“Refuge-in-the-Bag” Registration Approved by US EPA for Optimum AcreMax 1

On May 3, DuPont announced that the US Environmental Protection Agency (EPA) had approved the company’s request for a seed mixture refuge for corn rootworms when planting Optimum Acre-Max 1 Pioneer corn hybrids (seed blend of 90% Herculex Xtra [Cry 1F + Cry34/35Ab1] and 10% Herculex I [Cry 1F]). The press release indicated that this new approach will be used in some producers’ fields this year in preparation for the 2011 growing season. Farmers who elect to use Optimum Acre-Max 1 Pioneer corn hybrids will be able to reduce their corn rootworm refuge from the current structured 20% to a 10% seed mixture. According to the May 3 media alert, “In addition to the Optimum® AcreMax™ 1 product registration announced April 30, the EPA also has granted Pioneer registration for Optimum® AcreMax™ RW products, which integrate 90 percent Herculex® RW seed and 10 percent of a hybrid from the same genetic family without biotech insect protection. All seed in the bag is herbicide tolerant.” Herculex RW corn hybrids express the Cry 34/35Ab1 binary proteins.

On April 30, the US EPA Office of Pesticide Programs, Biopesticides and Pollution Prevention Division, released a 33-page Biopesticides Registration Action Document titled Optimum® AcreMax™ B.t. Corn Seed Blends. A number of quotes from the document, which may shed some additional light on this significant development, follow.

• “Given the potential benefits attendant to the blended refuge concept, EPA concludes that it is in the best interests of the public and the environment to issue the registrations for OAM 1 and OAM RW without delay for the 2010 growing season. The registration is only effective for the current growing season. Therefore, consistent with the Agency’s policy for making certain registration actions more transparent, EPA is issuing these time-limited registrations with an initial period to expire September 30, 2010, and, concurrent with their issuance, providing a 30-day public comment period on the time-limited registrations” (p. 13).

• “The data from these model simulations indicate comparative durability values of 11.3 years for the 10% blended refuge and 20.2 years for the 20% block refuge. Thus, the 10% blend was 45% less durable than the 20% block refuge currently required for single trait CRW PIPs” (p. 7).

• “Based on our current assessment, we conclude that significant acreage of a 10% seed blend with a single, non-high dose mode of action such as Cry34/35Ab1 likely increases the risk of resistance for all B.t. corn products containing Cry34/35Ab1. But, the current time-limited registration will not likely increase the risk of resistance to Cry34/35Ab1” (p. 12).
“Pioneer projects that the time-limited registrations being granted for the 2010 growing season will result in planting on only approximately 0.042% of acres of non-Red Zone geography corn acres; and only on approximately 0.077% of Red Zone geography corn acres. In the context of 90 million acres of corn planted in the United States annually, we conclude that plantings on such limited acreage will not have effects on CRW resistance development” (p. 12).

“The Red Zone is defined by Pioneer as 90 counties that have a 100% chance of corn rootworm infestation in any given year. These counties are primarily located in northeastern Illinois, northwestern Indiana and, to a lesser extent, southeastern Wisconsin and southwestern Michigan. Because of the strong selection pressure present in the Red Zone, it is considered a potential area for corn rootworm resistance to develop” (p. 4).

90 days from the date of registration: “Pioneer must provide the Agency with a copy of the grower agreement, associated stewardship documents, and written description of a system, which assures that growers will sign grower agreements and persons purchasing OAM1 corn will annually affirm that they are contractually bound to comply with requirements of the insect resistance management (IRM) program” (p. 15).

By December 1, 2010, for western corn rootworms and December 1, 2011, for northern corn rootworms: “Pioneer must implement an enhanced resistance monitoring plan for OAM1” (p. 15).

By December 1, 2010: “Pioneer must submit a detailed OAM1-specific resistance monitoring and remedial action plan, including an analysis to determine the expected field performance criteria for OAM1 products so that unexpected damage can be benchmarked” (p. 15).

“Because the refuge for corn rootworm is blended in each bag or box of OAM1 seed, no additional corn rootworm refuge is required. A refuge must be planted for corn borers. The refuge must be planted with corn hybrids that do not contain Bt technologies for the control of corn borers” (p. 16).

“External refuges must be planted within ½ mile. If perimeter or in-field strips are implemented, the strips must be at least 4 consecutive rows wide. The refuge can be protected from lepidopteran damage by use of non-Bt insecticides if the population of one or more of the target lepidopteran pests of OAM1 in the refuge exceeds economic thresholds” (p. 16).

“We expect OAM1 to have the following benefits: (1) Reduced pesticide use in the refuge. . . . (2) Significantly less complicated refuge deployment for the corn rootworm active ingredient. . . . (3) Increased grower compliance with IRM requirements for the corn rootworm active ingredient” (p. 9).

“In addition, indirect benefits of introducing Optimum® AcreMax™ 1 may include reduced energy consumption for manufacture, transport, and application of chemical insecticides; reduced waste streams arising from pesticide manufacture; reduced disposal of pesticide waste containers; and reduced residues from pesticide applications” (p. 10).

This registration opens up a new chapter in the implementation of resistance management strategies designed to delay or prevent resistance development to Bt corn hybrids. This development raises many additional questions:

- Will Pioneer’s registrations for OAM1 and OAM RW be extended to include growing seasons beyond 2010?
- Will corn growers be sufficiently interested in this seed-blend approach to IRM if 10% of the seed must serve as a refuge? Our surveys of growers at the 2010 Corn and Soybean Classics indicated that if the refuge seed comprises 6% to 10% of a bag, interest in this approach fell below 60%. (See issue 2 of the Bulletin at ipm.illinois.edu/bulletin/article.php?id=1269 for more details.)
- Will the US EPA extend registrations to other companies that allow seed mixtures to form the core of their IRM plans for Bt hybrids?
- Although producers who plant SmartStax hybrids in 2010 must implement a structured 5% refuge, will this requirement change to a seed-mixture IRM approach at the 5% level in subsequent growing seasons?
- With the likely transition to seed mixtures as the IRM foundation for corn rootworms, how much longer will the agribusiness community sustain the discovery, development, and marketing costs associated with soil insecticides?
- If corn rootworm resistance to Bt does develop at some point, what options will remain for growers to control this insect pest effectively? With crop rotation no longer an effective management option in many areas of the “Red Zone,” we could have some significant challenges to confront if the soil insecticide market were to completely “dry up.”

As I’ve indicated in earlier articles in the Bulletin, the early planting this season and favorable root establishment could help corn rootworm populations rebound from the past two seasons. Large root systems at the time of larval hatch (usually late May across central Illinois) could lower intra specific competition for larval feeding sites and result in greater densities of western corn rootworms this year. I look forward to your reports this summer regarding how well corn rootworm products are performing.—Mike Gray

Black Cutworm Spraying Under Way in Some Central and Southern Illinois Areas

Over the past week I have received a few reports of fields being sprayed for black cutworms. On May 4 a field near Sherman (Sangamon County) was treated. Black cutworm activity also has been reported in some areas of southern Illinois, including St. Clair County. Intense flights continue to be reported in some areas of the state. John Fulton, county extension director for Logan County, indicated that an intense flight occurred there on April 29. Growers are encouraged to carefully scout any cornfields that were planted late (relative to
Many postemergence herbicide labels suggest that applications be made when target weeds are small and warn of reduced effectiveness if applications are made to larger plants. Also, several postemergence herbicide labels suggest that users increase application rates or delay applications if weeds are growing under “adverse environmental conditions,” such as prolonged periods without significant precipitation (dry soil) or low air temperatures. On the other hand, high relative humidity, adequate soil moisture, and moderate to warm air temperatures all favor enhanced herbicide absorption. Remember that if conditions favor rapid herbicide absorption into weeds, they also favor it into the crop, which may result in crop injury.

Timely applications of postemergence herbicides are always preferred over delayed applications, but each growing season seems to introduce unique challenges that sometimes interfere with timeliness. The governing principle of postemergence herbicide programs is that the crop and weeds can coexist for some critical period without resulting in yield loss. Numerous research trials conducted over many years have demonstrated that if weeds are removed within this critical period, crop yield is generally not adversely affected.

The key to achieving this goal is determining when the weeds should be removed by applying the postemergence herbicide(s). Unfortunately, no one can accurately predict on which specific day after planting or emergence weeds begin to reduce yield. Weed scientists generally suggest an interval based on either weed size (in inches) or days after crop/weed emergence during which postemergence herbicides should be applied to avoid yield loss. But a problem with suggested intervals is that they are not extremely precise, and they likely vary from year to year and even field to field. For example, earlier research has reported that weed interference began to reduce corn yield as early as the 2-leaf stage and as late as the 14-leaf stage. Many weed scientists suggest applying postemergence herbicides before weeds exceed 2 to 3 inches tall. If they are allowed to remain with the crop past this size range, the risk of yield loss increases substantially.

Almost all postemergence corn herbicides have application restrictions with respect to maximum corn size (specified as height, leaf number, or sometimes both). And remember that some postemergence corn herbicides also have application timing restrictions based on minimum corn size. For example, the label for Status (diflufenzopyr + dicamba) indicates that broadcast applications should be made when corn is between 4 (V2) and 36 (V10) inches tall.—Aaron Hager

**University of Illinois Weed Science Field Research Tours**

We invite you to attend the 2010 University of Illinois Weed Science Field Day on Wednesday, June 30, at the Crop Sciences Research and Education Center, located immediately south of the main campus. Coffee and refreshments will be available under the shade trees near the Seed House beginning at 8:00 a.m.

Similar to past years, we will carpool to the fields, where participants can join a guided (but informal) tour format. The tour will provide ample opportunity to look at research plots and interact with weed science faculty, staff, and graduate students. Participants can compare their favorite corn and soybean herbicide...
programs to other commercial programs and get an early look at some new herbicide active ingredients. The event will conclude around noon with a catered barbecue lunch back at the Seed House.

Cost for the tour is $10, which will help defray expenses of the field tour book, refreshments, and lunch. We will apply for 2 hours of CCA credit in the IPM category.

We are continuing field research work at the DeKalb, Perry, and Brownstown research centers, along with a few on-farm locations. There will be no formal weed science tours at these locations, but most of the weed science plots will be designated during the agronomy day field tours there (check with your local extension office or watch future issues of the Bulletin for dates).

We look forward to visiting with you at the Urbana weed science field day. Please contact us at 217-333-4424 if you have any questions.—Aaron Hager, Doug Maxwell, Lisa Gonzini, and Joshua Kunkel

### Crop Development

#### Looking at the Wheat Crop—Again

With the great start to row crop planting in Illinois this spring, the less-than-great condition of the wheat crop has not gotten much attention. But with 69% of the state’s wheat crop rated fair or worse, the 2010 crop not only occupies the smallest acreage we have had since records began in 1866, but it is also one of the worst-looking crops in decades. While there are some good wheat fields in Illinois (2% of the crop is rated excellent, but that’s only 7,000 acres), there are some very poor-looking fields. It is time to examine, for the last time, whether they are worth keeping.

It is possible that some producers have waited to let the crop grow more before harvesting it as forage or to let it serve as a cover crop with more tonnage of killed material, with soybeans to be planted in May. Our concern about the crop’s being late to head out was unfounded; the latest report indicates that 12% of the crop was headed on May 2, which is only slightly behind normal. Still, if the plan is to let a marginal wheat crop go to maturity and then to plant double-crop soybeans, you need to consider the risk of trading good row crop planting conditions now for very late planting of a second crop under uncertain conditions in mid- to late June.

Robert Bellm visited some wheat fields in southwestern Illinois this week and sent photographs of several fields. One field that he said “looked good from the road if you drive fast” is shown here.

*Wheat field in southwestern Illinois, May 4. (Photo courtesy of Robert Bellm, University of Illinois Extension.)*

If we use the rule of thumb that one head per square foot will produce a bushel per acre, and even increase that some based on the fact that thin stands can produce larger heads, it is still clear that the best we could hope for in this field might be 35 to 40 bushels per acre. Wheat prices, responding to the good crop taking shape in other parts of the world, have not been sending a strong signal to keep marginal fields of soft red winter wheat. The color of this crop indicates that it might have been fertilized with spring nitrogen, though thin stands are able to take up more nitrogen per plant than thicker stands, so plants could be this shade of green from residual N only. If it did get top-dressed N, then destroying the wheat and planting corn in this field would almost certainly have been preferable to harvesting wheat and planting soybeans after that. Planting soybeans into a killed wheat crop is also a possibility, but N released when wheat plants break down won’t do the soybean crop much good, even if there is some benefit to having “cover crop” residue present.

Actively growing wheat should be relatively easy to kill with herbicides at this stage, and thin stands are easier to plant back into than thicker stands. Be sure to watch closely for insect larvae (e.g., armyworm) that can hatch on wheat plants, then move over to a newly planted crop once the wheat starts to die. There are also some concerns about allelopathy when a new crop is planted into fresh crop residue. Even though an allelopathic effect often can’t be measured, and crops planted in this way often do very well, it makes sense to move the residue off the planted row so that anything leaching out of it doesn’t get directly to the newly planted seed. It may be difficult for trash movers to push aside all of the crop residue, especially if the wheat crop roots haven’t died yet. The goal is to get seed placed in soil and covered without having crop residue pushed into the seed furrow or present next to planted seed. Tillage might be an option, but tillage can also incorporate residue in a way that both interferes with planting and leaves residue near the seed. It may in some cases be necessary to let the killed crop dry up for a few more days, if that’s the only way to get good placement of seed of the replacement crop.—Emerson Nafziger

#### Early-Season Soybean Considerations, Scouting, and Counting

The NASS Illinois Weather and Crops Report for May 2 reported that 11% of soybean acres were planted, which was 6% progress over the previous week. Many producers were wondering if starting soybean planting was a good idea, and many more were thinking that the start to planting soybean was earlier than normal. This was true compared to recent years; however, we were also...
11% planted on this same date in 2005 and 18% and 15% in 2001 and 2000, respectively. So the speed of soybean planting might be above average, but it has not set any records.

Much of the planting that occurred in April happened before sweeping rains across much of Illinois, ranging from a few tenths of an inch to multiple inches. Air temperatures have remained mostly above average by 2 to 5 °F during the last 30 days in most locations, and enough sunshine has been available that soil temperatures have remained seasonally warm. Soybeans planted on April 22 for experiments on our South Farms in Champaign County have emerged nicely.

The conditions I’ve described should contribute to good emergence rates in most early-planted soybean fields. There were a few small areas with hard and heavy rains, however, and crusting might be a concern in some conventionally tilled fields. Some of the information regarding soybean emergence issues and early development is still relevant in a 2009 article of the Bulletin that Carl Bradley and I wrote (issue 10, May 29, 2009). I won’t repeat any details, but I would like to expand on the importance of accurately recording your soybean plant stand establishments this spring.

Last week (issue 4, April 29, 2010), I discussed the effect of economic conditions on soybean seeding rates. Perhaps more important than simply reducing seeding rates as seed prices rise is accurately understanding the relationships that contribute to the percentage of plant stands established before making adjustments.

I am often asked my “recommendation” for soybean seeding rate, and I rarely give a precise answer because there is a lot of variability in seeding rates versus plant stand establishments. There are multiple reasons for this, including these: soybeans “compensate” for intraspecies competition well and thus can produce an equal yield for a wide range of established plant populations; there is much more variability in seedbed preparation for soybean than for corn (it is usually not as good); there is much more variability in the precision and accuracy of planting equipment used for soybean versus corn; and the quality of soybean seed (in terms of viability) can fluctuate more for soybean between years due to environmental conditions during seed production. All of these issues must be accounted for. The formula I presented in last week’s article was seeding rate = desired plant stand establishment divided by the percentage of viable seeds planted, then divided again by the percentage of your expected emergence rate. The mathematics of this formula are simple, but the resulting accuracy is only as good as the assumption of expected emergence rate.

This assumption can only be improved by having the best knowledge possible of the variability associated with seedbed preparations, planting equipment, and overall planting conditions. This knowledge comes only with experience—including scouting and counting your soybean stand establishments. There are various methods for counting plant stands. The more area that is counted, the more accurate the count, and the more counts in a field, the more accurate average field estimates will be. How many counts to do in a field also depends on field variability and observed emergence variability. If a field appears to have uniform conditions and a uniform emergence pattern, then a handful of independent counts across the field are probably good enough. However, you certainly want to have independent counts for any major changes, such as differing varieties, tillage systems, and planter settings. You may also want independent counts for factors like “low” and “high” field areas, changes in soil type, and the like.

The area represented by each independent count can also vary. The “hula hoop” method is commonly recommended, particularly for narrow rows. To determine the plant population, divide the square feet in an acre (43,560) by the radius of the hoop (in inches) squared, then multiply by 3.14 and divide by 144. This provides a multiplying factor to convert the number of plants in the hoop to plants per acre. Here is an example for a 36-inch hoop: 43,560 / (18² x 3.14) / 144 = 43,560 / 7.065 = 6,165. So for plants per acre, multiply the number of plants in the hoop by 6,165.

Another common method is to count several plants for a given feet per row. For instance, there are 17,424 linear feet of row per acre for rows 30 inches wide. So multiplying the average number of plants per foot by 17,424 in 30-inch rows will also give you plants per acre. This is not difficult, and many of you are well experienced with counting plant stands. I’ve gone through this, though, because the changing economies of seeding rates mean it is more important than ever to understand expected seeding emergence rates. Scouting and counting soybean seedlings in every field will be the best way to develop a good set of notes from various planting conditions specific to each operation. This in turn will provide the most accurate information for determining how to adjust seeding rates in the future.—Vince M. Davis

How Much Salt Is in the Fertilizer?

This growing season has been unique in the many things farmers have been able to accomplish in such a short time, in part thanks to good weather. Many of last fall’s operations were pushed into spring, and most farmers have been able to get them done and plant on time. This is certainly a good change, especially compared to the previous two springs. Although planting is progressing very well and many farmers are probably done planting, the number one question I have been asked this week is about fertilizer salt index.

Most fertilizer materials are readily soluble because they are salts. Once they are dissolved in the soil, they increase the salt concentration of the soil solution, which in turn increases the...
solution’s osmotic potential. The greater the osmotic potential, the more difficult it is for the seeds or plants to extract the soil water they need for growth.

Materials vary in amounts of salt content. Table 1 shows some salt index values of common fertilizer materials, calculated by comparing the osmotic potential of a given fertilizer to the osmotic potential produced by an equivalent weight of sodium nitrate added to water.

Why sodium nitrate? Simply because it is 100% soluble and it was a commonly used nitrogen (N) source when the salt index concept was proposed back in the early 1940s. The salt index of sodium nitrate is defined as 100. When you have a mixture of nutrients in a fertilizer, the sum of the salt index values (“partial salt index” in the table) represents the total salt index of that fertilizer. Something important to keep in mind is that a salt index does not predict the amount of fertilizer (rate of application) or type of formulation that could result in injury. This is because the potential for salt injury depends on additional factors, which may include the type of crop (soybeans are more susceptible than corn), the type of soil (coarse-textured soils are more prone to salt injury), the soil’s moisture content (more moisture means less chance for injury), and proximity to the seed or seedling (discussed more below). The salt index does, however, classify materials relative to each other and shows which are most likely to be a problem.

Salt injury from fertilizers is typically not a problem if fertilizer and plant are separated by time, distance, or both. One example would be placement of starter fertilizer 2 inches below and 2 inches to the side of the seed row (2x2 placement). With this type of placement the risk of seedling injury is virtually nonexistent. However, when the fertilizer is applied in or near the seed row, salt can cause seed and seedling injury. This type of application has different names, but most common are “pop-up,” “in-furrow,” and “seed row.”

These applications are typically made to increase the possibility that roots will intercept nutrients early in development. Studies have shown that whenever there is a response to starter, the effect is the same whether the fertilizer is placed with the seed or in some other way, such as 2x2 placement. Often the largest response to starter is observed for N followed by phosphorus (P), and then potassium (K). Potassium in starter normally produces advantages when soils are very low in K. When applying fertilizer in the seed row it is critical to apply as little salt as possible. The usual recommendation is to apply no more than 10 lb of N plus K2O per acre. This recommendation is based on K2O from potassium chloride. If the source of K is potassium phosphate, you can afford to apply a little more because potassium phosphate has a lower salt index. Nonetheless, seed-row applications do not allow as much fertilizer, and they are riskier than 2x2 placement or other types of starter applications.

### Table 1. Salt index and partial salt index of various fertilizer materials (arranged in increasing order of salt index within each category).

<table>
<thead>
<tr>
<th>Material and analysis</th>
<th>Salt index</th>
<th>Partial salt index</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nitrogen</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anhydrous ammonia, 82% N</td>
<td>47.1</td>
<td>0.572</td>
</tr>
<tr>
<td>Urea, 46% N</td>
<td>74.4</td>
<td>1.618</td>
</tr>
<tr>
<td>Ammonium sulfate, 21% N, 24% S</td>
<td>88.3</td>
<td>3.252</td>
</tr>
<tr>
<td>Ammonium thiosulfate, 12% N, 26% S</td>
<td>90.4</td>
<td>7.533</td>
</tr>
<tr>
<td>Ammonium nitrate, 34% N</td>
<td>104</td>
<td>3.059</td>
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<tr>
<td><strong>Phosphorus</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superphosphate, 20% P2O5</td>
<td>7.8</td>
<td>0.39</td>
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<tr>
<td>Triple superphosphate, 45% P2O5</td>
<td>10.1</td>
<td>0.224</td>
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<tr>
<td>MAP, 10% N, 50% P2O5</td>
<td>24.3</td>
<td>0.405</td>
</tr>
<tr>
<td>MAP, 11% N, 52% P2O5</td>
<td>26.7</td>
<td>0.405</td>
</tr>
<tr>
<td>DAP, 18% N, 46% P2O5</td>
<td>29.2</td>
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<tr>
<td>Phosphoric acid, 54% P2O5</td>
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<td>1.613</td>
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<tr>
<td>Phosphoric acid, 72% P2O5</td>
<td></td>
<td>1.754</td>
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<tr>
<td><strong>Potassium</strong></td>
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<tr>
<td>Monopotassium phosphate, 52.2% P2O5, 34.6% K2O</td>
<td>8.4</td>
<td>0.097</td>
</tr>
<tr>
<td>Potassium sulfate, 50% K2O, 18% S</td>
<td>42.6</td>
<td>0.852</td>
</tr>
<tr>
<td>Potassium thiosulfate, 25% K2O, 17% S</td>
<td>68</td>
<td>2.72</td>
</tr>
<tr>
<td>Potassium nitrate, 13% N, 44% K2O</td>
<td>69.5</td>
<td>1.219</td>
</tr>
<tr>
<td>Potassium chloride, 60% K2O</td>
<td>116.2</td>
<td>1.936</td>
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<tr>
<td><strong>Common liquid solutions</strong></td>
<td></td>
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</tr>
<tr>
<td>2-20-20°</td>
<td>7.2</td>
<td>0.17</td>
</tr>
<tr>
<td>3-18-18°</td>
<td>8.5</td>
<td>0.22</td>
</tr>
<tr>
<td>6-24-6°</td>
<td>11.5</td>
<td>0.32</td>
</tr>
<tr>
<td>6-30-10°</td>
<td>13.8</td>
<td>0.3</td>
</tr>
<tr>
<td>9-18-9°</td>
<td>16.7</td>
<td>0.48</td>
</tr>
<tr>
<td>Ammonium polyphosphate, 10% N, 34% P2O5</td>
<td>20</td>
<td>0.455</td>
</tr>
<tr>
<td>4-10-10°</td>
<td>27.5</td>
<td>1.18</td>
</tr>
<tr>
<td>7-21-7°</td>
<td>27.8</td>
<td>0.79</td>
</tr>
<tr>
<td>28% N (39% ammonium nitrate, 31% urea)</td>
<td>63</td>
<td>2.25</td>
</tr>
<tr>
<td>32% N (44% ammonium nitrate, 35% urea)</td>
<td>71.1</td>
<td>2.221</td>
</tr>
</tbody>
</table>

*The salt index of a fertilizer containing more than one nutrient is the sum of the salt index of each component per unit (20 lb) of plant nutrient multiplied by the number of units in that formulation.

*Per 100 lbs of H3PO4.

*Formulated using potassium phosphate as the K source.

*Use with caution for seed-row placement.

*Not recommended for seed-row placement.
If you are convinced that placement with the seed (seed-row application) is the way to go, I suggest trying to use fertilizer sources and rates that minimize the chance for injury. In addition to salt injury, some N compounds (such as UAN, urea, and ammonium thiosulfate) produce free ammonia, which can cause poor germination or seedling death. The best fertilizers for seed-row application have a low salt index, N compounds that do not produce free ammonia, and potassium phosphate rather than potassium chloride as the K source.—Fabían G. Fernández

Regional Reports

Extension center educators, unit educators, and unit assistants in northern, west-central, east-central, and southern Illinois prepare regional reports to provide more localized insight into pest situations and crop conditions in Illinois. The reports will keep you up to date on situations in field and forage crops as they develop throughout the season. The regions have been defined broadly to include the agricultural statistics districts as designated by the Illinois Agricultural Statistics Service, with slight modifications:

- North (Northwest and Northeast districts, plus Stark and Marshall counties)
- West-central (West and West South-west districts, and Peoria, Woodford, Tazewell, Mason, Menard, and Logan counties from the Central district)
- East-central (East and East 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

Corn is better than 95% planted in the east-central area; many farmers are finished and have moved on to soybean planting. Most corn is up, with sizes ranging from VE to V2. No significant problems have been noted.

Some farmers are reporting problems with corn residue when trying to plant soybeans. Soggy stalks are providing a mulch cover that is keeping soils damp. In this situation, some cultivators and tillage tools are not “cutting it.” No-till drills are in demand.

Northern Illinois

Corn planting is over 90% complete, and emerged stands look very good. The earliest planted corn is quickly approaching V3. A light frost was observed in portions of the region on April 28, causing some slight discoloration on emerged corn, but seedlings are recovering. Soybean planting is around 20% complete. Other activities during the week include side-dressing anhydrous ammonia and herbicide application.

Jim Morrison, crop systems extension educator, reports wheat in the northwest portion of the region at Feekes 7, approaching Feekes 8. He also reported powdery mildew infection in a Winnebago County wheat field.

Extension educators are still catching black cutworm moths in monitored traps, but no intense captures were reported in the past week.

Alfalfa growth is ahead of schedule and in the prebud stage. Growers are reminded to use the PEAQ technique (Predictive Equations for Alfalfa Quality—peaq.traill.uiuc.edu) to predict optimum dates for first cutting for high-quality alfalfa.

Southern Illinois

Intense but scattered storms earlier in the week left some areas saturated while other areas remain relatively dry. Little additional planting progress has been made since last week’s report. Overall corn emergence is as uniform as one could ever hope to expect. A localized storm cell passing across parts of Calhoun, Jersey, and Madison counties on Monday night deposited anywhere from 1 to 3 inches of hail. Emerged corn was pretty much obliterated in the hardest-hit areas. Although the crop’s growing point is still protected below ground, the large amounts of mud splashed over the plants may increase the likelihood of seedling rots’ developing. Damaged fields should be monitored closely to determine what percentage of plants actually survive and are healthy.

Wheat development has reached Feekes 10.1 to 10.2 (head emergence). As the crop approaches and completes flowering over the next couple of weeks, the potential for Fusarium head blight, or scab, will need to be closely monitored. A web-based prediction tool (www.wheatscab.psu.edu) can help growers make informed decisions on the need for fungicide applications to manage this disease.

Alfalfa that has not yet been harvested is beginning to bloom, at which point relative feed value will quickly decline. Plants are beginning to lodge, and leaf spot diseases are becoming more obvious in the lower canopy. Harvesting the crop by cutting as close to the ground as possible will help remove diseased leaves and stems and thus leave less inoculum in the field to infect the regrowth.

West-Central Illinois

Field work has just started again in the last few days. Fields have been very wet due to heavy rains at various times. Corn is mostly planted and ranges from 1- to 3-leaf development stages. For some areas, the weather allowed for a good test of emergence of some corn hybrids. Some drowned-out spots will have to be replanted. But all in all, most corn has emerged and looks good. There were some reports of wireworms and cutworms in corn in the southern part of the region, but nothing major at this time. We continue to catch cutworm
moths in traps, but no significant captures have been reported. A portion of Macoupin County was hit by hail a few days ago, and damage to corn is being assessed.

Some soybean planting has started, and earlier-planted beans may be vulnerable to sudden death syndrome, thanks to the perfect weather conditions.

If you can find a wheat field, it is elongating and not quite jointed.

There have been some reports of weevil activity in alfalfa in the northwestern part of the region.

**Contributing Authors**

Vince M. Davis, davisv@illinois.edu, 217-244-7497

Fabián Fernández, fernande@illinois.edu, 217-333-4426

Mike Gray, megray@illinois.edu, 217-333-6652

Aaron Hager, hager@illinois.edu, 217-333-4424

Emerson Nafziger, ednaf@illinois.edu, 217-333-4424