INSECTS

Insect Issues During This Period of Slow Crop Growth and Development

Off to our slowest crop-growing season in years, the focus has been, justifiably, primarily on crop growth and development in cool, wet conditions, with less of a focus on pest issues. According to the most recent report from the Illinois Department of Agriculture (Illinois Weather & Crops, May 27), even though 87% of corn has been planted (similar to percentages at similar times in 2003 and 1999, but ahead of 2002 [71%]), only 62% has emerged. The 5-year average of percentage corn emergence at equivalent times of year is 90%. So far as we know, insects have been responsible for only a small percentage of the slower-than-average emergence of corn. And soybean planting and emergence are even farther behind—39% planted (lower than any percentage planted over the past 10 years [except 2002, 20%]) and only 4% emerged (43% is the 5-year average). We have written several articles about the overall effect of late planting and slow growth of crops on the potential for insect problems, so I won’t belabor that issue. Rather, following is a snapshot of insect-related issues thus far, with more in-depth articles to be provided in the weeks to come.

Black cutworm. We have received several reports of black cutworm activity in cornfields, most of which have originated from western Illinois counties. Several people have reported good protection against cutworms by Cruiser and Poncho seed treatments, apparently providing excellent control of the younger instars. However, some fields of corn have been sprayed with insecticides to prevent additional black cutworm injury. Knowledgeable sources, though, have indicated that some insecticide applications have been made unnecessarily. Obviously, deciding to treat a cornfield with an insecticide to control black cutworms is a judgment call, and the high price for corn justifies some reduction in the economic thresholds (refer to “First Reports of Black Cutworm Injury” in issue No. 9, May 23, 2008), but reducing thresholds, even justifiably, still has limits. We are aware of at least one situation in which 0.25% or less cutting by black cutworms was observed, but the field was sprayed anyway. Spending money to spray a cornfield simply because the price for corn is high makes no sense if the return on investment is $0. Early evidence of leaf feeding or slight cutting activity does not guarantee that an economic level of damage will occur. So we encourage people to be patient and use good judgment when making decisions to control insects, including black cutworms.

Other creatures in the soil. While scouting cornfields for black cutworms or just keeping an eye on emergence, people have encountered a variety of other creatures in the soil. Thus far we have received few reports of injury caused by grape colaspis, white grubs, or wireworms, to name a few, but continued slow growth will expose corn seedlings to these insect pests into June. Remember, insects are developing slowly, too.

Given the broad array of problems in cornfields at the moment, it is possible to find nonpest creatures and incorrectly blame them for poor emergence or slow development. The entomologists at Purdue University wrote a nice article with some good photos about non-insects (e.g., millipedes, juvenile earthworms) in issue No. 8, May 23, 2008, of their Pest & Crop newsletter.
We, too, encourage accurate identification of soil-inhabiting invertebrates so that money for insecticides is not spent unnecessarily.

And keep your eyes open for slugs. Ron Hammond, extension/research entomologist at Ohio State University, wrote a “Slug Update” in issue 2008-15 (May 27–June 2, 2008) for the Crop Observation and Recommendation Newsletter, indicating that reports of slug activity have increased in Ohio. Given the current weather conditions, don’t be surprised to encounter slugs feeding on corn or soybean seedlings.

European corn borer. Several people have noted emergence of European corn borer adults, marking the time of year when the first generation will begin mating and laying eggs. Obviously, the females will be hard-pressed to find cornfields where first-generation larvae will survive. Recall that European corn borer larvae do not survive very well on corn in the 6th-leaf stage or smaller (i.e., with higher concentrations of DIMBOA, a compound that deters feeding and establishment of small corn borer larvae). However, if the cornfields in a given area have differential heights, focus your attention on the tallest fields, especially those planted to non-Bt corn hybrids. Also, keep your eye on the non-Bt corn refuges for harborage of European corn borers.

Bean leaf beetle. Like the difficulty of first-generation European corn borers establishing on small corn plants, bean leaf beetles will have a tough time finding early emerging soybean fields where they can deposit eggs to initiate the first generation. The bean leaf beetles being observed now in alfalfa and clover fields and in noncrop areas are the adults that overwintered and have emerged from “hibernation.” They seek soybean fields in which to feed, mate, and lay eggs, so it is likely that the first generation will be diminished. On the other hand, it is very important for the growers who were able to plant soybeans relatively early to be alert for bean leaf beetles.

Alfalfa weevil. Alfalfa weevil larvae have caused some economically threatening damage to alfalfa in several areas of the state, although there are indications that a fungal pathogen, Zoophthora phytonomi, may be suppressing alfalfa weevil populations in some fields. Cool, wet weather is amenable for the development of epizootics of this pathogen, and threatening levels of alfalfa weevil larvae can decline very rapidly. As you scout alfalfa fields, be on the alert for “not normally colored” and semi-moribund alfalfa weevil larvae. These larvae could be infected with Z. phytonomi; if they are, they will quickly die and turn brown. If a high percentage of larvae are infected, economic damage probably will be averted.

Even though the growing season has been fairly frustrating thus far, don’t let impatience trigger haste in your insect control decisions. Assess all of the factors interacting within a field to make an informed plan. —Kevin Steffey

PLANT DISEASES

Loose Smut of Wheat Observed in Illinois

Wheat heads affected by loose smut, caused by the fungus Ustilago tritici, have been observed in southern and central Illinois. Loose smut of wheat is observed as masses of black spores in place of the glumes and kernels on the head. The fungus survives on the embryo of wheat seeds and grows inside the plant after seed germination. Spores from affected heads can be blown onto nonaffected heads and cause infection during wheat flowering.

No “in-season” control exists for this disease, as foliar fungicides are not effective in controlling loose smut. Control occurs prior to planting. Varieties with good resistance are available, but the best control is to plant disease-free seed. If loose smut is observed in your field, do not keep the seed for planting. Some systemic seed treatments can help control loose smut as well, but it is always best to start with disease-free seed. —Carl A. Bradley

When Is the “Last Day” to Plant?

Heavy rains fell in parts of Illinois again this week, especially in the southern areas, which have received more than 20 inches of rainfall since March 1. Growing degree days continue to accumulate very slowly, and we will end May with monthly totals ranging from about 300 GDD in the north to 400 in the south, or about two-thirds of normal. As of May 25, corn was assessed at 87% planted by May 25 and soybean at 39% planted. These numbers include the corn acreage that will need to be replanted, as I discussed last week here. The 2008 spring planting season continues to worsen as we approach the end of May, though there are some places in Illinois where most of the fields are planted. Even there, crop growth is much below normal, and so most fields look late-planted, even if they were planted on time.

Soybean planting is much farther along in northern than in southern Illinois, but heavy rainfall following planting will pose problems for soybean just as it has for corn. Soybean seed quality is generally marginal this year, and getting seed for replanting might be difficult. Even top-quality soybean seed is inferior to corn seed in its ability to emerge, so we would expect very poor soybean emergence in fields where soils are very wet and cool after planting. Our replant data are not great for soybean, but we know that the 100,000 plants per acre that will normally produce a full yield when the crop is planted early will often not be enough for full yields when the crop is planted late. This is because late-planted soybean plants often are smaller when flowering begins, and they often are shorter and have less leaf area as they begin seed-filling. As an estimate, for each week that soybean is planted after May 31, the established population ought to be increased by 15 to 20 thousand plants per acre in order to maintain yield potential for the date on which the crop
is planted. Any planting after June 1 should also be in rows no more than 15 inches apart.

A recurring question as we try to finish planting in 2008 is how late corn and soybean can be planted and still “produce a crop.” I normally take this to be the planting date for which we can expect a crop to yield half its maximum expected yield. It’s always a little dangerous to project yields beyond the last planting date in our studies, but using the response curves generated from our corn planting date data shows that we can expect 50% of the maximum yield when planting is done around June 15 to 20 in Illinois. We would expect actual yields of corn planted on June 15 to vary greatly depending on the weather the rest of the season. For example, one study planted at Urbana in early July 2007 yielded more than 170 bushels per acre. In another year, such a planting might well not be worth harvesting.

Our data from planting date studies on soybean aren’t as good, but here the double-crop experience is helpful, at least in southern Illinois. I would estimate that soybean reaches its 50% of maximum yield expectation when planted around June 25 to 30 in southern Illinois, and perhaps a week earlier than this in the northern half of the state. Like with corn, the prospects for late-planted soybean are highly uncertain, with similar probabilities of having very good and very poor yields. It is clear that potential yields of both corn and soybean are decreased considerably by planting as late as mid-June, and that the expected yields of both crops are decelerating quickly by then, with losses approaching 3% or 4% per day of delay, as cumulative loss approaches 50%.

Given that expected yields of both crops drop rapidly as planting is delayed into June, the advantage that corn yield and income have over those of soybean is relatively slow to diminish. This means that switching from corn to soybean might not be highly profitable, even though our experience with double-cropping soybean after wheat harvest makes us more comfortable with late-planted soybeans.

But just because planting later is the norm for grain sorghum does not mean that we should rush into planting a lot of it on acres that were intended for corn or soybean. If it remains cool through the early part of the summer or if temperatures drop earlier than normal in the fall, grain sorghum’s sensitivity to low temperatures may mean low yields relative to those of late-planted corn or soybean. Grain sorghum does have more tolerance to periods of dry weather than corn or soybean, but this does not mean that it will produce high yields no matter what. In fact, the biggest problem with grain sorghum is that its yield is often much less than that of corn; the rainfall and warm temperatures that it takes to produce high grain sorghum yields will also improve corn yields, even if the corn crop is planted late.

Hence grain sorghum does not reduce weather-related risks by very much, and its lower yield potential means that while it may be a little “safer” than late-planted corn, the returns will likely be limited. In the outstanding year of 2004 when corn yields averaged 180 in Illinois, grain sorghum yields averaged 109 bushels per acre. Both were the highest on record. This is why we suggest that grain sorghum be considered first on soils where expected corn yield is less than 100 bushels per acre. That 100 bushels does not increase very fast even when planting is delayed.—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 Southwest districts [except Marion, Clay, Richland, and Lawrence counties], McLean, DeWitt, and Macon counties from the Central district)
- South (Southwest and Southeast districts, and Marion, Clay, Richland, and Lawrence counties from the East Southeast district)

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

East-Central Illinois

Soybeans that have been in the ground for over two weeks have finally started to emerge. Corn is starting to visibly grow again. Some wheat is being sprayed with fungicide. Farmers have been trying to get first cuttings of hay in between rain events. Replanting of corn has begun in the last few days in the southern part of the East-Southeast crop reporting district. Some planting of soybeans has occurred, but minimal at best. Hay harvest has also begun, but with the threat of impending rain, continuing lack of sunshine, and damp soil conditions, it is not progressing rapidly. The winter wheat crop is making good headway with little evidence of fungal disease symptoms. It is possible that some intended corn acreage...
may be shifted to an alternative crop if replanting is delayed or spoiled by continuous wet soil conditions.

Northern Illinois

Most of the northwestern region received nearly an inch of rain on May 25–26, with some areas receiving up to 3 inches. Other areas in the southeastern part of the region received about 0.3 inch of rain in the same period.

Corn planting is nearly complete, and soybean planting is over 70% complete. Rotary hoeing of corn was more common last week than it has been for a number of years. Some of the slow corn emergence may have been influenced more by slow accumulation of heat units than by soil crusting. Other activities last week included preemergence herbicide application and soybean planting. Bill Lindenmier, crop systems extension educator in Ogle County, has observed corn planted the week of May 5 more likely to exhibit uneven population stands compared to corn planted prior to or after (if emerged) the week of May 5.

Alfalfa harvest has begun, but drier and warmer conditions are needed for it to continue. There have been no reports of wheat diseases.

Southern Illinois

An additional 2.3 inches of rain over the Memorial Day weekend has brought the region’s rainfall totals to 24 inches since March 1. Needless to say, no further progress has been made in planting or hay harvesting in the past week. Weather forecasts predict more rain this weekend; if it comes, any potential corn planting and/or replanting is likely to bump up against the June 5 crop insurance deadline.

Wheat continues to look good despite the wet conditions. Some lodging is occurring due to the wetness.

West-Central Illinois

Portions of the region received up to 4 inches of rain over the Memorial Day weekend. Prior to storms on Saturday, farmers in the southern and southwestern parts of the region were gearing back up to plant corn and to replant cornfields struggling to emerge since they were originally planted around May 6. Other areas are completely planted and have seen fields already treated for black, sandhill, and dingy cutworm infestations.

Depending on the area, soybean planting ranges from 0% to 75% complete. Only a few places have soybeans that have emerged.

Wheat is beginning to flower in many fields. Reports of smut, powdery mildew, and a few viral infections have been noted. Many producers are making aerial applications of fungicides to prevent severe infections of scab.

First cuttings of alfalfa and grass hay are taking place. Farmers are struggling to dry these crops, and some have resorted to wet chopping and bagging as weather conditions have been unsuitable for proper dry-down.

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