Leadership Change at University of Illinois Plant Clinic

In late July, Nancy Pataky retired from the University of Illinois after many years of exceptional service as a plant pathologist, a one-time member of the Pesticide Safety Education Program (formerly known as PAT), and, during the last portion of her career, director of the Plant Clinic.

The impact of Nancy’s leadership has been impressive. In 2009 alone, the clinic received 2,159 plant samples for diagnosis and conducted 902 phytosanitary inspections. The diversity of plant samples included horticultural as well as field crops affected by diseases, insects, or, in some instances, environmental factors. Nancy also worked closely with our weed science specialists to offer correct diagnoses when off-site herbicide injury to nontarget plants was suspected. Many student interns through the years were fortunate to work with Nancy, an important mentor in their professional development. Nancy was a dedicated member of our crop sciences extension team, and she will be missed. We all wish her the very best in her retirement years.

Fortunately, Suzanne Bissonnette was able to begin serving as the new Plant Clinic director and is continuing as IPM coordinator for the Department of Crop Sciences. She began her new role on August 9 and has been busy at the Plant Clinic every day since. Once the busy summer is over, she will transition to her new office in Turner Hall.

Suzanne is familiar to many stakeholders and clients in east-central Illinois from her service as an IPM educator at the Champaign Extension Center. From time to time, she was also a speaker at the January Corn and Soybean Classics held annually throughout the state. Suzanne received both master’s and doctoral degrees in plant pathology from the University of Illinois, in 1987 and 1992. In recent years, she has served as the state Extension IPM coordinator, and she continues her role with this important program. We look forward to Suzanne’s leadership and her infectious enthusiasm in working with stakeholders and clientele throughout Illinois.—Mike Gray

No European Corn Borer Survey Planned for 2010

The corn harvest has begun in some areas of Illinois, and some may wonder about the annual European corn borer survey. For 2010, the survey will not be conducted. It has been well documented that densities of this once-prominent insect pest of corn have continued to hit historically low density levels for many successive years. The
Corn harvest has begun (Champaign County, August 25).

Data from this survey, begun in 1943, have never consistently predicted subsequent infestations of European corn borers, as the original architects envisioned. However, the survey did offer a look in the rearview mirror regarding how much yield loss could be attributed to this insect pest. It’s not unreasonable to estimate that during outbreak years, such as 1949, 1989, and 1991, European corn borers took 15% to 20% of the yield for themselves. No wonder so much time and so many resources were initially devoted to developing IPM strategies and ultimately to commercializing Bt hybrids to combat this formidable insect. We are fortunate to date that no field-level resistance by the European corn borer to Bt has been confirmed; however, insects are adaptable, and we should not take this transgenic technology for granted.—Mike Gray
Looking for that Extra Soybean Yield

Soybean harvest will happen much earlier this year than the last two. Most soybeans are somewhere in the R6 growth stage, and a few varieties of earlier maturity groups are at R7 (one mature color pod) and starting to turn and drop leaves. In a few areas, sudden death syndrome is the culprit of the early color change and leaf drop, but some of both is occurring naturally at this point. The change in soybean doesn’t in general appear to be happening as fast as in corn, so I expect most growers are getting combines ready for corn and will harvest some of that crop first.

The last USDA crop report estimated an average soybean yield of 49 bushels/acre for Illinois. In some areas this might look bullish, but in my opinion it looks on target as a whole. Fortunately, many areas of the state caught a much-needed rain at the end of last week to help fill or finish filling soybean pods. It was a rain I think many would classify as a “big-yield rain” for soybean, and I think it brought many fields to an average yield and gave many good fields the “extra” yield producers were looking for. It appears that late-August and early-September temperatures may remain very favorable for soybean plants to continue good seed fill, and we have so far been blessed with several days of clear skies and sunny conditions to keep photosynthesis operating strong.

In issue 19 (August 13), I noted that many areas were experiencing dry conditions during a spell of high temperatures. Fields and areas in fields with soybeans that were established well and grew better root systems—usually in better-drained areas—managed the heat and dry conditions better than the areas that struggled early in the year. Nonetheless, I was observing pod fill in a couple of fields throughout that stretch of hot and dry days. Through the early part of the week of August 10, plants appeared to not be filling fast, but I was not observing major pod loss. However, by the end of that week, many of the smaller pods, particularly on terminal racemes, were falling off the plants. Unfortunately, I felt I watched a lot of “extra” yield drop during that time (see photos).
The storm front that came through much of Illinois on August 15 and 16 didn’t bring as much rain to many areas as was needed, but it did bring cooler temperatures through last week that seemed to allow beans to cope better, even in the drier areas. And the higher rainfall amounts that swept much of the state last weekend seemed to be timed well for many fields to finish the pod-filling growth stages (R6).

As I pointed out in issue 19, scouting and observing the relationships among disease, insect, and agronomic practices are still important through the R6 growth stages. When scouting for diseases, be sure to correctly differentiate between sudden death syndrome and brown stem rot by splitting stems. Regarding insects, aphids remained a non-concern this year, and I’m sure nearly all areas (with the exception of double-crop soybeans) are beyond the growth stages that would warrant an insecticide. However, continue to be on the lookout for stink bugs, which could still cause loss by feeding on pods. Lastly, as you ready yourself and equipment for harvest over the next two weeks, keep safety in mind.—Vince M. Davis

Is Low Test Weight a Cause for Concern?

The 2010 Illinois corn crop continues to race to the end, with 13% of the crop listed as mature by August 22, and growing degree-day accumulations since May 1 running 250 to 300 above normal. With the present weather, the crop will dry down rapidly after it reaches black layer. Harvest is starting in a few areas.

One concern I heard expressed recently is that some early-harvested corn was coming in with test weights in the low 50s instead of the 56 or higher that we often associate with ideal weather. With the early harvest following a very warm grain-filling period in July and August this year, many people seem concerned that low test weights indicate that a lot of yield has been lost, and that other-wise things are “not as good as they could have been.”

Test weight low enough to trigger dock-age is, of course, a concern. In many cases, kernels will seem sound (unlike kernels from many fields in 2009), even where test weights are 3 or 4 pounds below the standard 56 pounds per bushel. What do low test weights mean in such a case?

First, we need to be careful to separate test weight from low kernel weight. If yields are high, then it’s possible that kernel weights are normal, even if test weights aren’t. The two are often related, in that kernels that don’t fill very fully tend also to be misshapen, so they fit together poorly; the result is low “bulk density,” which is what test weight officially measures. But these factors are not in lockstep; yields can be very high and test weights not very high. That’s because test weight is a complex measurement, including factors like slipperiness of the seedcoat, kernel shape, endosperm density, and even such things as size of the embryo.

In 2009, starch filled very slowly, and in some cases it didn’t fill to the maximum extent before freezing ended the process. That’s not likely in 2010, except perhaps in some areas where dry weather could bring an early end to grain-fill. It is possible, though, that the rapid filling in 2010 resulted in slightly lower density of starch “packing” into the endosperm (the starchy part of the kernel) than normal. That directly lowers test weight, and may in many cases result in lower kernel weights (grain yield) than would have been the case otherwise.

For the same reason, endosperm quality may not be quite as high as usual this year. This could affect usefulness as, for example, food-grade corn. On the plus side, grain will dry down well in the field, and we are not likely to see the high-temperature drying problems—stress cracks, foreign material—that we saw in 2009.

Test weight affects pressure plate readings on yield monitors, so it will be important to calibrate monitors for this year’s conditions. But instead of focusing on how much yield might have been lost, focus on the big picture: yield per acre is the product of kernel number and kernel weight, and it is not tightly linked to test weight. High yields are the only meaningful measure of the growing season, and if kernels are basically sound but test weights are several pounds below normal, we have little to complain about.—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.

East-Central Illinois

Limited corn harvest has started. The lowest moisture report has been 19%,
but around 24% is more common. Yield surveys suggest that variations between and within fields will be high and that the USDA report may have been optimistic. Ears with small amounts of Diplodia and other ear rots are relatively easy to find.

Soybeans are taking advantage of the cooler nights to improve seed and pod fill. Early-maturity varieties are starting to turn. Sudden death syndrome is present in some areas but mostly at low levels.

Northern Illinois

According to the Illinois State Water Survey WARM database, 2,416 growing degree-days have accumulated from April 20 to August 23 at Freeport and 2,318 at DeKalb. Accumulated GDD are above the 11-year average by 275 at Freeport and 173 at DeKalb. The corn crop is progressing very well, with about 70% in the dent stage, and soil moisture is adequate in most of the region.

Soybeans have podded well, and yield expectations are high. Soybean sudden death syndrome is becoming more common throughout the region but at present is generally limited to small areas within fields. Soybean aphids are present, but reports indicate low numbers.

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