In last week’s issue of the Bulletin (issue no. 17, July 21, 2006), I notified readers of two courses that will be taught in the College of ACES Off-Campus Graduate Studies program during the 2006 fall semester. This week I wish to emphasize one of the two courses, CPSC 479, Insect Pest Management. The course will be delivered via two-way video at four locations—Champaign, Oak Brook, Mt. Vernon (actually Rend Lake College near Ina), and Springfield. However, we will be able to deliver the program to these sites only if enough students sign up at each site to make delivery to each site cost effective. In the past, we have had a little trouble attracting enough interest at the Mt. Vernon and Springfield locations, so courses scheduled for those sites have been cancelled. We are hoping that enough participants sign up that the course can be delivered to all sites. Should anyone wish to take the course only for Certified Crop Adviser (CCA) continuing education units (20 in IPM), the cost is just $175. CCAs who register for the course are not required to take the exams.

I encourage you to let neighbors and friends know about the course; its expanded subject matter will include not only field crops but also fruit and vegetable crops, turf, greenhouses, and trees and shrubs. The Japanese beetle, which attacks most of the aforementioned commodities, could be our poster insect for the course this year. We hope you find the subject matter compelling and consider registering (www.outreach.uiuc.edu).—Kevin Steffey

An Inventory of Field Crop Insect Issues in the Midwest

On July 25, extension entomologists from Illinois, Iowa, Kansas, Kentucky, Michigan, Minnesota, North Dakota, and Ohio convened during a teleconference to share information about insect situations and issues in their respective states. A synopsis of the reports follows:

**Illinois** (Mike Gray, Kevin Steffey)

• Lots of corn rootworm larval damage in research plots at the Urbana location. Preliminary results will be provided in a near-future issue of the Bulletin. After thunderstorms in some areas, lodged corn resulting from rootworm larval damage was apparent.

• Western corn rootworm adults are exhibiting dispersal behavior as they fly from one field to others.

• Numbers of soybean aphids continue to increase slightly, but average densities (aphids per plant) still are quite low.

• The numbers of western bean cutworm moths being captured in pheromone traps in Illinois are large in some locations, especially northwestern counties. Check out the numbers for yourself at www.ent.iastate.edu/trap/westernbean/wbc_trap/isite. Refer to the more detailed article in this issue of the Bulletin.
Iowa (Marlin Rice)

• Drought conditions prevail in some areas.

• Soybean aphids can be found in almost every soybean field, with 30 to 50 per plant being reported as the largest counts.

• The largest densities of first-generation bean leaf beetles observed in recent years.

• Not many reports of lodging caused by corn rootworm larval damage, although some goosenecking has been observed.

• Densities of potato leafhoppers in alfalfa are large, and “hopperburn” is common.

Kansas (Phil Sloderbeck)

• Numbers of soybean aphids are low.

• Large numbers of head moths in sunflowers.

Kentucky (Doug Johnson)

• 2006 has been a slow insect year thus far in Kentucky.

• Only one reported find (near Lexington) of soybean aphids this year.

Michigan (Chris DiFonzo)

• Emergence of very large numbers of adult corn rootworms. Reports of lodging related to corn rootworm larval damage have been received from many areas in the state.

• Densities of soybean aphids have been extremely small, and no winged soybean aphids have been found in any of the suction traps in the state.

Minnesota (Ian MacRae)

• Drought conditions prevail.

• Densities of soybean aphids are still large in some fields, although numbers are not increasing much.

• Twospotted spider mites are infesting some soybean fields of dry beans and soybeans.

North Dakota (Jan Knodel)

• Drought conditions prevail.

• 2006 has been a busy insect year in North Dakota, beginning with cutworm problems and infestations of alfalfa weevils in both first and second crops of alfalfa. The latter is not common in North Dakota.

• Aphids have been troublesome in many crops. Soybean aphids are slowing down a bit, but numbers are still large. It is not uncommon to find 100 to 1,000 aphids per plant.

• Sunflower head-attacking insects are making their presence known.

• Twospotted spider mites are showing up in both dry beans and soybeans.

Ohio (Ron Hammond)

• A couple of situations have been reported where corn rootworm larvae have caused more damage than has been true in recent years.

• Numbers of soybean aphids are small, although they are easier to find now than they were just a week ago.

• More potato leafhoppers have been noticed in 2006 than in recent years, and many alfalfa fields are turning yellow.

This inventory is intended to provide a snapshot of insect issues around the Midwest. We remind you that you can read more details about many of the region’s insect issues in articles published in respective states’ newsletters, which you can find at www.ipm.uiuc.edu/bulletin/resources.html. As always, please contact any of us if you have information to share.—Kevin Steffey and Mike Gray

Western Bean Cutworm Larvae in Corn in Northwestern Illinois

With the discovery of the first western bean cutworm moth in Illinois in 2004, it seemed to be only a matter of time before the insect posed a threat to corn in our state. If you have stayed abreast of current activities related to western bean cutworms, you already know that the distribution of this pest is relatively widespread in Illinois. Western bean cutworm moths also have been captured in pheromone traps in Indiana, Michigan, Missouri, Ohio, and Wisconsin. Captures in Iowa have been relatively commonplace over the past few years, but in 2006 the numbers of moths being captured there are extraordinary. If you want to review 2006 moth capture data to date in the aforementioned states, go to www.ent.iastate.edu/trap/westernbeancutworm/isite. Click on “Maps of Trap Captures” for a visualization of the distribution of western bean cutworms.

It’s time to begin checking cornfields for western bean cutworm eggs and larvae. Fortunately, the ever-astute and skillful photographer Jim Donnelly, Ag View FS, has provided some photographic records that might help with your identification of the pest in corn. Jim took a series of photographs of a western bean cutworm egg mass from July 14 through July 18. The photographs show the progression of the eggs from pearly white to pink to purple until just before hatch. Jim then created a time-lapse series of these photographs that shows the change in color in just a few seconds. Very impressive stuff.

Jim also found western bean cutworm larvae feeding on corn ears in a cornfield in Bureau County on July 25. The larvae ranged in size from .5 inch to 1.5 inches long, with an average length of about 1 inch. He found six larvae in a very small area—about 10 square feet. There was only one larva per ear on most plants, although one ear supported two larvae.

Don’t delay scouting for western bean cutworms in areas where moths have been captured. Treatment is warranted when 8% of the plants have egg masses on the leaves or young larvae feeding in tassels. This is a nominal threshold recommended by entomologists at the University of Nebraska. However, it points out the importance of looking for egg masses and/or
young larvae rather than waiting to find larger larvae. It is very difficult to control western bean cutworm larvae when they begin feeding in the ear tips, so an insecticide, if needed, must be applied before the larvae attain significant size. Insecticides suggested for control of western bean cutworms in corn in Illinois are listed in Table 1.

Another approach for making a decision about controlling western bean cutworms in corn is to consider the cost of control and the value of the corn crop. Marlin Rice, extension entomologist at Iowa State University, referred to a table of such economic thresholds in an article he wrote for the Proceedings of the 2005 Illinois Crop Protection Technology Conference. We have learned, however, that the table was not included in the article (an oops on our part), so we are publishing it as Table 2 here. Note once again that the economic injury levels are numbers of eggs per plant.

**Table 1. Insecticides suggested for control of western bean cutworms in corn, Illinois, 2006.**

<table>
<thead>
<tr>
<th>Product</th>
<th>Amount of product per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Asana XL</td>
<td>2.9 to 5.8 oz</td>
</tr>
<tr>
<td>*Baythroid 2</td>
<td>1.6 to 2.8 oz</td>
</tr>
<tr>
<td>*Capture 2EC</td>
<td>2.1 to 6.4 oz</td>
</tr>
<tr>
<td>Intrepid</td>
<td>4 to 8 oz</td>
</tr>
<tr>
<td>*Lorsban 4E</td>
<td>1 to 2 pt</td>
</tr>
<tr>
<td>*Mustang Max</td>
<td>1.76 to 4 oz</td>
</tr>
<tr>
<td>*Penncap-M</td>
<td>2 to 4 pt</td>
</tr>
<tr>
<td>*Pounce 3,2EC</td>
<td>2 to 4 oz</td>
</tr>
<tr>
<td>*Proaxis</td>
<td>1.92 to 3.2 oz</td>
</tr>
<tr>
<td>Sevin XLR Plus</td>
<td>2 qt</td>
</tr>
<tr>
<td>Tracer 4SC</td>
<td>2 to 3 oz</td>
</tr>
<tr>
<td>*Warrior</td>
<td>1.92 to 3.2 oz</td>
</tr>
</tbody>
</table>

*Use restricted to certified applicators.

**Table 2. Economic injury levels (eggs per plant) for western bean cutworm in dent stage corn.**

<table>
<thead>
<tr>
<th>Corn value/bu</th>
<th>Control costs/acre</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>$8</td>
</tr>
<tr>
<td>$2.00</td>
<td>33</td>
</tr>
<tr>
<td>$2.25</td>
<td>29</td>
</tr>
<tr>
<td>$2.50</td>
<td>26</td>
</tr>
</tbody>
</table>


Another demonstration that control of larger larvae in ears is not recommended. You can view Marlin’s article (without the table) on pages 102–105 at www.ipm.uiuc.edu/education/proceedings/ceptcp2005.pdf. The article includes information about the life history of the western bean cutworm, as well as its damage to corn and its movement through Iowa into Illinois. Scouting guidelines also are included.

The western bean cutworm is here to stay, and we are interested in learning about the occurrence of larvae and the injury they cause to ears in any area where they are found. Please keep us apprised of the situation in your neck of the woods.—Kevin Steffey

**Bean Leaf Beetle Densities Expected to Increase: Don’t Underestimate Potential Impact of Insect Injury to Soybean Pod**

Over the next few weeks, we anticipate bean leaf beetle densities to increase across much of Illinois. During our July 25 teleconference with other extension entomologists in the north-central region, Marlin Rice, Iowa State University, reported that densities of the first generation of bean leaf beetles were greater in many areas of Iowa than they’ve been during the past two or three years. Kevin Black, insecticide/fungicide technical specialist with Growmark, recently indicated that bean leaf beetles are becoming more noticeable in many soybean fields, albeit below economic levels at this point. Based on the past few winters, which have been very mild, we also anticipate a population surge of bean leaf beetles this summer. So it makes sense to be vigilant and monitor fields for excessive defoliation and pod injury in the coming weeks. Bean leaf beetles, grasshoppers, and stink bugs are all able to cause yield losses in soybean fields during the pod-fill stage of development. Their type of injury is distinctive and will be described in the remainder of this article. So although it has been a long, hot summer already, don’t neglect scouting soybeans well through early September for these insect pests.

Typically the second generation of bean leaf beetles begins to emerge in early August and is temperature dependent. If the summer has been very cool, emergence can be delayed until mid-August, particularly in some of the more northern states of the Midwest. Bean leaf beetles of the second generation will not mate until next spring. Consequently, no development of the ovaries within females occurs during late summer. The second generation of bean leaf beetles will feed on leaves and soybean pods. After the leaves become too old (begin to lose some green coloration), the beetles scrape off the green tissue on the pods and stems but do not chew through the pod wall. The resulting scars on the pods provide an opening for entry of spores of various fungal diseases that are normally blocked by the pericarp. Mild infection results in seed staining; severe infection may result in total seed contamination. As the quality of food diminishes within soybean fields, bean leaf beetles will seek out alfalfa or other leguminous fields. Here they reside until falling temperatures and lack of food drive them into their overwintering quarters, primarily woodlots, within which the insects nestle beneath leaf litter.

Next spring the adults will seek out alfalfa once again and begin feeding and mating. By the time the adult beetles disperse to soybean fields, they have mated and are ready to begin laying their eggs. To prevent economic losses resulting from pod injury, a rescue treatment should be considered when 5% to 10% of the pods are damaged, the leaves are green, and there are 10 or more beetles per foot of row. Make sure that scouting efforts occur throughout several areas of a field, not just the border rows. When defoliation reaches 20% between the bloom and pod-fill stages, producers should begin to assess the potential need for a rescue treatment based on the cost of an insecticide, the current market value of soybeans, and the overall mix of insects that may be feeding on pods and soybean leaves.
Grasshoppers cause more direct injury to soybean seeds. Because they have impressive chewing mouthparts, grasshoppers often chew directly through the pod wall and take bites out of seeds or devour them entirely. If 5% to 10% of the pods are injured by grasshoppers, an insecticide application may be warranted. So far this season, we have not had many reports of grasshopper infestations; however, as we approach the critical pod development phase, it’s worth at least keeping our eyes open for this potential damage.

Many field observers tend to overlook stink bugs and the potential injury they can cause, even though they may be the most important pod feeders in Illinois. Watching for stink bugs, especially in the southern half of the state, should be a high priority for soybean producers. Green stink bugs are believed to migrate northward from overwintering sites (wooded areas beneath leaf litter) as adults. During the early months of summer, the adults feed on berries in trees, especially dogwoods. Stink bugs are first found in soybean fields during August. They undergo incomplete metamorphosis (immature bugs resemble the adults), which requires approximately 45 days from egg hatch to adult emergence. There is usually only one generation of green stink bugs per year in Illinois.

Immature stink bugs (nymphs) have a flashy display of black, green, and yellow or red colors and short, stubby, nonfunctional wing pads. The adults are large (about 5/8 inch long), light green, shield-shaped bugs with fully developed wings. Both adults and nymphs have piercing and sucking mouthparts for removing plant fluids.

Stink bugs feed directly on pods and seeds; however, their injury is difficult to assess because their mouthparts leave no obvious feeding scars. Stink bugs use their mouthparts to penetrate pods and puncture the developing seeds. They inject digestive enzymes into seeds, and the feeding wound provides an avenue for diseases to gain entry into the pod. Seed quality also is reduced by stink bug feeding, and beans are more likely to deteriorate in storage.

Other species of stink bugs also occur in soybeans. The brown stink bug has feeding habits and a biology similar to those of the green stink bug. The brown stink bug should not be confused with the beneficial spined soldier bug. Adult brown stink bugs are brown and have a yellow or light green underside, and their “shoulders” are rounded. Spined soldier bugs also are brown and have a white to cream-colored “belly”; however, their shoulders are sharp-pointed. Be sure you are aware of the species present in a soybean field before making a control decision. An insecticide application for control of stink bugs may be warranted when the level of infestation reaches one adult bug or large nymph per foot of row during pod fill.


**PLANT DISEASES**

**Bacterial Blight**

Ragged, tattered, brown-speckled soybean leaflets are showing up in some fields in the central part of Illinois. These symptoms are characteristic of the bacterial leaf disease known as bacterial blight. We don’t see this disease all that often, so keep an eye open for these telltale symptoms.

Bacterial blight is caused by the bacterium *Pseudomonas syringae*, which overwinters on residue and sometimes spreads via infected seed. The bacterium is transported to the plant when it is blown and splashed onto the surface of soybean trifoliate leaves. *P. syringae* remains on leaflets until proper moisture conditions prevail, when it then will infect the plant. During wet weather, the bacterium enters the leaflet either through the water-regulating stomata or, more typically, through wounds. The bacterium moves into the spaces between the cells and multiplies. At the same time, the space between the cells is filled with a slimelike bacterial excretion, while a toxic bacterial by-product inhibits the formation of chlorophyll.

The latter two substances result in symptoms easily observed with the naked eye within five to seven days of infection. The bacterium spreads best when storms are particularly windy.

Bacterial blight initially speckles the soybean leaflet with angular yellow spots that eventually turn light brown. Those lesions initially appear slightly water soaked. Leaflets appear slightly puckered, similar to the puckering observed with some soybean viruses. As the tissue encompassed by the lesion dries, the lesion turns a dark red-brown to black color. These necrotic lesions appear all the more stark because they are surrounded by a yellow halo. The lesions usually are seen on soybean leaflets but can appear on other portions of the plant as well. As bacterial blight progresses, the disease looks even more unsettling. Given enough moisture and optimum temperatures for development of the bacterium (70° with a bacterial envelope of 39° to 95°), the black lesions coalesce, forming large regions of necrotic tissue. The interveinal appearance of these necrotic areas may resemble well-aged sudden death syndrome. Given a little more time, the necrotic regions begin to drop from the leaflet, forming large, gaping, ragged holes. When combined with a little wind, the ragged appearance of leaf tissue intensifies.

In-season management of bacterial blight is nonexistent. However, hot, dry weather stalls development of *P. syringae*. Some resistance does exist
in soybean varieties, which restricts yield losses to a less than double-digit range. Those varieties without resistance may see yield losses near 15% when the disease is prevalent and ideal conditions prevail. Since farm implementations provide both a means of transport for the bacteria and the slight mechanical injury needed for infection, cultivation and other operations should proceed with caution in those fields exhibiting more intense bacterial blight symptoms. Where conservation agreements allow, deep plowing may bury residue, thus decreasing symptoms during the years following a bacterial blight outbreak. As usual, the use of high-quality (pathogen-free) seed may also aid the producer hoping to make the appearance of bacterial blight a once-in-a-lifetime event. — Matt Montgomery

Sudden Death Syndrome—What’s Up This Year?

First an introduction: my name is Loretta Ortiz-Ribbing, and I am the new University of Illinois Extension specialist for crop systems, located at the Macomb Extension Center. My background is diverse, including a B.S. in agronomy (crop protection), an M.S. in forestry (soils), and a Ph.D. in plant pathology. I have experience in agribusiness and worked for Velocis Chemical Co. in herbicide product development. I also have experience working with turfgrass pathology and management from the University of Illinois. My previous Extension experience includes two temporary positions with the U of I: Extension specialist in vegetable pathology, where I had statewide responsibilities for vegetable pathology and maintained the Illinois Fruit and Vegetable Newsletter, and as an Extension educator for IPM in the east-central regional office, where I had IPM responsibilities for 13 counties for agronomic and horticultural crops. Prior to my current position, I was the agriculture and natural resources extension educator for Purdue University in Elkhart County, Indiana. My postdoctoral research focused on the use of native fungi as bioherbi-}

cides, and I currently am working on a project looking at organisms that control common waterhemp and other pigweed species. While my major focus is pathology and IPM, I look forward to using my diverse background to assist clients and develop applied research programs in the western region of Illinois. Now on to sudden death syndrome (SDS).

Typically, foliar symptoms for SDS show up in late July and early August; however, in southern Illinois, foliar symptoms appeared in some sentinel plots almost a month ago. It will be interesting to see the impact SDS has in these early symptomatic fields.

The soilborne fungus Fusarium solani f. sp. glycines, which is the causal organism of SDS on soybeans, infects soybean roots. This pathogen stays on the root system of the soybean plant; however, the fungus produces a toxin that is translocated upward in the plant, causing foliar symptoms.

The foliar symptoms produced by SDS begin as chlorosis and necrosis of the interveinal tissue of soybean leaves, which then enlarge, forming yellow and brown areas between the green midvein and green lateral veins. Infected plants in the field prematurely turn yellow and then brown, whereas healthy plants remain green. Other symptoms include rotting of roots, necrosis of the crown, discoloration of the vascular tissue in roots and stems, premature defoliation of the soybean plant, and abortion of the flowers and pods. When leaves drop off the soybean plant, they often drop from the top, leaving the petiole attached to the stem.

The foliar symptoms of SDS seen in the field are similar to those of brown stem rot, but internal symptoms differ, in that with SDS there is no pith discoloration. Some uniform reddish brown vascular discoloration can occur with SDS, but without a streaking pattern. Leaf symptoms on plants with stem canker can be confused with SDS; however, soybeans with stem canker have cankers on the lower stem, and plants with SDS do not have cankers. Information on stem canker and brown stem rot can be obtained from the online Report on Plant Diseases about root and stem diseases of soybeans at www.ag.uiuc.edu/~vista/abstracts/a504.html.

Results from previous field research on SDS showed that infection of the soybean root system occurred without the presence of observable foliar symptoms. In addition, we found that when severity of SDS was low to moderate, foliar symptoms were not always a good indication of yield potential. The implications of our results are that the fungus causing SDS colonizes the soybean root system and potentially causes reductions in yield even though the plant is showing no foliar symptoms. The effects of root infection are not as apparent as foliar symptoms and usually remain unnoticed unless the blue-colored spores of Fusarium solani f. sp. glycines, the causal organism, are observed on the roots of mature plants.

This explains, in part, why this disease is difficult to control. There are still many unknown factors about this pathogen and how it is causing disease on soybeans. In addition, it is difficult to predict when, where, and how severe SDS will be because of the many environmental and other factors that influence disease development.

In the meantime, it is best to try to manage SDS by lessening its impact by way of the following steps:

1. Learn to identify SDS in the field, as symptoms may appear similar to more common diseases such as brown stem rot or stem canker.
2. Select soybean varieties that mature at different times. Use either different maturities within a maturity group or use different maturity groups. Early-maturing cultivars appear better.
3. Delay planting or extend planting time so that all soybeans are not at the same growth stage at the same time. However, do not wait past the suggested time for your area of the state.
4. Use cultural practices to improve drainage in low spots, reduce cyst nematode populations, and reduce soil compaction.

5. Crop rotation is of limited value since this organism can persist in the soil for many years. However, planting continuous soybeans is not recommended since this can increase other diseases.

6. The key to reducing yield losses from SDS is to plant cultivars with relatively high levels of tolerance or partial resistance to SDS. Information on SDS tolerance/resistance for commercial varieties from trials in Illinois can be found at the University of Illinois VIPS Web site (web.aces.uiuc.edu/VIPS) and the Southern Illinois University SDS/SCN Web site (www.si.edu/~soybean/—Loretta Ortiz-Ribbing

### CROP DEVELOPMENT

**Check Corn and Soybean Fields Carefully**

While there seem to be relatively few serious problems in Illinois corn and soybean fields so far in 2006, this does not mean that every field is a lock for high yields. This is the time of year when unexpected problems might develop, and failure to see such problems now can mean real disappointment at harvest, especially if the problems were ones that could have been alleviated if found in time. As in most good crop years, the view from the road is good to excellent, and we need to walk out into the field to see how the crop there is doing.

One problem that has affected some areas of southern Illinois is wind damage from the storms last week. When looking at such fields, note whether plants have broken lower stalks or the roots have pulled out of the soil and stalks are still intact. Having roots pull loose on one side usually causes less yield loss than when stalks are broken over, because the stem remains capable of transporting water and nutrients, and such plants often have more of their leaf area still capable of functioning. Roots that pull out of the ground are much less effective, however, but if even a third of the root system remains in the soil, it can do a reasonable job of taking up water and nutrients if the soil doesn’t dry out too much. Water use is starting to decline in the more advanced corn fields, and lodged plants use less water as well.

Stalks that break over often have nearly all of their upper leaves lying on the ground, and if the ear is in contact with the ground as well, such plants may produce little yield. Breakage at a stalk node is generally more serious than “kinking” at an internode, but both reduce the ability of the stalk to transport water and nutrients. Regardless of whether the stem is intact or broken, lodged corn plants cannot intercept normal amounts of sunlight, and yield reductions of at least 15 to 25 percent should be expected for corn that lodged at kernel growth stages R2 (blister) or R3 (milk). Harvest will usually be difficult, and harvest losses will often add to physiological yield loss. Once they’re past pollination, corn plants rapidly lose their ability to respond to lodging by “goosenecking” partially upright, so there may be little improvement in harvestability in many affected fields.

The first thing to note in most fields is how successful pollination and kernel set have been. At a plant population of 30,000 per acre and assuming (conservatively) an average final kernel weight of 90,000 kernels per bushel, 3 kernels per ear means one bushel per acre. Thus ears need to fill at least 600 kernels for a yield of 200 bushels per acre. This isn’t quite as exact as it sounds, since more kernels on an ear often end up smaller and fewer kernels per ear end up larger, but it’s a starting point to assess potential. If filling conditions remain favorable, then kernel number might in fact limit yield, even though kernels might grow to be considerably larger than average.

This is the prime time to look at the corn crop canopy to see how well the crop is taking in sunlight. If kernels numbers are reasonably high (15 to 20 million per acre), then sunlight interception by the canopy is often the limiting factor for yield. A subjective way to look at the canopy is to look down the row at about eye level, noting how densely the leaves tend to overlap across the rows. Then, look at the soil surface underneath the canopy at midday when the sun is shining, and see how many patches of sunlight there are on the soil surface. While there is always some sunlight hitting the soil surface, the patches of light should be small and randomly scattered. If they are numerous and lined up in the center between rows, it’s likely that plant population might be too low, row spacing might be too wide, or plants might not have developed to their normal size due to some sort of stress.

It’s unusual for insects to defoliate large corn plants to the extent that light interception is compromised. Hail is a more common cause of leaf area loss, and for corn just past pollination, yield loss from hail is almost directly proportional to the reduction in light interception. Light interception is not proportional to leaf area loss, since some leaf area can be lost before light interception starts to drop. Leaf diseases don’t necessarily reduce light interception, but they do cause intercepted light to be used poorly, and the net effect is often more damaging than leaf area loss because diseased leaves do not let much light pass through to be intercepted by lower leaves.

Soybean plants have responded to favorable moisture this season by continuing to make considerable vegetative growth as they flower and start to set pods. Most early-planted soybeans are now at stage R3 (beginning podset) or perhaps R4 (full pod), though some have not yet reached R3, which requires that a small pod be present on one of the four uppermost nodes. Flowering is slightly delayed in Illinois this year, likely due to July rainfall and moderate temperatures most of this month, but also due to late planting, including some replanting and doublecropping. We normally think that earlier flowering and podset-
ting is favorable, but unless it turns dry in August, the later flowering this year might not be a problem.

While it’s usually advantageous to avoid moisture stress as we move into podsetting, we would also prefer that there be heavy rainfall and a lot of cloudy weather, both of which can lead to tall plants and large leaves. We saw a great deal of this in 2003, and when it turned dry in August that year, the crop deteriorated quickly. Compared to that year, we have not had in 2006 the excessive rainfall that led to compromised root systems in 2003. So the soybean crop is not as vulnerable this year, but tall plants and large leaves still cause a great deal of internal shading within the soybean canopy, and this can reduce seed numbers and seed size. A heavy canopy also retains moisture better, and this can cause problems with diseases such as white mold. There’s no reason to worry too much about excessive canopy growth at this point, but it is worth noting that very high soybean yields are more likely when plant size is average than when plants are much shorter or much taller than normal.

Like corn, soybean fills seeds well only if it has adequate seed numbers and a fully functioning canopy, capable of taking in most of the sunlight that fall on the crop. The period in which this needs to happen has not yet started in most fields, but it will begin once pod numbers are near their maximum and seeds start to fill, in early August. Soybeans tend to have more leaf area than they need, so small amounts of defoliation may not affect yield. Leaf diseases and diseases such as brown stem rot and sudden death syndrome will reduce the amount of sugars moving to the seeds, though, and so will reduce yield in most cases. Be on the watch as well for insects like aphid that can reduce sugar flow and for insects or diseases that attack pods and seeds.—Emerson Nafziger

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.

Southern Illinois

The major news in the past week has been back-to-back storms on July 19 and 21. Areas hit with high winds and hail have suffered serious crop damage. Hail has caused severe defoliation of both corn and soybean in areas south of Bunker Hill, around Trenton to Breese, and probably other areas as well. Some corn is root-lodged, while other fields are broken over. We have been receiving numerous questions regarding how much yield loss may result and whether it would be preferable to harvest as silage if possible. Most of the corn is at R3 (milk stage), and soybean is at R3 to R4 (pod development). Japanese beetles seem to be slowing down a bit, or perhaps growers have finally given up worrying about them. They can still be easily found tunneling down into the tip of corn ears to consume silks. Although pollination is complete, this type of injury may open the husk and promote the development of ear rots.

Western corn root worms are being observed in some soybean fields in the northern part of the region.

West-Central Illinois

News from the region includes the arrival of badly needed rainfall this past week. Many counties experienced slightly cooler temperatures, too. Most of Woodford County received about 1 to 1.5 inches over a three-day period, and areas around Christian County reported almost 2 inches of rain. The crops responded dramatically in areas where rain was received; soybean plants grew a foot last week in Adams and Brown counties, while in Montgomery County corn is starting to elbow back after high winds and storms blew over corn plants in that area.

Corn is done pollinating, except for a few very late-planted or seed fields. Soybeans in the region are in the R2 or R3 growth stage.

We had very few insect problems during pollination. Soybean aphids have been found in Woodford County but not in most other areas. A few soybean fields have been sprayed for Japanese beetles in Christian County. Some western corn rootworm beetles have been found in soybeans, but in general not much soybean defoliation by insect feeding has been observed.

Many fields look good and have low disease pressure, although a soybean sentinel plot at the Orr Center is suspected to have symptoms of SDS. Some soybean fields in Sangamon and Menard counties have Rhizoctonia-like symptoms.

Alfalfa is rather short due to the lack of rain. Third cutting is just getting started. Potato leafhoppers are a problem in alfalfa areas in Sangamon and Menard counties.
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