region varies from just recently planted to over 6 feet tall, with the average height being close to shoulder high. The earliest planted fields are about 4 leaves from tassel. You can find fields that are yellow and stunted to even and green depending on your travels and the amount of rain that fell in a given area. Insect pests were noted in many fields. European corn borer and corn earworm are/were numerous on non-GMO corn. The first Japanese beetles were noted late last week.

Soybeans are variable as well, from a few fields that have not been planted to V6, with the average around V4. Many soybean diseases are present, which is quite early compared to most years.

Wheat harvest will likely start this weekend. It appears that yields will be slightly above average.

Second-cutting alfalfa is well under way. Potato leafhoppers are very common, and most fields will be sprayed as soon as regrowth occurs.

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