Crop producers and others involved in agriculture are keeping track of and bemoaning the continuing storm fronts that keep dropping lots of rain onto already sodden fields. Near-future forecasts suggest more rain is on the way. To add insult to injury, the storm fronts likely are carrying adult black cutworms into Illinois. As the females “drop out,” they will seek attractive sites for laying eggs, and they should have no trouble finding plenty of fields in which weeds are growing. Winter annual and perennial weeds, in particular, will attract egg-laying black cutworm females. Consequently, as planting is delayed, black cutworm larvae will hatch and begin feeding on the weeds. As the weeds are killed, the cutworms will need additional food and will be large enough to cut corn plants as seedlings emerge from the soil.

In the past we have had an extensive network of black cutworm pheromone traps throughout Illinois. The captures of black cutworm adults allowed us to keep tabs on flights of black cutworms into the state and to detect “intense captures” (nine or more adults captured over 2 days). An intense capture is the biological trigger, or biofix, we use to begin accumulating degree-days (above 50°F) to predict development of the larvae (Table 1), the stages that cause considerable grief when numbers of black cutworms are large. However, due to a number of factors, we no longer have the network of traps on which to rely for timely and localized information. Instead we rely on reports from others who voluntarily monitor for black cutworm adults early in the spring. (This is a not-so-subtle request to send us information about your captures so that we can share the reports.)

Thus far I have heard from only one individual about captures of black cutworm adults. Doug Gucker, with University of Illinois Extension in Piatt County, caught two black cutworm adults on April 4. To interpret your own findings if you are monitoring for black cutworm adults in Illinois, refer to the degree-day calculator at www.sws.uiuc.edu/warm/pestdata. After you select “black cutworm” and a location, you will be asked to enter the date of the first significant moth flight (i.e., intense capture). You will obtain the accumulated degree-days (above 50°F) from the date of the moth flight to the most recent date in the database, as well as 1-week and 2-week projec-

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Table 1. Development of black cutworms based on degree-days accumulated (base 50°F) after an intense capture of adults (nine or more captured over 2 days)

<table>
<thead>
<tr>
<th>Accumulated degree-days</th>
<th>First occurrence</th>
<th>General activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>First intense moth flight</td>
<td>—</td>
</tr>
<tr>
<td>91–311</td>
<td>1st through 3rd instars</td>
<td>Leaf feeding</td>
</tr>
<tr>
<td>312–364</td>
<td>4th instar</td>
<td>Cutting begins</td>
</tr>
<tr>
<td>365–430</td>
<td>5th instar</td>
<td>Cutting</td>
</tr>
<tr>
<td>431–640</td>
<td>6th instar</td>
<td>Cutting slows</td>
</tr>
<tr>
<td>641–989</td>
<td>Pupa through adult</td>
<td>Mating and egg laying</td>
</tr>
</tbody>
</table>

Baiting Recommendations and Toxicity Evaluations of Thiamicotenoid Insecticides (Poncho and Cruiser) for Wireworms

The recommended scouting approach for wireworms is to establish bait stations a few weeks prior to planting. It is common knowledge that this pest management recommendation is rarely implemented in most commercial corn fields. However, in many areas of Illinois, planting this season will be delayed compared with previous years, so why not grab a shovel, get rid of some nervous energy, and give this approach a chance this year? According to the Entomological Society of America’s Handbook of Corn Insects, the following procedures should be used in setting up bait stations:

- Establish stations 2 to 3 weeks before the targeted planting date.
- Target fields with a history of grass infestations or with small-grain stubble.
- Consider 5 to 10 bait stations per field.
- Bait stations should be 2 to 3 inches deep and 6 to 9 inches wide.
- Within each soil depression, place one-half cup of an equal mix of untreated corn and wheat seeds and replace the soil.
- Place a sheet of black plastic directly over the mounded soil area, then overlay a sheet of clear plastic on top of the entire baited area.
- Secure plastic with loose soil and flag each bait station.
- Prior to planting, check each bait station for wireworms. As few as one wireworm per bait station indicates a potential economic infestation.

Because of the escalating use of Bt hybrids, little regard is paid to potential wireworm infestations, the underlying assumption being that the thiamicotenoid seed treatments (Poncho or Cruiser) will effectively control these secondary soil insects. But relatively few peer-reviewed articles have been published on the efficacy of these products against wireworm species. This is not surprising given the difficulty in establishing field plots with economic infestations. In the most recent issue of the Journal of Economic Entomology (Volume 101, issue 2), two papers were published by scientists who evaluated the lethal and sublethal effects of several insecticides, including Poncho (clothianidin) and Cruiser (thiamethoxam), against several economically important species of wireworms:


I include here key points from each paper that shed new light on the performance of various insecticides used for wireworm control.

- The toxicity of various soil insecticides on wireworms and their behavior in the soil is poorly understood.
- Many field studies of soil insecticide efficacy on wireworms have been based primarily on stand counts. Using stand counts as the only measurement of efficacy may be inadequate and provide a poor assessment of product performance.
- Insecticide efficacy studies against wireworms should evaluate the influence of products on morbidity.
- Wireworms characterized as morbid (as indicated by writhing or leg or mouthpart movement) following an insecticide treatment may recover or eventually die.
- In some instances, morbid wireworms have recovered 100 days after treatment with certain insecticides. This potentially has important long-term management implications for wireworm populations in producers’ fields. For instance, certain insecticides may prevent damage to seedling corn in the current growing season; however, if wireworms recover, densities could build to very significant levels across an area over time. Recovery of moribund larvae has been reported previously for several insecticides,
Managing the Consequences of Long-Term Weed Control

Are the outcomes of weed control practices always identical to the outcomes of weed management programs? The following article was written for the proceedings of the 2008 University of Illinois Crop Protection Technology Conference. It provides many more philosophical considerations than empirical data, but we hope it might invoke some dialogue and discussion. You might note some themes and passages similar to those in “Glyphosate-Resistant Waterhemp in Illinois: Recommendations for Management” (issue 1 of the Bulletin, March 21, 2008).

Plant species considered to be weeds have caused myriad maladies to befall human society since the beginning of recorded time, including hunger caused by losses in crop productivity and yield, dramatic reductions in the aesthetic value of countless landscapes, significant and sometimes permanent loss of ecological diversity, physical ailments of humans and livestock alike, and untold expenditures of financial resources aimed toward their control. Yet despite the best of human efforts to keep these undesirable plants in check, weeds continue to plague multiple aspects of daily life.

Those who are considered weed management practitioners of agronomic cropping systems know all too well how difficult it can be to remove weeds from the cropping landscape. History is replete with examples of how weeds have evolved to evade many of the tools designed for their management. Papers in previous proceedings of the Crop Protection Technology Conference have illustrated some of these adaptations, including changes in the emergence characteristics of giant ragweed (once considered an early-emerging species) in response to long-term crop production practices, increased occurrence of weed species not previously well characterized (such as hop hornbeam copperleaf), and selection of herbicide-resistant biotypes (such as water hemp with resistance to three herbicide modes of action).

Some of these adaptations could perhaps be described as analogous to corn yield potential: many plant genes and environmental factors contribute to the observed response. Other adaptations in weeds are the result of the intense human selection for traits that ensure survival of the species in the “artificial” environment of agronomic cropping systems. For example, water hemp was once very sensitive to many ALS-inhibiting herbicides but now demonstrates high-level resistance via an altered herbicide target site selected by repeated use of these herbicides. Some weeds have even adapted to the age-old practice of hand weeding; intense weeding of flooded rice fields has selected for a barnyardgrass biotype that closely mimics rice in appearance and thus escapes being hand-eliminated from the crop.

These examples illustrate how weed species have adapted to changes in production practices. In some cases weeds adapt in response to a single selection factor. Other times the adaptation results from multiple changes in production practices. Whether single or multiple factors are involved, it is important to remember that weeds will continue to adapt and challenge us.

The introduction and commercialization of glyphosate-resistant soybean varieties and corn hybrids has in many ways dramatically altered the weed management practices of farmers across much of the Midwest. Estimates place the adoption of herbicide-resistant soybean varieties and corn hybrids (principally glyphosate-resistant) at approximately 90% and 37%, respectively, of U.S. soybean and corn acreage, according to the USDA National Agricultural Statistics Service report of June 2006. Glyphosate-resistant crops offer many advantages to farmers, but as the cited examples illustrate, over-reliance on a single management option can lead to new weed management challenges. Until 2007, glyphosate-resistant weeds were the least represented herbicide-resistant biotypes among all major herbicide mode-of-action families. In 2007, however, the frequency of glyphosate-resistant weed biotypes surpassed that of dinitroaniline-resistant weed biotypes.

A “philosophical” consideration sometimes discussed among academic weed scientists is the difference, real or perceived, between what is accomplished through weed management compared with weed control. The weed science community has no “Webster’s of Weed Science Terminology” from which to seek definitive answers, so debate often becomes spirited, and conjectures among pontificators abound. The
great “author” Merriam Webster offers several possible ways to define control and manage. Careful scrutiny and (biased) selection of possible definitions provide the following:
• control: to reduce the incidence or severity of, especially to innocuous levels
• manage: to handle or direct with a degree of skill

The weed spectrum in many Illinois soybean fields is such that a single control strategy (e.g., a single post-emergence herbicide application) may not always provide consistent control. Over the past decade, many practitioners have become very proficient at controlling weeds but perhaps less proficient at managing them. Potentially serious repercussions are poised to plague Illinois soybean farmers in 2008 due to the widespread adoption of weed control in lieu of weed management. A specific consequence of widespread weed control is the selection of Illinois waterhem biotypes resistant to glyphosate. A pertinent question to consider is this: How will Illinois farmers manage a waterhem population that may no longer be susceptible to glyphosate or diphenylether herbicides, the only postemergence soybean herbicide options that control waterhem?

Managing Fusarium Head Blight (Scab) of Wheat

Fusarium head blight (FHB), also known as scab, is a disease of wheat that can cause both yield and quality losses. Symptoms appear as bleached heads or heads with both green and bleached areas. The fungus Fusarium graminearum (aka Gibberella zae) causes FHB of wheat and can cause Gibberella stalk and ear rot of corn. The fungus also produces the toxin deoxynivalenol (DON), which can contaminate grain, a serious problem for millers. Weather is extremely important in the development of FHB, especially from flowering through kernel development. Moderate temperatures (75 to 85°F), prolonged periods of high humidity, and prolonged wet periods favor FHB.

Successfully managing FHB requires an integrated approach, where the use of resistant varieties, better crop sequences, and fungicides can limit related losses.

Resistant varieties. Although no wheat varieties are immune to FHB, some are more resistant than others. Dr. Fred Kolb’s wheat-breeding program at the University of Illinois has rated varieties for FHB severity under high-pressure FHB environments over multiple years. These ratings are available online at the University of Illinois Variety Testing site, located in the “Small Grains” section (vt.cropsci. uiuc.edu).

Cropping sequence. Because corn stubble can harbor the FHB fungus, wheat following soybean is at a lower risk of developing FHB than wheat following corn.

Foliar fungicides. The use of a foliar fungicide is the only “in-season” option for control of FHB. Although fungicides are a good control option, losses will still occur on a highly susceptible variety sprayed with a fungicide in an environment conducive for FHB, so it is always important to start off on the right foot and plant a variety with good resistance.

As of today (April 9, 2009), the only fungicides that have Fusarium head blight on their labels are Proline (Bayer) and Tilt (Syngenta). Proline has a 30-day preharvest interval, while Tilt’s is 40 days. A summary of FHB fungicide trials conducted across multiple years and states was presented at the U.S. Wheat and Barley Scab Initiative Forum last fall by Dr. Pierce Paul of Ohio State University. In his summary, Proline was significantly better than Tilt at reducing FHB severity and reducing DON levels in harvested grain. There is a slight chance at this point that additional fungicide products will still receive registration for use on wheat to control FHB this spring; I will address the additions in another Bulletin article if that occurs.

For control of FHB, fungicides should be applied at Feeke’s growth stage 10.5.1 (early anthesis). It is also important to spray with nozzles oriented to spray forward, which helps in coverage of the wheat head. Past recommendations said to use nozzles that sprayed both forward and backward; however, recent research at North Dakota State University has shown that “forward-facing” nozzles may be all that are needed.

Fungicides that contain an active ingredient in the strobilurin class should never be applied to control FHB, including products like Headline, Quadris, Quilt, and Stratego. Research has shown that strobilurin fungicides can actually increase DON levels in harvested grain. These products are very good at controlling foliar diseases of wheat, and if used they should be applied earlier in the season (around Feekes 8—see issue 1, March 21, 2008, of the Bulletin).

Forecasting system for FHB. The Fusarium Head Blight Risk Assessment Tool is available to help with fungicide application decisions (www.wheatscab.psu.edu). A “risk map” shows the risk for FHB throughout Illinois based on weather conditions to date.—Carl Bradley

Fungicide Efficacy Table for Wheat

A group of university wheat pathologists on the NCERA-184 Small Grain Diseases Committee have assembled a wheat fungicide efficacy table each year for the past few years. The 2008 version is reproduced at right.—Carl Bradley

How Much Nitrogen Have I Lost?

Wet soil conditions for much of the winter extending through the present are creating concerns that much of the nitrogen (N) applied last fall for the
Management of Small Grain Diseases (NCERA-184)—Fungicide Efficacy for Control of Wheat Diseases

The North Central Regional Committee on Management of Small Grain Diseases has developed the following information on fungicide efficacy for control of certain foliar diseases of wheat for use by the grain production industry in the U.S. Efficacy ratings for each fungicide listed in the following table were determined by field testing the materials over multiple years and locations by the members of the committee. Efficacy is based on proper application timing to achieve optimum effectiveness of the fungicide as determined by labeled instructions and overall level of disease in the field at the time of application. Differences in efficacy among fungicide products were determined by direct comparisons among products in field tests and are based on a single application of the labeled rate as listed in the table.

**Efficacy of fungicides for wheat disease control based on appropriate application timing.**

<table>
<thead>
<tr>
<th>Product</th>
<th>Fungicide(s)</th>
<th>Rate/A (fl oz)</th>
<th>Powdery mildew</th>
<th>Septoria leaf blotch</th>
<th>Tan spot</th>
<th>Stripe rust</th>
<th>Leaf rust</th>
<th>Head scab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headline 2.09 EC</td>
<td>Pyraclostrobin 23.6%</td>
<td>6.0 to 9.0</td>
<td>G₁</td>
<td>VG</td>
<td>E</td>
<td>E²</td>
<td>E</td>
<td>NR</td>
</tr>
<tr>
<td>Quadris 2.08 SC</td>
<td>Azoxystrobin 22.9%</td>
<td>6.2 to 10.8</td>
<td>VG</td>
<td>VG</td>
<td>E</td>
<td>E²</td>
<td>E</td>
<td>NR</td>
</tr>
<tr>
<td>Proline 480 SC</td>
<td>Prothioconazole 41%</td>
<td>5.0 to 5.7</td>
<td>–₄</td>
<td>VG</td>
<td>VG</td>
<td>–</td>
<td>VG</td>
<td>G(VG)³</td>
</tr>
<tr>
<td>PropMax 3.6 EC</td>
<td>Propiconazole 41.8%</td>
<td>4.0</td>
<td>VG</td>
<td>VG</td>
<td>VG</td>
<td>VG</td>
<td>VG</td>
<td>F</td>
</tr>
<tr>
<td>Tilt 3.6 EC</td>
<td>Propiconazole 41.8%</td>
<td>4.0</td>
<td>VG</td>
<td>VG</td>
<td>VG</td>
<td>VG</td>
<td>VG</td>
<td>F</td>
</tr>
<tr>
<td>Quit 200 SC</td>
<td>Azoxystrobin 7.0%</td>
<td>14.0</td>
<td>VG</td>
<td>VG</td>
<td>VG</td>
<td>E</td>
<td>E</td>
<td>NR</td>
</tr>
<tr>
<td>Stratego 250 EC</td>
<td>Propiconazole 11.7%</td>
<td>10.0</td>
<td>G</td>
<td>VG</td>
<td>VG</td>
<td>VG</td>
<td>G</td>
<td>NR</td>
</tr>
<tr>
<td>Trifoxytrob 11.4%</td>
<td>Propiconazole 11.4%</td>
<td>10.0</td>
<td>G</td>
<td>VG</td>
<td>VG</td>
<td>VG</td>
<td>G</td>
<td>NR</td>
</tr>
<tr>
<td>Folicur 3.6 F</td>
<td>Tebuconazole 38.7%</td>
<td>4.0</td>
<td>G</td>
<td>VG</td>
<td>VG</td>
<td>E</td>
<td>E</td>
<td>G</td>
</tr>
</tbody>
</table>

This information is provided only as a guide. It is the responsibility of the pesticide applicator by law to read and follow all current label directions. No endorsement is intended for products listed, nor is criticism meant for products not listed. Members of NCR-184 assume no liability resulting from the use of these products.

1Efficacy categories: NR, not recommended; F, fair; G, good; VG, very good; E, excellent.
2Efficacy may be significantly reduced if slow strobilurin products are applied after infection of has occurred.
3(G) indicates greater efficacy at higher application rates.
4Insufficient data to make statement about efficacy of this product.
5Folicur does not currently have a federal label, but it may be labeled or have Section 18 emergency registration in some states in 2008.
2008 corn crop might be lost. When soils become saturated, the potential for N losses is directly related to the amount of N present in the nitrate (NO$_3^-$) form. Under water-saturated conditions, nitrate is most likely to be lost through denitrification in fine-textured soils and through leaching below the root zone in coarse-textured soils. Most fall-applied N is either ammonium (NH$_4^+$) or a form that transforms rapidly into ammonium. Nitrification, or the conversion of ammonium to nitrate, is a bacteria-mediated transformation. The bacterium Nitrosomonas converts NH$_4^+$ into nitrite (NO$_2^-$), while the bacterium Nitrobacter converts NO$_2^-$ to NO$_3^-$.

The activity of these bacteria is minimal at temperatures below 50°F. The bacteria also need aerobic conditions (unsaturated soil) to nitrify ammonium. Thus, the amount of nitrification that occurs in the soil depends largely on soil temperature and the time elapsed from application until the soil becomes saturated with water. Further, the process can be reduced with inhibitors that lower the activity of the nitrifying bacteria and let N stay in the ammonium form for a longer period.

Although it has been a wet winter, soil temperatures have been cool and similar to previous years. In fact, it is not uncommon to have higher temperatures than what we have seen this winter. Soil temperatures at the 4-inch depth for selected Illinois locations (Source: Water and Atmospheric Resources Monitoring, www.sws.uiuc.edu/warm/) are shown in Table 2. Since soils are still cool and wet, and nitrifying bacteria need warm temperatures and aerobic conditions to transform ammonium to nitrate, it is likely that not much fertilizer N has been transformed into nitrate or soil N mineralized at this point. If the spring stays wet during April and May as soil temperatures start to climb, it is likely that some of the fertilizer N will be lost. If conditions are conducive to N losses I will address what can be done. However, for the time being I believe we need not feel too concerned about N losses.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Champaign</td>
<td>44 (2°)</td>
<td>34</td>
<td>31</td>
<td>28</td>
<td>37</td>
</tr>
<tr>
<td>DeKalb</td>
<td>43 (2)</td>
<td>34</td>
<td>35</td>
<td>30</td>
<td>32</td>
</tr>
<tr>
<td>Monmouth</td>
<td>44 (5)</td>
<td>34</td>
<td>33</td>
<td>29</td>
<td>34</td>
</tr>
<tr>
<td>Orr</td>
<td>48 (4°)</td>
<td>37</td>
<td>35</td>
<td>32</td>
<td>40 (1)</td>
</tr>
<tr>
<td>Peoria</td>
<td>46 (3°)</td>
<td>37</td>
<td>35</td>
<td>31</td>
<td>37</td>
</tr>
<tr>
<td>Springfield</td>
<td>48 (4°)</td>
<td>37</td>
<td>35 (2)</td>
<td>33</td>
<td>41 (1)</td>
</tr>
</tbody>
</table>

Values in parentheses are the number of days that maximum soil temperature was above 50°F. Asterisks indicate that those days were after November 15.

The greatest reason for concern about N losses at this time, or for most any given year, would be if fall N application guidelines were not followed. Last fall was dry and warm well into the month of October and the first part of November, with soil temperatures at the 4-inch depth dropping below 50°F later than normal. If fall application recommendations were not followed, there is a greater chance that some of the N might have been transformed to nitrate and potentially lost due to the wet conditions experienced thus far.

Another reason for concern would be if fall N-sources that are not recommended, including ammonium sulfate, urea, ammonium nitrate, and urea-ammonium nitrate solutions (UAN), were used last fall. These forms are not recommended for fall application because they do not build ammonia concentrations sufficiently high to inhibit nitrification. Also, 25% and 50% of the N in UAN and ammonium nitrate, respectively, is subject to loss at the time of application since it is already in the nitrate form.

Finally, intensive rain events in some parts of the state have caused water to move out of fields, quickly carrying with it soil containing fertilizer N. Areas where heavy rains occurred after surface applications of polymer-coated urea or surface applications of N for wheat this spring could have experienced N losses if there was water runoff from the field. However, these situations are likely the exception rather than the rule. I suspect that if such a situation did occur, it was likely in small fractions of a field and should not be reason for excessive concern.—Fabián G. Fernández

### Issues in Illinois Wheat

The Illinois wheat crop has mostly survived the winter, and the most recent rating put the crop at 61% good and 27% fair, with the rest equally divided between poor and excellent. After watching over the winter as excessive rain fell in some areas, followed by standing water and ice, we are fortunate to have a crop in as good a shape as this one is. It was helped by the fact that the weather stayed relatively cold most of the winter, with few warm–cold cycles to damage the crop.

Wheat has been relatively slow to resume growth this spring due to cool temperatures. Growth in southern Illinois has been better, but here at Urbana wheat is still less than 6 inches tall, and though tillering appears to be adequate, lack of sunshine and continued cool temperatures are delaying development. This will change quickly once it warms up, but we can already expect some delay in heading unless it gets warmer than usual later in April. That would speed up the crop but would not likely improve yield potential much. Sunshine and average temperatures over the next month will do a great deal of good.

One exception to the generally good condition of the winter wheat crop is the damage in some northern Illinois fields where water stood or ice covered the crop for a period of time. There were several bouts of such weather over the winter, and it could
have been any of these events—or perhaps more than one—that caused the damage. In affected areas, which usually occur in patches rather than across entire fields, most to all of the leaf tissue is dead, and the plants are probably dead in some cases. It has been cold enough to delay regrowth in that part of the state, and it’s possible that some of the plants with no surviving leaf area might still manage some new leaf growth. Even if that happens, tiller and head counts will likely be reduced, and we can expect lower yields in these parts of the field even if plants survive and grow back.

The pattern of dead plants tends to be in streaks and patches, not necessarily all in low areas where water might have stood. Such a pattern indicates that snow cover and ice formation might have interacted to cause or prevent such damage, perhaps more than once. Photos sent by Lyle Paul of the variety trial at DeKalb suggest there might be some variety differences, but differences due to location in the field are also likely. Prospects for having that trial make it to harvest remain uncertain.

Such damage, plus the very high wheat prices this year, brings questions about the prospects for using spring wheat, either to fill in damaged winter wheat or to plant in whole fields. The short answer about growing spring wheat in Illinois: It can do well, yielding as much as two thirds to three fourths as much as winter wheat, but only if we end up having a relatively cool spring and early summer, with enough moisture to get the crop through to harvest in mid-July. Spring wheat varieties are not developed for, or tested under, Illinois conditions, so we would have to take what we can get from states like Minnesota, North Dakota, and Montana. Because all spring wheat planted in those areas is hard wheat used for milling and baking, quality, including protein content, is a primary consideration. Getting high-grain protein and acceptable flour quality from spring wheat grown in Illinois is challenging, and we can expect lower prices than farmers in more northern areas will receive.

Because of our climatic limitations, growing spring wheat in Illinois is risky, and there is little we can do to reduce the risk. In fact, it’s already getting late to plant spring wheat, just as it is to plant spring oats. To have much chance of producing good yields (40 to 50 bushels per acre), spring wheat needs to be planted by mid-April. The same is true for spring oats, though we expect yields of 100 bushels or more for oats (on a weight basis, equivalent to a wheat yield of 53 bushels) if they are planted on time and we get reasonable growing conditions. The two crops share many of the same limitations, though grain quality, which is usually a primary concern in spring wheat, is less problematic for oats. If the primary need or market is for straw, spring wheat should produce quantities similar to that from spring oats, but perhaps of higher quality as straw.

Finally, nitrogen fertilizer on wheat remains an issue and a concern, both for those not yet able to apply N and those who applied it before heavy rain and are wondering how much is still there. Concern about the amount of loss is best managed by watching the crop carefully and being ready to apply more N if the crop starts to lose the dark green color it should develop as the weather turns warmer with more sunshine. There might be some advantage to applying 40 or 50 lb of N fertilizer (lawn N fertilizer will work, using about a pound of N, or 4 lb of material, per 1,000 square feet) by hand to a small area (maybe 20 by 20 feet) of a field now to serve as a color reference over the next month. If the rest of the field remains the same color as the added-fertilizer area, then applying more N is unnecessary.

If N has not yet been applied to wheat this spring, it will pay to apply it even as late as heading, though yields will often be reduced by the delay. How much they are reduced depends on how much N the crop has been able to take up by now. If tiller numbers are good and crop color is reasonably good, then there is little deficiency yet and there may be little yield loss if N can be applied within the next week. If the crop is already pale green and tiller number is low, then yield has been reduced, and it will be reduced further the later N is applied. Steve Ebelhar showed in southern Illinois that the crop may lose a bushel or more per day of delay in N application from jointing to heading, though this is expected to vary a lot over years.

—Emerson Nafziger

REGIONAL REPORTS

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

• North (Northwest and Northeast districts, plus Stark and Marshall counties)
• West-central (West and West Southwest districts, and Peoria, Woodford, Tazewell, Mason, Menard, and Logan counties from the Central district)
• East-central (East and East Southeast districts [except Marion, Clay, Richland, and Lawrence counties], McLean, DeWitt, and Macon counties from the Central district)
• South (Southwest and Southeast districts, and Marion, Clay, Richland, and Lawrence counties from the East Southeast district)

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

Northern Illinois

Continued rainfall throughout the region has prevented any field work. Additional precipitation and possible snow flurries are predicted during the
end of the week. There have not been any reports of oat or alfalfa seeding in northwestern Illinois. Lyle Paul, agronomist at the University of Illinois Agronomy Research Center near DeKalb, reports some winter wheat kill in areas that were under ice for an extended period. Overall, many winter wheat fields throughout the region have a few areas of winter kill, but the areas are very minimal in each field.

Southern Illinois
Rainfall during the past week has become spottier, allowing some fields to actually drain off surface-water ponding while others remain saturated. Wheat continues to develop normally, and overall it looks much better than one might expect considering how wet it has been. Some growers are having nitrogen aerially applied on fields that did not receive it earlier in the spring. Fields that have not had nitrogen applied are beginning to lose color, and areas that have held ponded water are yellow.

West-Central Illinois
Some tillage, nitrogen and chemical applications, and corn planting operations are beginning, but most are on hold due to the cold and rainy weather. A little anhydrous has been applied in some areas between the rains and in regions with lighter, sandier soils. Soil temperatures are hovering around 50°F. Wheat is continuing to green up nicely. Some nitrogen top-dressing is getting done in between rains.
A lot of soil erosion, mostly along natural waterways and field edges, is apparent from the heavy rains on frozen soil earlier this year. Erosion is particularly bad in fields tilled last fall.

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