

PEST MANAGEMENT & CROP DEVELOPMENT

BULLETIN

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INSECTS

Bean Leaf Beetles: To Spray or Not to Spray?

The "insect of the week" award goes to bean leaf beetles in several areas of Illinois. We have reported a few times already that numbers of bean leaf beetles seemed to be greater than anticipated this year, and they have begun to find the soybeans that were planted earlier this spring. Numbers of bean leaf beetles reported range from significant to worth watching. So, if you have not already done so, please schedule some scouting trips to soybean fields in which seedlings have emerged and are growing. Bean leaf beetles that have been waiting for emerging soybeans in their vicinity almost certainly will find them.

The threshold we have used for bean leaf beetles feeding on seedling soybeans are 16 beetles per foot of row during the early seedling stage and 39 beetles per foot of row when soybeans are at stage V2+. As one astute observer noted, counting bean leaf beetles per foot of row is not easy when the beetles sense your presence and scurry into cracks in the soil. So, if you prefer to count beetles per plant, the guidelines from Iowa State University suggest 2.0 to 4.4 beetles per plant at growth stage VC, 3.1 to 6.8 beetles per plant at growth stage V1, and 4.9 to 10.7 beetles per plant at growth stage V2. The ranges in thresholds are the result of different values for soybeans and different costs of control. You can access the entire economic threshold table at <http://www.ipm.iastate.edu/ipm/icm/2003/4-28-2003/blbmanagement.html>. Please note that these thresholds pertain to feeding injury by bean leaf beetles and are not appropriate for making a decision regarding management of bean pod mottle virus.

Bean pod mottle virus? Are the current bean leaf beetles carrying the virus and transmitting it from plant to plant? Remember, the beetles we see now are the same ones we saw at the end of the season in 2002. These are the second-generation beetles from 2002 that overwintered and emerged this spring. Did these beetles harbor the virus overwinter and begin spreading it around this spring? Did the beetles pick up the virus from other hosts this spring and then carry it into soybeans?

Quite honestly, the answers to the aforementioned questions are not known, particularly in Illinois. There is much "word on the street" that there was a lot of bean pod mottle virus last year in Illinois, and apparently soybean growers are anxious about it in 2003. But do we really have a good assessment of the prevalence of the virus in Illinois soybeans in 2002? Lots of word of mouth and lots of testimonials, but very little verification. Certainly the virus affected some seed and food-grade soybeans last year, but the effects of the virus on commercial soybean cultivars in Illinois remain not well documented.

We are almost certain that people are overreacting to bean leaf beetles, and we fear the overreaction will escalate as rumors continue to spread. We urge you to assess the situation with bean leaf beetles and bean pod mottle virus thoughtfully before making a decision that an insecticide is warranted. Research from Iowa State University suggests that treatments for management of bean leaf beetles and, ultimately, bean pod mottle virus should be applied

early in the season. Treatments late in the season are not very effective for managing bean pod mottle virus. However, just because early treatments are preferred over late treatments, the ultimate question is whether any treatment is necessary. Don't spend money foolishly if bean leaf beetles are not causing significant injury and if there has been no confirmation of bean pod mottle virus in your area.

All that having been said, if an insecticide for control of bean leaf beetles is warranted, consult Table 1 for suggested products and rates. Please read the label carefully, follow all directions, and comply with precautions.

As we learn more about bean leaf beetles and bean pod mottle virus, we will keep you informed. This pest situation has developed rather suddenly over the past 2 to 3 years, and we have much to learn.—Kevin Steffey and Mike Gray

Table 1. Insecticides suggested for control of bean leaf beetles in soybeans.

Product	Amount of product per acre
*Ambush	3.2 to 6.4 oz
*Asana XL	5.8 to 9.6 oz
*Baythroid 2 dimethoate	1.6 to 2.8 oz See product label. (Different formulations have different rates of application.)
*Lorsban 4E	1 to 2 pt
*Mustang Max	2.8 to 4.0 oz
*Penncap-M	2. to 3 pt
*Pounce 3.2EC	2 to 4 oz
Sevin XLR Plus	1/2 to 1 qt
*Warrior	1.92 to 3.2 oz

*Use restricted to certified applicators.

Update on Heat Unit Accumulations for Corn Rootworm Larval Hatch

The annual "watch" for the corn rootworm larval hatch continues. Soil heat unit accumulations (base 52°F) at the 4-inch level, from January 1 through May 12, 2003 (Figure 1), indicate that the corn rootworm larval hatch may be very similar or slightly ahead of

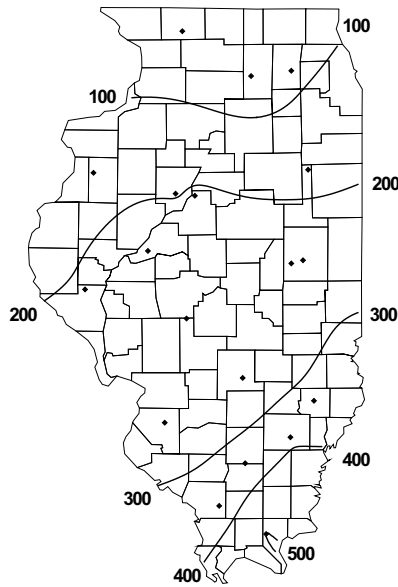


Figure 1. Actual soil degree-day accumulations (base 52°F) at the 4-inch level, from January 1 through May 12, 2003. (Map courtesy of Bob Scott, Illinois State Water Survey.)

last year's hatch (late May). After 380 to 426 soil heat units have accumulated, from January 1, approximately 50% of corn rootworm larvae should have hatched. Although it's too early to predict accurately the severity of corn rootworm problems this season, the early planting and average-to-above-average densities of western corn rootworm adults in 2002 could contribute to some management challenges this year. If precipitation patterns change during the next few weeks and a dry spell occurs, this development also would enhance larval survival during hatch. Saturated soils would interfere with larval establishment. Corn rootworm larvae orient toward roots based on the concentration of carbon dioxide in the soil profile resulting from the respiration of roots. Roots that are in waterlogged soils don't respire as efficiently, and the production of carbon dioxide is impaired. The dispersal of first-instar larvae through the soil also likely is impaired in saturated soils.

We'll let you know when the larval hatch has been confirmed.—Mike Gray

Update on Stalk Borer Development and Management Tips

Stalk borers are sporadic insect pests that are native to North America and widely distributed east of the Rocky Mountains, from southern Canada to the Gulf Coast states. Stalk borer moths lay eggs in late August and early September on a wide variety of plants, including smooth brome grass, quackgrass, orchard grass, woolly cupgrass, wirestem muhly, and some broadleaf weeds, especially giant ragweed. The eggs (brown) overwinter on these weed hosts, and larvae begin to hatch usually in late April and early May. Stalk borers can utilize a wide range of hosts that include as many as 176 plant species from 44 families. Infestations are most commonly associated with infestations of broadleaf weeds such as giant ragweed, cocklebur, giant burr-elder, docks, and burdock. Stalk borer larvae typically have seven to eight instars; however, as many as 16 instars have been documented on plants with poor nutritional quality. Larvae may infest corn stems near the soil surface or move from whorl tissue and tunnel downward into stalks. Whorl injury results in plants with tattered leaves. Tunneling activities of the larvae may result in stunting, tillering, delays in plant development, and potentially barren corn plants.

Poor weed management programs most often result in interior infestations of stalk borers within cornfields. Most infestations are adjacent to field borders, ditch banks, waterways, and terraces that are infested with grasses and broadleaf weeds. Stalk borer larvae typically penetrate no further than 15 to 20 rows into cornfields from these noncrop areas. Continuous corn appears to be more susceptible to infestations.

Good management of stalk borers begins with sound weed management practices. In addition, knowledge of the timing of stalk borer dispersal from weed hosts in the spring can

improve the effectiveness of an insecticide treatment. Dispersal of stalk borer larvae (generally fifth to seventh instars) from weed hosts begins when approximately 1,100 heat units (base 41°F) have accumulated since January 1. By the time 1,400 to 1,700 heat units (base 41°F) have accumulated, from January 1, 50% of stalk borer larvae have abandoned their weed hosts and started their search for new corn hosts. Decisions regarding the necessity of an insecticide treatment need to be made within the heat unit accumulation range of 1,400 to 1,700 (base 41°F). Figure 2 provides the actual degree-day accumulations (base 41°F), from January 1 through May 12, 2003. Based on these heat unit accumulations, some limited movement of stalk borers into corn may be occurring in the southern tip of Illinois. Growers should begin their scouting efforts for this insect pest within the next week in these southern counties.

Some insecticides are labeled for use in tank mixes with “burndown” herbicides. As stalk borer larvae leave dying weed hosts, they come into contact

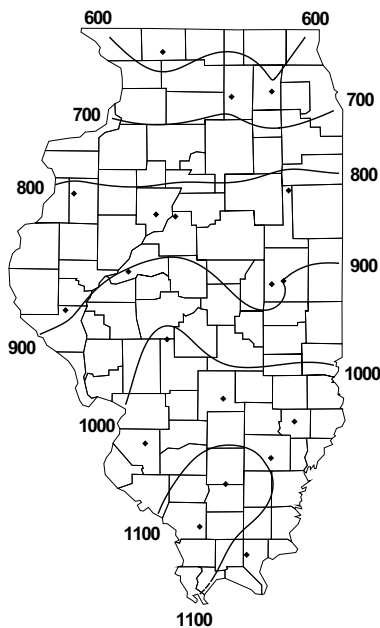


Figure 2. Actual degree-day accumulations (base 41°F), from January 1 through May 12, 2003. (Map courtesy of Bob Scott, Illinois State Water Survey.)

with the insecticide and are killed. Several insecticide products are labeled for stalk borer control (Table 2). Economic thresholds for stalk borers have been developed and published by Iowa State University. These thresholds (Table 3) are based on six corn-leaf stages, three corn prices, control costs of \$13 per acre, and a control level of 80%. The information in the table reveals that, as corn prices increase, the economic thresholds decline. The economic thresholds for smaller plants are lower than they are for taller plants. Also, recognize that these are only guidelines. If you can treat for a lower price or if you can achieve better control than 80%, the thresholds can be adjusted. Entomologists at Iowa State have reported that Bt corn “suppresses” or “slows down” stalk borer injury. So, if finding sufficient time for scouting for stalk borers is a problem, concentrate scouting efforts in non-Bt fields.—Mike Gray and Kevin Steffey

Table 2. Insecticides suggested for control of stalk borers in corn.

Product	Amount of product per acre
*Ambush	6.4 to 12.8 oz
*Asana XL	5.8 to 9.6 oz
*Capture 2EC	2.1 to 6.4 oz
*Lorsban 4E	2 to 3 pt
*Mustang Max	2.72 to 4.0 oz
*Pounce 3.2 EC	4 to 8 oz
*Warrior	2.56 to 3.84 oz

*Use restricted to certified applicators.

Table 3. Economic thresholds (expressed as a percentage of infested plants) for corn in border rows attacked by stalk borer. (Developed from research conducted at Iowa State University.)

Leaf stage	\$2 per bushel	\$3 per bushel	\$4 per bushel
1-leaf	10%	7%	5%
2-leaf	12%	8%	6%
3-leaf	15%	10%	8%
4-leaf	27%	11%	9%
5-leaf	27%	11%	9%
6-leaf	34%	23%	17%

Quick Tidbits on Insects

Same old story. . . . Black cutworm moths continue to fly throughout the state, but flights are significantly lower in northern Illinois. Regardless of these flights, cornfields should be scouted for early cutworm injury. A few more reports this week indicated some small feeding has been seen on seedling corn. Refer to earlier issues of the *Bulletin* for tips on scouting (issue no. 5, April 25, 2003) and rescue treatments (issue no. 6, May 2, 2003).

Second verse same as the first. . . . According to degree-days posted in last week’s *Bulletin* (issue no. 7, May 9, 2003), most of the state of Illinois should be experiencing larval feeding. Overall, alfalfa weevil injury is fairly scattered this year, but reports are still trickling in. A few more e-mails made their way in last week, but little more than pinhole feeding was reported. Reports of economic damage are few and far between; we received a few calls indicating some fields were being treated. As we progress past the first cuttings, injury to regrowing buds is minimal. But, as a reminder, control may be warranted after a cutting when both larvae and adults are feeding on more than 50% of the crowns and regrowth is prevented for 3 to 6 days.

Something new. . . . Potato leafhoppers are here! As the alfalfa weevil season winds down, get ready for potato leafhopper activity to begin. Potato leafhoppers do not overwinter in Illinois. These small green insects “ride” in on winds from the southern states. They are not a threat at the current time. Generally, potato leafhoppers do not increase to damaging levels until after the first cutting, the time scouting should begin. Economic levels of injury may be caused and treatment required when 0.2 leafhopper is found per sweep on alfalfa zero to 3 inches tall and when 0.5 leafhopper is collected per sweep in alfalfa 3 to 6 inches tall. More information on the insect in future newsletters. . . .

As always, I’m interested in anything you might find in the field.—Kelly Cook

PLANT DISEASES

What's the Scoop on Soybean Seed and Seedling Diseases in Illinois?

Although relatively few soybeans have been planted yet this year in Illinois, millions of acres will be in the ground very soon. Assuming that all the proper agronomic decisions for a good soybean crop have been made and implemented, seed and seedling diseases are major factors that frequently affect establishment of soybean stands and ultimately yield in many areas of the state. I get a greater volume of questions about this group of soybean problems than any other single disease issue on any crop in Illinois. Not all areas of Illinois seem to have significant problems with seed and seedling diseases, but some areas, such as much of the northeast quarter of the state, seem particularly prone to these problems. This article will briefly describe soybean seed and seedling diseases, their characteristics and the conditions that favor them, and approaches to managing them. Additional articles will appear in future issues of the *Bulletin* on topics related to soybean seed and seedling diseases.

What should you watch for and when? Seed and seedling diseases can begin soon after the seed is in the ground and continue up to and beyond the V2 stage. The first indication of these diseases is reduced germination and/or emergence that results in a thin stand; the second indication is damping-off that kills seedlings after they emerge. These disease problems are usually associated with cool and wet soil conditions, although major problems may not be noted until a week or more after the cool and wet conditions occurred because symptoms may be postponed while the infection progresses and kills the plant tissues.

What are some of the major pathogens involved, and what symptoms do they cause? Prior to observing reduced emergence and plant death, the plants

often show symptoms that are somewhat characteristic for different pathogens. The major pathogens that cause seed and seedling diseases are the fungal or fungal-like pathogens *Pythium*, *Phytophthora*, *Rhizoctonia*, and *Fusarium*. They all survive and persist in soil. Any of these pathogens, or a combination of them, can cause seed rot, and it is difficult to determine which is the main problem. Tan-brown, soft-rot symptoms on roots and stems caused by *Pythium* and *Phytophthora* are very similar and cannot be differentiated without laboratory testing. Reddish to dark brown, often sunken, lesions caused by *Rhizoctonia* are easier to recognize. The symptoms associated with *Fusarium* damping-off and root rot are light to dark brown lesions.

A new, useful publication with full-color photographs for identification and management of seed and seedling, as well as other, diseases is the *Pocket Guide to Soybean Diseases in the Midwestern U.S.* It is available from Information Technology and Communication Services (800-345-6087; www.PublicationsPlus.uiuc.edu). In addition, photos and information on soybean seed and seedling diseases can be found on the University of Illinois Field Crop Diseases Web site (<http://cropdisease.cropsuiuc.edu/>).

If a significant problem appears, what should be done this year?

1. Scouting and diagnosis. Because these diseases often progress quickly, it is important to scout fields to determine if and when the problem begins. Timely scouting will also enable collection of plants before they become completely rotted, and these plants can be sent to the UIUC Plant Clinic for diagnosis. Proper diagnosis of the major problem in particular fields can help with management because management recommendations can differ for different pathogens (for example, the *Pythium* and *Phytophthora* rots). The scouting should include inspections of drainage systems to ensure that nothing

is out of order and that drainage is occurring as expected for the area.

2. Replanting. A decision to replant or not is based on several factors, including the magnitude of the stand reduction and the planting date. Additional information on replanting decisions can be found in the 23rd edition of the *Illinois Agronomy Handbook*, which is available from Information Technology and Communication Services. If the decision is made to replant because of disease loss, you may want to consider using fungicidal seed treatments and perhaps a different cultivar with improved resistance to *Phytophthora*. These decisions are easier to make when the disease problem has been accurately diagnosed. Too many producers report replanting twice with the same cultivar that has no seed treatments and no resistance to *Phytophthora*, and fortunately the stand is usually good after the third planting, because by then the weather and soil conditions typically are warm and relatively dry.

Should seed treatments be used? No absolute answer to this question exists. Sometimes seed treatments provide a significant benefit, while at other times they don't provide a clear benefit. Some considerations include planting date, problems with seed and seedling diseases in the past, major types of seed and seedling diseases present, risk tolerance, soil compaction, seeding rates, drainage, and tillage. Each of these is affected by the weather. Warm and dry conditions usually result in fewer seed and seedling disease problems, and fungicides generally have the most benefit during cool and wet conditions.

Not all seed treatments are equally effective against the different seed and seed-rotting pathogens. Two general groups of fungicides exist for control of these pathogens. The systemic compounds Allegiance-FL, Apron-FL, and ApronXL are most effective for control of the "water-loving" pathogens *Phytophthora* and *Pythium*. The

other group includes Rival, Maxim-4FS, captan, and several other products that protect against *Fusarium*, *Rhizoctonia*, and other true fungal pathogens. Azoxystrobin is a new systemic fungicidal seed treatment that recently became available for soybeans in the product SoyGard, for control of *Rhizoctonia* and perhaps *Fusarium*.

For full-spectrum control of different pathogens, different combinations of these products are often used. For example, Rival and Allegiance are often applied together, azoxystrobin is combined with metalaxyl, carboxin is combined with PCNB and metalaxyl, and the product ApronMaxx RTA is a mixture of ApronXL and Maxim.

In summary, many different management practices, including seed treatment fungicides, can reduce the damage to soybean crops that often occurs from seed and seedling diseases in Illinois.—*Dean Malvick*

Corn Nematodes in Illinois

Here's a situation that occurs in many areas in Illinois every year: The corn has come up, but in one or more areas of a field, it just doesn't "look right." Some plants may be stunted, yellow, or purplish. Root systems may be stunted or brushy, or even rotting. What's the problem? You can probably think of 10 things it *could* be.

Most of the time, nematodes are the last thing on the list of things to check as the cause of corn development problems. That's understandable, because nematodes don't cause specific symptoms and they're also hard to check for. The *only way* to diagnose nematode problems in corn is through soil samples analyzed by a qualified nematode testing lab. Many private labs will test for corn nematodes, as will the University of Illinois Plant Clinic; see its Web page at <http://plantclinic.cropsci.uiuc.edu/index.html>. Corn nematode control depends on the nematode species involved and how high its numbers are, so it's very important to get a reliable diagnosis.

In Illinois, when most people speak of "corn nematodes," they're talking about the needle nematode, which can cause severe damage. However, "corn nematodes" come in lots of different shapes, sizes, feeding habits, and propensity for damaging corn. For lots of good information, start with the University of Nebraska Web page at http://nematode.unl.edu/corn_nematodes.html. Be sure to click on the "links" link.—*Terry Niblack*

WEEDS

Rainbows in the Fields

The persistent rains across some areas of Illinois have delayed corn and soybean planting and the implementation of weed control practices on many acres. These delays have allowed existing vegetation to continue growing, and in many fields winter annuals are flowering, producing a colorful landscape (yes, "rainbow" might be a stretch, but you have to admit it caught your attention). In other areas of the state, emerged corn is being sprayed with postemergence herbicides. It's somewhat difficult to consider all possible weed control questions or scenarios for a crop so varied (some still in the bag, some receiving postemergence herbicides), but these are scenarios for consideration:

No herbicide applied, crop not planted. Existing vegetation should be controlled prior to planting. This can be accomplished by either preplant tillage or herbicide application. Tillage would provide the shortest interval between the weed control practice and planting, but if fields are tilled "on the wet side," larger weeds can sometimes survive the tillage operation and continue to be problems after the crop emerges. If you opt for a herbicide to control existing vegetation prior to planting, several factors should be considered:

1. Some herbicides (2,4-D in particular) have a minimum interval between application and planting. Many times, this interval is put in

place to decrease the likelihood of crop injury. Several (not all) 2,4-D formulations are labeled for pre-plant applications, but not all 2,4-D product labels have identical waiting intervals (if any) between application and *corn* planting, so it pays to check the respective product label.

2. Even if no waiting period is specified on the herbicide label, burndown herbicides require time to work. Planting too soon after application can injure the weeds, potentially reducing the level of weed control. Contact herbicides (those that do not move much within the plant following absorption) generally require less time between application and planting than translocated herbicides. Translocated herbicides must have sufficient time to move within the target plant to provide good control.
3. Adjust the herbicide rate to control the vegetation as it stands now. If you prepaid last fall for a particular burndown herbicide rate, that rate may or may not be sufficient to control the existing vegetation once you can make the application.

No herbicide applied, corn has been planted. We discussed the use of pre-plant or preemergence herbicides after corn emergence in a previous issue of the *Bulletin* (see issue no. 7, "Missed the Preemergence Application Window in Corn?"), but a couple of additional points deserve consideration:

1. Closing the seed furrow can be difficult if planting occurs under wet soil conditions. This in itself can lead to establishment problems, but if a preemergence herbicide will be applied soon after planting, an open seed furrow provides an avenue for direct contact of the seed with the herbicide. Labels of many soil-applied corn herbicides warn that severe corn injury can result if the herbicide comes in direct contact with the seed.
2. Be especially cautious about making preemergence applications to

fields where the corn is within a day or two of emerging, especially with nonselective herbicides or soil-applied herbicides that should *not* be applied after crop emergence. Even if the crop hasn't fully emerged or isn't yet visible from the road, small cracks or other openings in the soil surface may allow the herbicide to come into direct contact with the emerging coleoptile. Do not use nitrogen fertilizer as the herbicide carrier if corn has begun to emerge.

Herbicide applied, crop not planted. These fields, especially fields in which the herbicide application was made several weeks ago, are excellent candidates for scouting prior to planting. If weeds are present, you should consider controlling them prior to planting. Why not just wait and spray after planting? That may be a feasible option, but the planting operation will likely injure some of the weeds, and they will need time to recover before being sprayed. Waiting to control the existing weeds after planting is also gambling that the weather will cooperate and allow you to make the application before the existing weeds begin to adversely impact the crop.

Herbicide applied, crop has been planted. Whether you initially planned to use a soil-applied herbicide program for weed control or a soil-applied followed by postemergence herbicide program, keep a close eye out for weed emergence. Heavy precipitation in many areas of the state may have moved some soil-applied herbicides deeper into the soil profile than is conducive for good weed control. Less-than-ideal growing conditions (especially excessive soil moisture) may also increase the likelihood of corn injury from some soil-applied herbicides. When applying a postemergence herbicide, remember that a corn crop under stress from adverse environmental conditions may be more prone to develop significant injury symptoms. Spray additives that enhance herbicide penetration into the weeds also help increase the rate of uptake into the corn crop. Rapid herbi-

cide uptake coupled with slow corn growth because of adverse environmental conditions is a good recipe for corn injury.

One Other Consideration

If your initial plan was to plant a particular herbicide-resistant corn hybrid but you decide to switch to a different hybrid that does *not* have the resistance trait of your initial selection, make sure to note this and communicate the change to whoever will apply the postemergence herbicide. This may sound like common sense (actually it is), but each year we hear of an instance where an entire corn field was killed following a postemergence herbicide application because someone didn't remember or know that hybrid selection had changed.—Aaron Hager and Christy Sprague

CROP DEVELOPMENT

Plant Spacing Uniformity

In many areas in Illinois, this is a good time to look at corn stands, including both plant spacing uniformity and uniformity of emergence. Uniformity of emergence for those fields planted so far is generally very good; when soils remain relatively dry as the crop emerges, usually few barriers to emergence and so few problems with emergence time uniformity exist. We planted one study here on two dates (March 24 and April 23), and for both planting dates, emergence was complete within 2 to 3 days of when it started. The March planting emerged in 22 to 24 days, and the April planting in 12 to 13 days. Most stands I have seen in fields look very uniform in plant size, though standing water or soil washed off or onto emerging plants will cause problems in some areas.

The question of plant spacing uniformity continues to come up, though the replacement of older planters continues to gradually improve the uniformity of seed drop spacing down the row. I would sum up the results of

recent research on plant spacing uniformity as follows: *Within reason, if a planter is dropping the desired number of seeds per acre with good depth control and adequate seed covering, plant spacing variability is costing little or no yield loss in corn.* When I say "within reason," I mean that the planter is not doing things like plugging up and accumulating seed to drop in heaps, that the vacuum or finger pickup units are properly set and maintained, and that the planter monitor shows reasonably uniform drop among units.

I realize that the preceding statement is not accepted by everyone, and I am aware of some field studies that show that improving "sloppy" stands can increase yields. Our own studies, plus data from Wisconsin, Ontario, and other places, though, show little or no yield response to changes in plant spacing variability. Plant spacing uniformity (or variability) is measured most often by "standard deviation" (SD), a calculation of how much plant-to-plant spacings differ from their average. A perfect "picket fence" stand, with every plant exactly the same distance from its neighbors, has a standard deviation of zero. In field measurements I have made, SD values have ranged from about 1.5 to 5 inches or so. To give you an idea, perfectly spaced seeds 7 inches apart but with 1 seed in 10 failing to emerge gives an SD value of 2.3 inches. One double rather than a skip in 10 seed drops gives an SD of 2.1. One skip and one double per 10 drops, which would mean a full stand, produces an SD value of 3.3 inches.

One problem with using standard deviation to calculate uniformity of stand is that it is so laborious; most people measure it by the "ruler-on-a-stick" method, where each distance between adjoining plants is recorded for consecutive plants down a length of row, usually for 20 to 50 plants or so. That's fine for that section, but because of the nature of skips, doubles, and other things that affect plant spacing, a section of row 15 to 30 feet long usually does not represent

a field very well. I have used a “Space Cadet” that was developed some years ago, which can accumulate 100 plant spacings, and I usually take such counts 6 to 10 times within a field. Even that seems inadequate sometimes, especially when a skip 2 or 3 feet long in one segment doubles the SD. Simply, no fast and easy way exists to get a good measurement of plant spacing variability in the field.

We know from research that doubles, which have about the same effect on SD as skips, do not have the same effect on yield; many doubles will produce two ears if conditions are good and can even increase yield, while skips almost always decrease yield. It may be that SD should be replaced by a method that measures number of skips, say, longer than two or three times the average seed drop distance, per 100 feet or per 200 or 300 plants. We don’t have the data to fine-tune this concept, but skips and loss of population, not seeds dropped an inch or two away from “dead center,” are the real problems when plant spacing uniformity is less than we’d like, and they’re the ones we need to pay attention to.

Some people have wondered if uniformity of plant spacing is also a concern in soybean. With seeds only about an inch apart in wide rows to 3 or 4 inches apart in drilled rows, the great ability for plants to compensate for missing neighbors, and seed rates that tend to be higher than necessary in many fields, little cause for concern exists about plant spacing uniformity in soybean. Improvements in metering soybean seed, however, and improvements in metering mechanisms to reduce seed injury have been welcome changes. We expect to pay increasing attention to improving efficiency of soybean seed use, including eventual sale of seed by number and more precise dropping by seed number rather than pounds per acre. Improved planting mechanisms will make such changes possible.—*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 Southwest districts, and Peoria, Woodford, Tazewell, Mason, Menard, and Logan counties from the Central district)
- East-central (East and East Southeast districts [except Marion, Clay, Richland, and Lawrence counties], McLean, DeWitt, and Macon counties from the Central district)
- South (Southwest and Southeast districts, and Marion, Clay, Richland, and Lawrence counties from the East Southeast district)

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

Northern Illinois

Fieldwork resumed early this week. There has been very little field activity in most of the region during the past 2 weeks because of wet soil conditions. Most of the area has had 3 to 5 inches of rainfall since May 1. Corn and soybean planting are the main activities at this time, with corn planting estimated at over 80% complete.

Corn emerged in many fields during the past weekend. Considering the cool temperatures and wet soil environment, corn color and emergence appear to be better than expected.

However, some field areas will need to be replanted because of repeated ponding.

Jim Morrison, crop systems educator, reports alfalfa in the Freeport/Rockford area was 16 to 22 inches tall in the vegetative stage on May 12. For estimates of preharvest alfalfa quality, growers are encouraged to check out the Web site at <http://peaq.outreach.uiuc.edu/>.

Southern Illinois

Unlike much of the rest of the state, fieldwork in southern Illinois has been at a virtual standstill since the third week of April. Rainfall toward the end of last week was more variable than previous storms, with amounts ranging from 1 to 3 inches or more, depending on the location. Ron Hines reports intense captures of black cutworm moths in the extreme southern tip of the state following the storms on May 6 and 10.

Corn planted in April is at growth stage V3 or later and appears to be in good condition except where water is ponding. Some wireworm damage is being seen, even on corn that had an insecticide seed treatment. We have also received reports of some fields being sprayed for flea beetle injury. This may be a year when corn growers here take a double hit: some very early corn will be at risk for first-generation European corn borer, and some very late corn will be at risk for second-generation ECB.

Wheat is at or beyond Feeke’s stage 10.5 (flowering). It is still too early to tell whether head scab is going to be a serious problem.

Little or no first-cutting alfalfa has been harvested. Many alfalfa fields are beginning to lodge, which will make harvest more difficult and increase the likelihood of leaf spot diseases in the second cutting.

West-Central Illinois

Most of the region received heavy rain during the past week, with some reports of 6 inches or more. Conse-

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quently, little fieldwork was done in those areas. Where rainfall did not exist or in the sandy soil areas, planting did continue.

The earliest planted corn is in the V4–5 stage. Pest complaints have been few, but those received include white grubs, cutworms, and flea beetles. Some fields have been treated for cutworm and flea beetle control. Postemergence herbicides are being applied where soil conditions allow.

Soybean is beginning to emerge in some fields. Bean leaf beetle populations are anticipated to be high in those early fields. We have no reports of seedling diseases yet.

Most wheat fields are in the boot or heading stages. Those fields continue to look good, with very few major diseases noticeable.

Alfalfa harvest has begun where weather has permitted, and alfalfa weevils continue to be a problem. Because of a 3- to 21-day harvest

interval with most insecticides, farmers will probably take the first cutting off and evaluate the weevil problem for the second cutting.

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