



# PEST MANAGEMENT & CROP DEVELOPMENT

## BULLETIN

FOR IMMEDIATE RELEASE  
No. 13 / June 20, 2003

Executive editor: Kevin Steffey,  
Extension Entomologist

Available on the Web at  
<http://www.ag.uiuc.edu/cespubs/pest/>  
For subscription information, phone  
217.244.5166, or e-mail  
[acesnews@uiuc.edu](mailto:acesnews@uiuc.edu)

Copyright © 2003, Board of Trustees,  
University of Illinois

### Also in This Issue

- Quality Hay Contest at 2003 Illinois Forage Expo, 126**
- Numbers of Soybean Aphids Increasing, 126**
- European Corn Borer Larvae Present, 126**
- Watch for Increases in Densities of Potato Leafhoppers, 127**
- Survey of Stem-Boring Insects in Weeds, 127**
- Checklist for Postemergence Herbicide Applications in Soybeans, 128**
- And More!**

---

### Small Grains Twilight Field Day, June 24

Growing and marketing small grains will be the focus of the Small Grains Twilight Field Day on June 24 at the Northern Illinois Agronomy Research Station, 14509 University Road, Shabbona.

The events for the evening will begin at 5:30 p.m., with a light supper, while Jim Quinton, director of the Illinois Wheat Association, provides a "Small Grains Market Outlook." Michael Richolson, district conservationist with USDA-NRCS (Natural Resource Conservation Service), will discuss "Fitting Small Grains into the Farm Bill." "Niche Markets for Small Grains" also will be discussed. Dr. Fred Kolb, University of Illinois small-grains breeder, will round out the evening at the small-grains research plots discussing "Small Grain Varieties and Diseases."

This program is cosponsored by the University of Illinois Extension DeKalb County, USDA-NRCS, and the Illinois Wheat Association. The registration fee is \$10.00 (\$5.00 for Illinois Wheat Association members). CCA continuing education units (CEUs) have been applied for. For more information or to register, please contact University of Illinois Extension DeKalb County, (815)758-8194.—*Ellen Phillips*

---

### Crop Session to Focus on Field Insect Management

Producers, agribusiness dealers, and crop scouts are invited to "Managing the Insects of Summer," sponsored by U of I Extension, on July 11. The workshop will be conducted at the Crops Training Center at the Northern Illinois Agronomy Research Center, 14509 University Road, Shabbona.

Discussion will focus on managing the new variant of western corn rootworm, including scouting guidelines, economic thresholds, and control products. The status of European corn borers and alternatives for management also will be discussed. Depending on the insect situation in early to mid-July, management updates for bean leaf beetles and soybean aphids may be presented. Dr. Kevin Steffey, Extension entomologist in the Department of Crop Sciences at the University of Illinois, will lead the discussion. The workshop will include classroom sessions and in-field, hands-on demonstrations. Three IPM continuing education units (CEUs) will be provided to certified crop advisers.

Registration begins at 8:30 a.m., and the workshop will be conducted from 9:00 a.m. to 12:00 noon. The cost is \$25.00 per person. Reservations are due by July 4 at the Quad Cities Extension Center, c/o Dave Feltes, 4550 Kennedy Drive, Suite 2, East Moline, IL 61244, telephone (309)792-2500. Make checks payable to University of Illinois Extension. A minimum of 20 reservations are needed to conduct the workshop.—*Jim Morrison*

---

### Quality Hay Contest at 2003 Illinois Forage Expo

A quality hay contest will be just one of the features at the free 2003 Illinois Forage Expo, July 1 at the north edge of Macomb. The center of operations will be the Western Illinois University (WIU) Livestock Center, located 1 mile west of Route 67 on Tower Road (N1400) at the intersection of Tower Road and Wigwam Hollow.

Entries in the quality hay contest will be evaluated for bale density, visual assessment, crude protein, acid detergent fiber, and relative feed value.

There is no entry fee, and NIRS analysis will be conducted free of charge. Participants may enter one sample (complete bale) in each of the following classes: alfalfa, grass, alfalfa-grass, and other (clover, clover-grass, etc.). A sample entry is a complete bale, such as a small square, large square, or large round, made from the 2003 hay crop. Bales exceeding 100 pounds need to be weighed on official scales and a weigh ticket provided for verification. Bale entries must be delivered to the Expo site by 10:30 a.m. on July 1 to allow adequate time for sampling, analyzing, and judging.

The Expo will include tours/discussions of WIU's livestock grazing research plots and forage species plot and other educational presentations. Presenters will include WIU staff, U of I Extension educators, and Natural Resources Conservation Service staff. The Expo will focus on forages for both grazing and harvesting systems. There will be field demonstrations of forage harvesting equipment and commercial displays of forage-related products and equipment as well as a U of I Extension display on poisonous pasture weeds.

The Expo runs from 9:00 a.m. to 4:00 p.m. Hosts are WIU, the city of Macomb, and Tim Sullivan. Sponsors are WIU, U of I Extension, Illinois Forage and Grassland Council, Western Illinois Forage and Grassland Council, Natural Resources Conservation Service, and Illinois Grassland Conservation Initiative.

For more information about the Expo or about exhibiting a commercial display, contact Dean Oswald, University of Illinois Extension, Macomb Extension Center, (309)836-3366, or e-mail [oswaldd@uiuc.edu](mailto:oswaldd@uiuc.edu).—*Dale Baird*

---

## Erratum

As the result of a proofreading error, the wrong issue number appears on printed copies of last week's *Bulletin* (issued June 13, 2003; note that the numbering on the Web is correct). Those of you who hang on to your

paper copies may wish to change the incorrect "No. 8" on page 1 and in the page headings of subsequent pages to the correct "No. 12."

## INSECTS

### Numbers of Soybean Aphids Increasing

Although we have already issued an early warning about soybean aphids in the *Bulletin* ("Soybean Aphids on Seedling Soybeans," issue no. 11, June 6, 2003), it's important to keep you updated regarding the status of their populations. It seems that the numbers of soybean aphids are increasing in northern Illinois. Several people contacted us to report what they had found. Following are the highlights from those reports.

Joe Terando, a certified crop specialist with ConServ FS, found an average of 18 to 20 soybean aphids per plant on unifoliate-stage soybeans in Lake County on June 13. At that time, other fields in the area had spotty infestations, with as many as 20 aphids per plant. Joe also noted a relative absence of natural enemies (e.g., lady beetles). Steve Doench, agronomist with Pioneer Hi-Bred International, also found soybean aphids on V1-stage plants in a soybean seed field in Henderson County on June 13. The density of the aphids was only about one to two per leaflet. The field was near a wooded area that might include buckthorn, the overwintering host of soybean aphids.

Following are thumbnail reports of soybean aphids from other midwestern states:

- Iowa—Marlin Rice, extension entomologist at Iowa State University, reported that soybean aphids were found on V1-stage soybeans in a field in northeastern Iowa on June 5.
- Michigan—Chris DiFonzo, extension entomologist at Michigan State University, reported soybean aphids were found on V0-stage soybeans on the MSU campus on June 3. The numbers at that time were low.

- Minnesota—University of Minnesota entomologists found a few soybean aphids on soybean plants near the campus on June 2.

The real concern for soybean aphids will not occur until later this summer, when soybeans begin to flower. However, early awareness of this potentially threatening pest is important. People involved with soybean production throughout the northern half of Illinois should begin scouting now and record the activity of soybean aphid populations in individual fields. From one week to the next, you should be able to determine whether densities are increasing or decreasing and the rate of change.

Action thresholds for soybean aphids vary somewhat throughout the Midwest. The threshold of concern in Illinois is 25 soybean aphids per leaflet. However, treating too early can create more problems than it would solve. Trials conducted in other states show clearly that soybean infestations resurge in treated fields because the insecticide killed all of the natural enemies. The reproductive capacity of aphids is remarkable, so their numbers can increase quickly in the absence of natural enemies. So, while keeping track of the population dynamics of soybean aphids, don't overreact. Remember, the critical stages of soybean growth are late-V through early-R.

For more information about soybean aphids (description, life cycle, symptoms of plant damage, monitoring, management), refer to National Soybean Research Laboratory Fact Sheet #4, which can be found on the Web at [http://www.ipm.uiuc.edu/fieldcrops/insects/soybean\\_aphids/nsrl\\_4.pdf](http://www.ipm.uiuc.edu/fieldcrops/insects/soybean_aphids/nsrl_4.pdf). For a list of resources regarding soybean aphids, go to [http://www.ipm.uiuc.edu/fieldcrops/insects/soybean\\_aphids/index.html](http://www.ipm.uiuc.edu/fieldcrops/insects/soybean_aphids/index.html).—*Kevin Steffey*

---

### European Corn Borer Larvae Present

Several reports have been received this week indicating that European

corn borer hatch is under way. Reports included observations of heavy moth flights and feeding in cornfields by both first and second instars. Dennis Dixon, Hartung Brothers Inc., believes the first corn borers have hatched in the fields around Havana; and Mike Roegge, unit educator in crop systems, Adams/Brown counties, found pinhole feeding and first and second instars in a plot he was scouting. Kevin Black, Growmark, reported first and second instars, fresh egg masses, and moths in both Randolph and White counties last week. A 50% to 60% infestation was reported by Randy McElroy in an April-planted field in Mt. Erie. Egg masses and first, second, and even a couple of third instars were found.

Survivorship of corn borer larvae during mating, egg laying, and early larval development is very dependent on weather. Both drought and excess moisture affect early larvae survival. Table 1 presents the effects of drought stress and excess moisture on the survivorship of first-generation larvae on a susceptible corn hybrid. In this study, 2 days after hatch, excessive

moisture caused 67.5% mortality, whereas drought stress caused only 21.5%. Six days after hatch, drought stress caused 56.7% mortality, and moisture inundation caused 87.5%.

Questions remain on how corn borer populations have been affected by the recent storms and rain; as moth flights continue, it's important to scout for larvae, especially if corn is less than 15 to 18 inches tall. Detailed information on scouting for European corn borers was included in issue no. 11 (June 6, 2003) of the *Bulletin* (<http://www.ag.uiuc.edu/cespubs/pest/articles/200311e.html>). Also included was the management worksheet for first-generation corn borer and the insecticides labeled for use on European corn borer. As always, continue to report any findings and stay tuned for future updates.—*Kelly Cook*

### Watch for Increases in Densities of Potato Leafhoppers

Although potato leafhoppers have been present in alfalfa fields for

weeks, their numbers thus far have not generated much concern. Jim Morrison, University of Illinois Extension crop systems educator in Rockford, found an average of 0.2 and 0.25 leafhopper per sweep in Stephenson County fields of 6-inch and 12-inch alfalfa, respectively, on June 17. These numbers are relatively low. However, as wet weather subsides and more typical hot, dry weather prevails, densities of potato leafhoppers could increase rather quickly. Although leafhoppers do not have the reproductive capacity of aphids, they can complete a generation in about 20 days, depending on temperatures. Potato leafhoppers complete several generations in a year in Illinois, and when generations begin to overlap, densities can double in size in about 8.5 days.

In issue no. 9 (May 23, 2003) of the *Bulletin*, Kelly Cook included an article about potato leafhoppers and discussed their appearance, symptoms of injury they cause to alfalfa, monitoring guidelines, and static thresholds. If you are interested in more dynamic thresholds, use the ones developed by entomologists at Iowa State University, who have indicated that economic thresholds need not depend on plant height. Table 2 provides some economic thresholds for your consideration based on crop value, control costs, and leafhopper densities. In general, these thresholds are less conservative than those (based on plant height) mentioned previously for shorter plants and more conservative for taller stands (12 inches or more). Refer to the aforementioned article for insecticides suggested for leafhopper control in alfalfa and the preharvest intervals for all products.—*Kevin Steffey*

**Table 1. Average number of larvae per plant and cumulative percentage mortality for first-generation European corn borer caused by drought stress and moisture inundation in Iowa (W.B. Showers, from *European Corn Borer: Ecology and Management*, Iowa State University).**

Observation days after hatch <sup>a</sup>	Drought stress		Moisture inundation	
	Number larvae/plant	Percent larval mortality/plant	Number larvae/plant	Percent larval mortality/plant
0	20.0	0	20.0	0
2	15.7	21.5	6.5	67.5
4	9.0	55.0	6.5	67.5
6	8.7	56.7	2.5	87.5
8	5.1	74.6	2.5	87.5
12	4.25	78.8	1.25	93.8
14	3.5	82.4	1.25	93.8
17	2.5	87.6	1.25	93.8
20	1.8	91.1	0.8	96.0
22	0.9	95.6	0.5	97.5
24	0.6	97.2	0.45	97.8

<sup>a</sup>All leaves of 20 corn plants examined/observation.

**Table 2. Economic thresholds for potato leafhoppers (numbers per sweep) at different crop values and control costs (from Iowa State University).**

Crop value (\$ per ton)	Insecticide cost of \$6 per acre	Insecticide cost of \$8 per acre	Insecticide cost of \$10 per acre
\$50	1.3	1.5	1.8
\$75	1.2	1.1	1.3
\$100	0.8	0.9	1.1
\$125	0.7	0.8	0.9

### Survey of Stem-Boring Insects in Weeds

Insect-weed interactions were discussed earlier this spring in the *Bulletin* in "Insect-Weed Interactions in 2002" by Christy Sprague, Matt Montgomery, and Aaron Hager (<http://>

www.ag.uiuc.edu/cespubs/pest/articles/200304h.html). Last year, herbicide performance was questioned in several areas around the state. In some instances, after applications of glyphosate, the tops of weeds appeared to be killed, but lower portions were not. New growth appeared from the lower part of the stem, allowing the weed to survive. However, these control failures had little to do with herbicide resistance. The failure of the herbicide to work effectively was due, at least to some extent, to the presence of stem-boring insects that appeared to reduce the translocation of the herbicide throughout the plant.

In an effort to better understand this phenomenon, a survey is being conducted to determine the distribution and occurrence of these insect-weed interactions in Illinois. This project focuses on the identification and frequency of insects in fields where a herbicide application (glyphosate) failed to control weeds such as ragweed, common lambsquarter, cocklebur, marehail, and common waterhemp. Please report any instances of herbicide performance failure that may be associated with insect feeding to Kelly Cook (333-6652, kcook8@uiuc.edu) or Dawn Nordby (244-4424, dnordby@uiuc.edu) for follow-up sampling.—*Kelly Cook and Dawn Nordby*

## WEEDS

### Checklist for Postemergence Herbicide Applications in Soybeans

With postemergence herbicide applications in soybeans in full force throughout many parts of the state, a few things need to be considered before making these applications.

#### Clean Application Equipment

In many cases, equipment that is going to be used for spraying postemergence soybean herbicides has just been used in spraying a postemergence corn herbicide. When making this transition be-

tween corn and soybeans, make sure that the application equipment is thoroughly cleaned. Several corn herbicides can leave residues in equipment that may be brought back into solution once the spray tank is filled. These residues can cause damage to soybeans. Labels of many postemergence corn herbicides provide techniques for cleaning application equipment to ensure that these residues aren't left in the spray tank. Remember to thoroughly clean the spray boom, nozzles, and screens as well.

#### Apply the Appropriate Rate

With the varying sizes in weed growth in relation to soybeans, it is important to apply the appropriate herbicide rate for maximum weed control. This is particularly important in fields that did not receive a burndown herbicide application or where preplant tillage did not fully control the initial weed growth (i.e., common lambsquarters). Weeds in these fields are going to have more growth and be larger and will need higher application rates for effective control. So make sure to adjust the application rate according to the maximum weed size in the field.

#### Select the Proper Additive

The selection of herbicide additives is often specified on the respective product label, but many postemergence soybean herbicides allow the use of a nonionic surfactant (NIS), a crop oil concentrate (COC), or a methylated seed oil (MSO), with or without a nitrogen fertilizer. For many products, NIS may be the preferred additive, but COC may be used under very dry conditions to enhance weed control. Remember, when using a COC or MSO instead of an NIS, there is an increased chance for crop-injury potential for several postemergence soybean herbicides.—*Christy Sprague and Aaron Hager*

#### Weeds in Wheat at Harvest

Several weeds, such as common lambsquarters and ragweeds, can interfere with wheat harvest. With wheat nearing

maturity in several parts of the state, some producers may want to consider applying a preharvest herbicide treatment to control weeds that could make harvesting operations difficult. Only a few herbicides are cleared as harvest aids for wheat, including Clarity, glyphosate, and some formulations of 2,4-D. Applying these herbicides to maturing wheat fields often requires aerial application, and drift of any of these products out of the target area can cause serious injury to susceptible plants (crops, ornamentals, gardens, etc.). If you are planning to double-crop soybeans after wheat harvest, be sure to follow herbicide label precautions.

#### 2,4-D Formulations

Some 2,4-D labels allow for preharvest treatments in wheat after the wheat is in the hard dough stage. Few label specifications are given regarding using treated wheat for seed, but it's probably wise to conduct a germination test before planting seed from fields where 2,4-D was used as a harvest aid. Ester formulations are generally more active on weeds than amines, but esters can volatilize more, especially when temperatures are over 85°F. Use of amine formulations in wheat increases the preplant interval for double-cropped soybeans. The interval after 2,4-D application is 7 days for 1 pint of ester, 14 days for 1 pint of amine, and 30 days for 2 pints of amine or ester formulations.

#### Glyphosate

Several formulations of glyphosate can be used after wheat is in the hard dough stage (30% moisture or less) and at least 7 days before harvest. Application rates depend on the formulation used. Do not apply to wheat grown for seed because these applications can reduce germination and/or vigor. There is no preplant delay for soybeans if glyphosate is used as a preharvest treatment in wheat.

#### Clarity

Clarity (dicamba) can be used as a preharvest treatment at 8 fluid ounces per acre once wheat is in the hard dough stage and the green color is gone from

the nodes (joints) of the stem. Apply at least 7 days prior to harvest. Do not use preharvest-treated wheat for seed unless a germination test is performed on the seed, with an acceptable result of 95% germination or better. Clarity may be tank-mixed with 2,4-D (Weedmaster) or certain glyphosate formulations. Following a Clarity application up to 8 fluid ounces, a minimum accumulation of 1 inch of precipitation and a waiting interval of 14 days must occur before planting soybean.—*Christy Sprague and Aaron Hager*

**Herbicides for Postemergence Use in Sorghum**

Delayed planting caused by repetitive precipitation events (frequent rains)

has prompted some producers in the southern region of Illinois to switch from corn or soybean to sorghum. Several herbicides can be used for postemergence weed control in sorghum. These products are listed in Table 3. Some additional points to consider include:

1. Consult the respective product label for rate and spray additive information.
2. All products or tank mixes containing atrazine must be applied before the crop exceeds 12 inches in height.
3. Pay attention to crop rotation intervals, especially if using a post-emergence herbicide with significant soil persistence.

4. If you intend to feed or pasture treated grain sorghum, consult the product label for feeding, haying, or grazing restrictions.—*Aaron Hager and Christy Sprague*

**CROP DEVELOPMENT**

**Late Planting and Crop Watching 2003**

The latest report has Illinois corn planting almost complete but with some continuing delays in getting the soybean crop completely planted in southern Illinois. Now that the stress of getting the seed planted and fertilizer and herbicide applied is a memory for many, most people realize that whatever happens with the crop

**Table 3. Herbicides for Postemergence Applications in Sorghum**

Herbicide	Apply to grain sorghum	Apply to forage sorghum	Comments
Aim EW	Yes	No	Apply before weeds exceed 4" in height and through the 6-leaf growth stage of sorghum. Use drop nozzles when applications are made to sorghum grown for seed.
Atrazine	Yes	Yes	Apply before weeds exceed 1.5" in height and sorghum exceeds 12" in height
Banvel or Clarity	Yes	Yes	Apply up to 8 fl oz after sorghum is in the spike stage but before sorghum is 15" in height. Use drop nozzles if sorghum is taller than 8". Do not apply to sorghum grown for seed production.
Basagran	Yes	Yes	Apply no more than 2 pt per acre per season. Do not apply to sorghum that is heading or blooming.
Buctril	Yes	Yes	Apply after sorghum has reached the 3- to 4-leaf stage but before the preboot stage (growth stage 4).
Buctril + atrazine	Yes	Yes	Apply after sorghum has reached the 3- to 4-leaf stage but before the preboot stage (growth stage 4) or 12" in height.
Guardman Max, G-Max Lite	Yes	No	Apply to sorghum up to 12" in height that has been previously treated with a safener.
Laddok S-12	Yes	Yes	Apply to sorghum up to 12" in height. Do not apply to sorghum that is heading out or blooming.
Marksman	Yes	Yes <sup>a</sup>	For best results, apply when sorghum has 2 to 5 leaves. Do not apply to sorghum grown for seed production.
Outlook	Yes	No	Will not control emerged weeds. Apply to sorghum up to 12" in height that has been previously treated with a safener.
Permit	Yes	No	Can be applied from the 2-leaf through lay-by stage (before grain head emergence).
Prowl	Yes	No	Will not control emerged weeds. Apply from the 4" growth stage to as late as the last cultivation (lay-by). For best results, incorporate Prowl as soon as possible after application.
Shotgun	Yes	No	Apply to sorghum from spike to the 5-leaf stage, but before the crop exceeds 12" in height.
Treflan	Yes	No	Will not control emerged weeds. Apply when grain sorghum is 8 to 24" in height. Treflan must be mechanically incorporated within 24 hr after application.
Yukon	Yes	No	Apply when sorghum is between the 2-leaf stage and 15" in height. Use drop nozzles if sorghum is taller than 8". Do not apply to sorghum grown for seed production.
2,4-D	Yes	Yes??	Sorghum is most tolerant when it is 5 to 10" in height, but even then injury can occur. If sorghum is 8" or taller, use drop nozzles to keep spray off foliage.

<sup>a</sup>Consult the label for specific grazing and feeding restrictions.

through the rest of the season is beyond human control; except for an occasional fungicide or herbicide application, most producers will visit fields only to see how things are going. For some, this will mean relaxing as the weather unfolds. Others will look for new things to worry about. They probably won't be disappointed.

The first concern is with those who still don't have all of their crops planted. The "prevented planting" date is upon us, so those with crop insurance might elect to take that option. Those without insurance who need to plant corn because of herbicides applied are in the most precarious position; we expect corn planted past the middle of June to yield about half what a timely planted corn crop would yield, though extra-good weather (read "wet almost all of the time") from planting through the season would reduce such loss, and stretches of dry weather lasting weeks would likely increase the loss. Grain sorghum might be a slightly better option for late planting in southern Illinois, but it is not a "miracle crop"—it too will suffer from lack of water, and even early hybrids will be seriously limited by cool weather in September.

Late-planted soybean, including double-cropped soybean after wheat harvest, is one crop that still provides some hope in areas where it has rained 12 to 15 inches since May 1. In many areas, soil moisture is still excessive, with standing water in many fields. This will dry up slowly, especially where wheat is standing; as the wheat crop matures, it no longer takes up much water, and it reduces air movement over the soil, keeping soil wetter. This will bring a dilemma: either harvest when wet and deal with tracks, or wait until it's dry and face possible water shortage for emergence. We think the latter choice makes sense, especially if full-crop soybeans can be planted as we wait for wheat fields to dry. If it stops raining and dries out after planting, all of the late-planted crop will suffer, but a "muddled-in" crop will suffer more.

The conventional advice for planting soybean late is to use narrow rows and to increase seeding rates. Wide soybean rows are rare in many places, and no one should use wide rows for planting after early June. In light of lowered yield expectations, though, raising seeding rates should be done cautiously, especially if all of the seed needs to be purchased. We think that soybean planted after mid-June in rows less than 20 inches apart can usually maximize yield at populations of about four or five plants per square foot, or five to six plants per foot of row in 15-inch rows and about three plants per foot of row in drilled rows. This will take seeding rates of about 200,000 to 250,000 per acre if emergence is good. It might pay to consider seed treatment. And depending on the seed source, when it was tested, cold or accelerated aging germination when it was tested (low "stress" tests often mean declining vigor), and how the seed has been stored, it might also pay to run a warm germination test on the seed to make sure it still has germination as high as the tag indicates. Last year was a relatively good year for soybean seed production, but we only get one chance to establish late-planted soybean, and we should take all of the precautions that make sense.

For those ready to watch the crop grow, one concern has been the lower growing degree-day (GDD) accumulations that we have experienced this year. From May 1 to mid-June, accumulations were below average everywhere in the state, by an average of about 150 GDDs. Even our temperatures in the 80s this week are only average, so we are not catching up "lost" GDDs. To put this in perspective, it takes the first 2 weeks of May to accumulate 150 GDDs on average in central Illinois, but only about 1 week to accumulate that number in late June. For those able to plant early, April provided slightly more than average GDDs this year, so early-planted crops are right on schedule, if not a bit ahead.

It will be better for crops, in fact, if we did not get the high temperatures that

it would take to gain back the GDD shortfall we have accumulated so far. Average GDD accumulation in July is about 25 per day, and because daytime temperatures in July average close to the 86° cutoff for GDDs, above-average accumulation comes mostly from high night temperatures. To gain back 5 GDDs per day in July (to total the 150 we're behind), minimum (night) temperatures would have to be almost 10° above average. Corn responds negatively to increases in night temperature, so catching up on GDDs in midsummer would cause much more harm than good. Of course, as the crop moves toward maturity in September, 150 GDDs again becomes 2 weeks' worth, so we can expect somewhat later maturity. If the crop is able to fill grain under those cooler conditions, though, later maturity will be more positive than negative. In fact, above-average July rainfall and below-average August temperatures are a formula for success for corn yields.

Soybean's response to summer weather is somewhat different from corn's, though on average good corn yields and good soybean yields tend to go together, with both tied closely to rainfall. Soybean plants are still small in most fields, reflecting the delay in planting and the cool weather after planting. The crop is finally starting to grow this week, but most fields are only at stage V1 or V2 (one or two trifoliolate leaves expanded). This is less than we would like as we reach the longest day of the year (this Saturday, June 21), but we expect growth to pick up rapidly now that it has warmed up. In our planting date experiment here at Urbana, soybean planted April 1 is about a foot tall, but leaves are small due to the low temperatures, so the canopy has not filled rapidly. Unlike last year, we are not likely to see any pre-June 21 flowering this year. Soybean plants flower when the length of the night reaches a certain minimum, so they can flower before longest day, when night length is decreasing, but only if they are large enough, at about stage V3. As it is,

look for first flowers about the second week of July for fields planted in May.

We like to see soybean plants form a complete canopy by the time of the first flower in order to fully utilize the sunlight as more flowers and pods form. That probably won't happen in many fields this year, but if July rainfall is average, the plants should continue to grow rapidly and lack of canopy should not be a problem, except perhaps in fields planted very late or in wide rows. Compared to corn, soybean plants respond positively to warmer night temperatures, though this is probably more important during seed filling than in July. Starch accumulates in soybean leaves during the day, and we think that higher night temperatures help move this starch out, thus "clearing the deck" for higher photosynthetic rates the next day.

Soybean yield is largely made in August, during the time seeds are filling. If temperatures are moderate and rainfall and sunlight are adequate, soybeans can respond surprisingly well with higher yields, even if conditions during the first half of the season are not very favorable. Let's keep that in mind as we watch the crops grow during another Illinois season.

A final note about wheat: After the crop came out of the winter and early spring in good shape, wet weather in the main growing area has led to soggy fields and, in some fields, high levels of *Fusarium* head scab. Wheat in central and northern Illinois escaped the rain a little better at flowering time, so it has less scab and appears to have good yield potential. Where scab is a problem, especially if wheat has to stand past maturity as fields dry out, we expect problems in both yield and grain quality. Watch the grain carefully as you harvest, and set the combine to blow out most of the "tombstones"—kernels that did not develop due to scab infection. If larger kernels have scab with pinkish discoloration, levels of vomitoxin/DON will be a concern. This is disheartening, but perhaps we can work up some opti-

mism for the double-cropped soybean to follow in many of these fields.—

*Emerson D. 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

Closer-to-normal June temperatures arrived over the weekend, and the corn crop has certainly responded throughout the region. The main activities during the week included finishing corn postemergence herbicide application and cultivating corn. Soybean postemergence herbicide application is also in full swing. Wheat is beginning to turn and oats are beginning to head.

Few reports of insect problems have been made throughout the region; however, European corn borer moths have become more visible over the past week. Jim Morrison, crop systems Extension educator, reports several Stephenson County alfalfa fields with potato leafhopper (PLH) counts as follows: 6-inch alfalfa with 0.2 PLH/sweep and 12-inch alfalfa with 0.25 PLH/sweep, which is below treatment threshold at this time. Jim Donnelly, Ag View FS, reported grape colaspis root feeding (five larvae/plant) in a Bureau County field. Also, Jim reported finding rootworm larvae in several cornfields, with numbers ranging from one to five larvae per plant.

### West-Central Illinois

Late last week, a line of storms split the west-central region, with areas from Macomb to the south receiving anywhere from 1 to 3 inches of rainfall. To the north of Macomb, less rainfall was received (0.2 to 0.6 in.), and producers were not kept out of the field for very long. Planting is for the most part done in nearly all portions of the region. The main activities this past week included postemergence application of herbicides on soybeans, sidedressing nitrogen on corn, mowing roadsides, and completing harvesting of the first cutting of grass hay. Irrigators in Henderson County have begun fertigation of corn.

Most of the corn is V5 to V10, with some of the earliest-planted fields as far along as V13. Growth of early-planted corn has finally kicked into high gear. Buggy-whipped corn was a common sight in a number of fields earlier this spring and can be mainly attributed to cool weather. As early-planted corn begins to grow out of this condition, you can see many scattered cornfields with upper leaves that are lighter and more translucent in color. European corn borer larvae in the first and second instar have been found in a number of fields, and whorl feeding is evident in many areas. More reports of injury due to grape colaspis and true white grub feeding in corn have also been received. Soybeans vary in de-

U of I Extension Newsletter Service  
University of Illinois  
at Urbana-Champaign  
528 Bevier Hall, MC-184  
905 S. Goodwin Avenue  
Urbana, IL 61801

velopment, from emerging to V4, and soybean cyst nematodes can easily be found feeding on roots of soybeans.

Wheat scab is evident in the area and some other diseases, including Septoria leaf blotch/spot, appear as if they might impact yields.

The Western Illinois University Department of Agriculture, in cooperation with University of Illinois Extension, is sponsoring a free Herbicide Field Plot Tour on Thursday, June 26, at 1:00 p.m. at the WIU Agronomy Field Laboratory (immediately north of the WIU Golf Course in Macomb). Fourteen corn experiments and seven soybean experiments will be shown in no-till, strip-till, and mulch-till. Other topics include PPO-resistant waterhemp, triazine-resistant lambsquarters, glyphosate-resistant marehail, strategies to protect the effectiveness of glyphosate, giant ragweed biology and control, pokeweed control, and chickweed biology and control.

No registration is required; for more information, call Sean Evans (309-836-3366) or Dr. Gordon Roskamp (309-298-1569).

---

### Contributing Authors

**Dale Baird** (dlbaird@uiuc.edu), Extension Crop Systems, (815)397-7714

**Kelly Cook** (kcook8@uiuc.edu), Extension Entomology, (217)333-6651

**Aaron Hager** (hager@uiuc.edu), Extension Weed Science, (217)333-4424

**Jim Morrison** (morrison@uiuc.edu), Extension Crop Systems, (815)397-7714

**Emerson Nafziger** (ednaf@uiuc.edu), Crop Sciences, (217)333-4424

**Dawn Nordby** (dnordby@uiuc.edu), Extension Weed Science, (217)333-4424

**Ellen Phillips** (ephillips@uiuc.edu), Extension Crop Systems, (708)352-0109

**Christy Sprague** (csprague@uiuc.edu), Extension Weed Science, (217)333-4424

**Kevin Steffey** (ksteffey@uiuc.edu), Extension Entomology, (217)333-6652



UNIVERSITY OF ILLINOIS  
EXTENSION

Helping You Put Knowledge to Work

University of Illinois  
U.S. Department of Agriculture  
Local Extension Councils Cooperating

University of Illinois Extension provides equal opportunities in programs and employment.