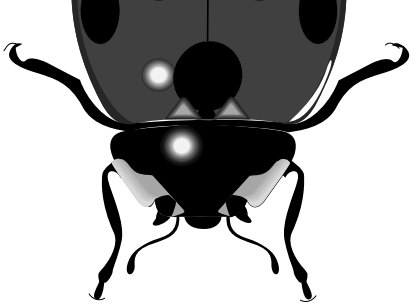

PEST MANAGEMENT & CROP DEVELOPMENT

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In This Issue

INSECTS

Preharvest Intervals for Soybean Insecticides

Now that soybean harvest is well under way throughout the state, this article is a tad bit late as a "warning." However, while reading an article that Marlin Rice wrote in the September 23, 2002, issue of Iowa State University's *Integrated Crop Management,* I decided better late than never.

Bean leaf beetles and western corn rootworm adults gave soybean growers fits in large areas of northern and central Illinois during August and September this year. Many growers had insecticides applied to their soybean fields to prevent excessive pod feeding and peduncle clipping (causing pods to fall off) as well as to alleviate some concern (much of it unfounded) about insect transmission of soybean disease pathogens. We are not certain how many acres of soybeans were sprayed with insecticides, but reports into our office suggest that acres treated in 2002 were "more than average." Whether all of these insecticide applications were justified is debatable and is not the focus of this article. It's more important for people to know about preharvest intervals for the insecticides that were applied to soybeans (i.e., the legal number of days between insecticide application and harvest).

Although several insecticides are labeled for control of bean leaf beetles in soybeans, not all of them should be used against the second generation of beetles that occurs in late summer. Table 1 shows the preharvest intervals and related remarks for several insecticides labeled for use on soybeans. Some of these products (e.g., Ambush, Pounce, Warrior) have very long preharvest intervals (e.g., 45 to 60 days). Other products have relatively shorter preharvest intervals (e.g., 20 to 28 days). Obviously, products with long preharvest intervals probably should not be used to control bean leaf beetles or other insects causing injury to soybeans late in the growing season.

So what are the consequences if soybeans are harvested before the preharvest interval of a specific insecticide has elapsed? Pure and simple: it's illegal to harvest soybeans before the preharvest interval of a specific insecticide has elapsed. And growers bear the burden for this if they do. Some select sentences from Marlin Rice's article spell it out. "The Federal Food, Drug, and Cosmetic Act, Chapter IV, Section 402 (2B) states: 'A food shall be deemed to be adulterated if it bears or contains a pesticide chemical residue that is unsafe within the meaning of section 408(a).' This means that if any pesticide chemical residue is found on the soybean that exceeds the established pesticide tolerance then it is unsafe. The farmer that hauls soybean to the grain elevator with contaminate residue would be liable for delivering to the marketplace soybean with illegal residues and any other problems they could cause. Unsafe soybean could create many problems at the grain elevator or with potential sales to international markets."

Table 1. Prevharvest intervals for insecticides labeled for use on soybeans.

Insecticide	*Preharvest interval (days) and other remarks*
*Ambush 2E	60 days. Do not apply more than 0.4 pound active ingredient per acre per season. Do not graze treated areas or harvest for forage or hay.
*Asana XL	21 days. Do not apply more than 0.2 lb ai per acre per season. Do not feed or graze livestock on treated fields.
dimethoate	21 days. Do not feed or graze within 5 days of last application.
*Furadan 4F	21 days. Do not make more than two foliar applications per season. Do not graze or feed foliar-treated forage to livestock or cut for silage or hay.
*Lorsban 4E	28 days. Do not apply more than 6 pints of Lorsban-4E per acre or 3 pounds of chlorpyrifos (active ingredient) per acre per season. Do not apply last two treatments closer than 14 days apart. Do not allow livestock to graze in treated areas or otherwise feed treated soybean forage, hay, and straw to meat or dairy animals.
*Mustang	21 days. Do not make applications less than 7 days apart. Do not apply more than 0.3 pound active ingredient per acre per season. Do not graze or harvest treated soybean forage, straw, or hay for livestock feed.
*Penncap-M	20 days. Do not make more than two applications per season. Do not apply more than 6 pints/A per year.
*Pounce 3.2EC	60 days. Do not apply more than 0.4 pound active ingredient per acre per season. Do not graze or feed soybean forage or hay.
Sevin XLR Plus	21 days. Repeat applications as necessary up to a total of four times but not more often than once every 7 days. Do not apply more than a total of 6 quarts per acre per crop. Do not apply within 14 days of grazing or harvest for forage.
Tracer 2SC	28 days. Do not apply more than 6 ounces of Tracer (0.186 pound of spinosad) per acre per year. Do not feed treated forage or hay to meat or dairy animals.
*Warrior	45 days. Do not apply more than 0.06 lb ai (0.48 pt)/A per season. Do not graze or harvest treated soybean forage, straw, or hay for livestock feed.

* Use restricted to certified applicators.

Soybeans sprayed with an insecticide should not be harvested before the preharvest interval indicated on the label. It's better to leave the soybeans in the field for a while than to flirt with the possibility of significant penalties.

Note: A program focused on bean leaf beetles and soybean diseases will be delivered via Latitude Bridge from campus to sites around the state sometime during the winter. Mike Gray, Dean Malvick, and I will direct the program from campus, and Marlin Rice (entomologist) and John Hill (virologist) will participate from Ames, Iowa. We'll announce the specifics about the program in a future issue of the *Bulletin*.—*Kevin Steffey*

Corn Rootworm Larval Injury Following Wheat Observed in Lake County

How far north has the variant western corn rootworm spread in Illinois? This question is often raised by producers located in northern Illinois who want to know how much longer they can depend on crop rotation as an effective management tool to prevent larval injury by corn rootworms. On October 1, Ellen Phillips, Crop Systems Extension Educator; John Ishmael, Pioneer Hi-Bred International Inc.; and I spent the day examining corn roots in a few first-year cornfields located in Lake County, Illinois. In one field, the level of root injury was impressive in corn that had been planted after soybeans. It was common to find roots with two or three nodes of roots completely destroyed. The level of lodging was so severe that the producer was unsure whether or not the field should even be harvested.

In addition to first-year corn rootworm injury after soybeans, we confirmed severe rootworm larval damage to a cornfield that had been planted after wheat. At recent field meetings in northern Illinois, some producers have asked whether or not corn planted after wheat would be susceptible to corn rootworm larval injury. Although we need to examine this question more thoroughly, it appears that wheat is not immune to egg laying by western corn rootworm adults. Our experiments in Urbana indicate that western corn rootworm females will lay eggs in alfalfa (especially late in the summer) and also oat stubble. So it seemed plausible that females also would lay eggs in wheat stubble. The extreme root injury to corn following wheat in this Lake County field would appear to add weight to this suspicion.

These observations indicate that producers as far north as Lake County can no longer rely on crop rotation as an effective management tactic to prevent corn rootworm larval injury. As we've discussed many times, the use of Pherocon AM traps in soybeans is recommended to determine the likelihood of western corn rootworm larval injury in first-year cornfields.

It appears that wheat and alfalfa fields also should be scouted for western corn rootworm adults in determining

the need for a soil insecticide application to rotated corn. If soybeans, wheat, and alfalfa will not be scouted for corn rootworm adults and producers intend to plant corn following any of these crops, they should assume that their rotated corn is susceptible to economic injury by western corn rootworm larvae. This means that the use of soil insecticides on rotated corn will continue to escalate.

It seems likely that in the coming years, reports of first-year corn rootworm injury will increase throughout northern Illinois and southern Wisconsin. No wonder interest in the commercialization of transgenic corn rootworm hybrids has reached such a high level in some areas of Illinois.—*Mike Gray*

Annual Fall Survey of European Corn Borers Is Under Way

As has occurred every year (except 1997 and 1998) since the mid-1940s, Extension entomologists are coordinating the annual fall survey of European corn borers in Illinois. Several Extension and research specialists and Extension educators began sampling cornfields in September, and the survey will continue until all designated counties have been sampled. It's possible that someone is surveying in your area as you read this article (unless you're reading at night—at least we assume no one samples at night).

The protocol for these surveys is fairly simple. Within each county designated for surveying, the surveyor drives along highways and county roads, randomly selecting 10 fields that fairly represent the different areas of the county. The surveyor walks into the field at least 50 paces beyond the turn rows and counts off 25 consecutive plants for examination. All plants infested with European corn borer larvae are counted and recorded. Two of the infested plants are split in half with a knife, and all borers are counted and recorded. The surveyor also notes the numbers of stalks broken above and below the ear and the number of ears dropped on the ground. The percentage of infestation and average number of borers per infested plant are determined for each field. After all 10 fields have been sampled, the percentage of infestation and average number of borers per plant are determined for the county. The county data are used to determine averages for crop reporting districts.—*Kevin Steffey*

WEEDS

Be Vigilant About Herbicide Persistence

Adverse growing conditions were common across much of Illinois during the 2002 growing season. Precipitation, at least in many areas, was not as plentiful or as timely as producers had hoped for. The dry soil conditions contributed to problems not only this season but may also impact rotational crops in 2003 due to persistence of herbicide residues in the soil. For producers intending to plant wheat this fall, please remember that many corn and soybean herbicide labels have rotational intervals for wheat as well. Tables 2 and 3 are reproduced from the 2002 *Illinois Agricultural Pest Management Handbook* and contain information on corn and soybean herbicide rotational intervals.

Herbicide persistence is influenced by a number of factors. Keep in mind that some of these factors influence certain herbicide chemical families more than others. Within a given herbicide chemical family, member herbicides can vary in their persistence due to differences in their chemical structures. For example, Harmony GT (thifensulfuron) and Classic (chlorimuron) are both in the sulfonylurea herbicide family, but Classic is inherently more persistent in the soil than Harmony GT. Rotational crop-planting intervals range from 0 to 45 days after application of Harmony GT, while the range is 3 to 30 months for Classic.

Timing of application also can be an influence if rotational crop injury occurs. Planting delays frequently lead to delayed herbicide applications, and late-season "rescue" applications may cause delays in planting the rotational crop in order to satisfy the rotational interval on the respective herbicide label.

Soil factors, such as organic matter content, temperature, pH, texture, and moisture, are some of the most critical factors that influence herbicide persistence. The relative importance of each factor can vary by herbicide chemistry, and these factors often interact to influence herbicide degradation. Soil organic matter and fine-textured soil particles can tightly adsorb herbicide molecules, reducing the availability for the various degradation processes and thus increasing persistence. Generally, herbicide persistence is favored in higher organic matter soils (2.5% or greater) compared with low organic matter soils. Soil pH above 6.8 to 7.0 can reduce the degradation of many sulfonylurea and triazine herbicides, while very low pH can reduce the degradation of imidazolinone herbicides, increasing the potential for carryover.

Soil moisture conditions deserve additional consideration. In general, dry soil conditions (much like what many areas of Illinois have experienced this year) reduce the rate of herbicide degradation. In particular, herbicides that are degraded by microbial processes are potential candidates for enhanced persistence during dry conditions since the microbial degradation process requires moisture. Dry soil conditions also can increase the amount of herbicide adsorbed to soil colloids, reducing its availability for degradation. Some herbicide rotational intervals are increased if a specified amount of precipitation is not received by a certain calendar date. Rotational intervals of imazaquin, prosulfuron, and clopyralid-containing products can be increased under low-precipitation environments.

Table 2. Corn–sorghum herbicide recropping restrictions, months.

Herbicide[a]	Comments	Field corn	Sorghum	Wheat	Oats	Rye	Alfalfa	Clover	Soybeans
Acetochlor and its premixes									
Degree, Harness	acetochlor	AT	NY	4	2Y	2Y	2Y	2Y	NY
Degree Xtra, Harness Xtra 5.6L	w/atrazine	AT	NY	15	2Y	2Y	2Y	2Y	NY
DoublePlay	w/EPTC	AT	NY	4	2Y	2Y	2Y	2Y	NY
FulTime	w/atrazine	AT	NY	15	2Y	2Y	2Y	2Y	NY[b]
Surpass, TopNotch	acetochlor	AT	NY	4	2Y	2Y	2Y	2Y	NY
Atrazine and its premixes; simazine									
AAtrex, Atrazine	pH < 7.2	AT	AT	NY	2Y	NY	2Y	2Y	NY[b]
Bicep II Magnum	w/metolachlor	AT	AT[c]	NY	2Y	NY	2Y	2Y	NY[b]
Bicep Lite II Magnum	w/metolachlor	AT	AT[c]	NY	2Y	NY	2Y	2Y	NY[b]
Buctril + Atrazine	w/bromoxynil	AT	AT	NY	2Y	NY	2Y	2Y	NY
Bullet	w/alachlor	AT	AT[c]	NY	2Y	NY	2Y	2Y	NY[b]
Guardsman Max	w/dimethenamid-P	AT	AT[c]	NY	2Y	NY	2Y	2Y	NY[b]
Laddok S-12	w/bentazon	AT	AT	15	15	15	18	18	NY
LeadOff	w/dimethenamid	AT	AT[c]	NY	2Y	NY	2Y	2Y	NY[b]
Liberty ATZ	w/glufosinate	AT	AT	NY[b]	2Y	NY[b]	NY[b]	NY[b]	NY[b]
Marksman	w/dicamba	AT	AT	10	2Y	10	2Y	2Y	NY[b]
Princep, simazine	simazine	AT	NY	NY	2Y	NY	2Y	2Y	NY
ReadyMaster ATZ	w/glyphosate	AT	AT	NY	2Y	NY	2Y	2Y	NY[b]
Flumetsulam and its premixes; clopyralid									
Hornet WDG	w/clopyralid	AT	12	4	4	4	10.5	26[Fba]	10.5[e]
Python	flumetsulam	AT	12	4	4	4	4	26[Fba]	AT
Stinger	clopyralid	AT	10.5	AT	AT	AT	10.5	18	10.5[e]
Isoxaflutole, flufenacet, and premixes									
Balance PRO	isoxaflutole	AT	6	6	6	6	6	6	6
Epic	isoxaflutole + flufenacet	AT	12	12	12	12	12	12	6
Define	flufenacet	AT	12	12	12	12	12	12	AT
Axiom	flufenacet + metribuzin	AT	12	12	12	12	12	12	AT
Axiom AT	flufenacet + metribuzin + atrazine	AT	NY	2Y	2Y	2Y	2Y	2Y	NY?
Mesotrione									
Callisto	mesotrione	AT	NY	120d	120d	120d	NY	18	NY
Imazethapyr and its premixes									
Lightning	w/imazapyr	8.5[f]	18	4	18	4	9.5	40[Fba]	9.0
Pursuit	imazethapyr	8.5[f]	18	3	18	4	4	40[Fba]	AT
Pursuit Plus	w/pendimethalin	8.5	18	4	18	9.5	9.5	40[Fba]	AT
Sulfonylureas and their premixes									
Accent	nicosulfuron	AT	10[d]	4	8	4	10	10	0.5
Accent Gold	nicosulfuron + rimsulfuron + Hornet	AT	12	4	8	4	10.5	26[Fba]	10.5[e]
Basis	thifensulfuron + rimsulfuron	AT	10	4	8	18	10	18	0.5
Basis Gold	nicosulfuron + rimsulfuron + atrazine	AT	10	10	18	10	18	18	10[b]
Beacon	primisulfuron	0.5	8	3	8	3	8	18	8

Table 2. Corn–sorghum herbicide recropping restrictions, months (cont.) .

Herbicide[a]	Comments	Field corn	Sorghum	Wheat	Oats	Rye	Alfalfa	Clover	Soybeans
Sulfonylureas and their premixes (cont.)									
Celebrity Plus	dicamba + nicosulfuron + diflufenzopyr	0.25	10[d]	4	8	4	12	12	4
NorthStar	primisulfuron + dicamba	0.5	8	3	8	3	8	18	8
Permit	halosulfuron	1	2	2	2	2	9	9	9
Spirit	primisulfuron + prosulfuron	1	10	3	3	3	18[g]	18[g]	10–18[h]
Steadfast	nicosulfuron + rimsulfuron	AT	10[d]	4	8	4	12	12	0.5
Others									
Aim	carfentrazone	30d	30d	30d	30d	30d	30d	30d	30d

[Fba] = field bioassay needed (see label); NY = next year; 2Y = second year; AT = anytime; d = days; NY? = Injury may occur if planted next spring.

[a]Other corn herbicides have no significant recropping restrictions, but Banvel, Clarity, Eradicane, and 2,4-D have replanting limits for soybeans.

[b]2Y (second year) if applied after June 10 with high atrazine or Liberty ATZ and after July 1 with Basis Gold.
[c]Concep or Screen seed protectant needed.
[d]18 months if pH ≥7.5.
[e]18 months if <15 inches of rainfall received *and* if soil has <2% organic matter.

[f]Clearfield (CL, formerly IMI) designated corn hybrids may be replanted anytime.

[g]Spirit: pH <7.8, applied before July 1, rainfall >12 inches within 5 months and >1 inch within 4 weeks of application.

[h]I-70 to I-80: Spirit 10 months. Above I-80: Spirit 18 months.

Table 3. Soybean herbicide recropping restrictions, months.

Herbicide	Comments	Field corn	Sorghum	Wheat	Oats	Rye	Alfalfa	Clover	Soybeans
Chlorimuron and its premixes									
Canopy[a]	w/metribuzin	10	12	4	30	4	10	12	AT
Classic	high chlorimuron	9[b]	9[b]	3	3	3	12[b]	12[b]	AT
Synchrony STS	w/thifensulfuron	9[b]	9[b]	3	3	3	12[b]	12[b]	AT
Cloransulam and flumetsulam									
FirstRate, Amplify	cloransulam	9	9	3	30[Fba]	30[Fba]	9	30[Fba]	AT
Python	flumetsulam	AT	12	4	4	4	4	26[Fba]	AT
Imazaquin and its premixes (Region 3 = north of Peoria)									
Backdraft SL—									
Region 2[c]	w/glyphosate	9.5[d]	11	4	11	18	18	18	AT
Backdraft SL—									
Region 3[c]	w/glyphosate	18[d]	11	18	18	18	18	18	AT
Scepter—Region 2[c]	imazaquin	9.5[d,e]	11[e]	3[e]	11[e]	18	18	18	AT
Scepter—Region 3[c]	0.5 rate, post	NY[d]	11	Fall[e]	NY[e]	18	18	18	AT
Scepter—Region 3[c]	imazaquin	18	11	18	18	18	18	18	AT
Squadron—Region 2[c]	w/pendimethalin	9.5[d,e]	11[e]	4[e]	11[e]	18	18	18	AT
Imazethapyr and its premixes									
Extreme	w/glyphosate	8.5[f]	18	3	18	4	4	40	AT
Pursuit	imazethapyr	8.5[f]	18	3	18	4	4	40	AT
Pursuit Plus	w/pendimethalin	8.5	18	4	18	9.5	9.5	40	AT
Metribuzin and its premixes									
Axiom	w/flufenacet	AT	12	12	12	12	12	12	AT
Boundary	w/*S*-metolachlor	8	12	4.5	12	12	4.5	12	AT
Domain	w/flufenacet	1	12	12	12	12	12	12	AT
Sencor	metribuzin	4	12	4	12	12	4	12	4
Sulfentrazone alone or plus chlorimuron									
Authority	sulfentrazone	10	10	4	4	4	12	18	AT
Canopy XL[a]	w/chlorimuron	10	10	4	30	4	12	18	AT
Command Xtra	w/clomazone	10	10	12	16	16	18	18	AT
Gauntlet	w/cloransulam	10	10	4	12	12	12	30[Fba]	AT
Other active ingredients									
Command 3ME	clomazone	9	9	12	12[g]	12[g]	12[g]	12[g]	AT
Flexstar, Reflex	fomesafen	10	18	4	4	4	18	18	AT
Pendimax/Prowl	pendimethalin	NY	NY	4	NY	NY	NY	NY	AT
Raptor	imazamox	8.5	9	3	9	4	9	18	AT
Treflan	trifluralin	NY	12	NY	12	12	NY	NY	AT
Valor	flumioxazin	2[h]	2[h]	2[h]	12	4	12	12	AT

[Fba] = field bioassay needed (see label); NY = next year; 2Y = second year; AT = anytime.
[a]Midwest states' rate, soil pH <6.8.
[b]Extend 2 months if applied after August 1.
[c]See label for exact area and Region 3 (northern Illinois) full-use rate.
[d]10- to 15-inch annual rainfall is required, or use CL-corn hybrids.
[e]15 months if Scepter/Scepter sequence, but 9.5 months or NY for CL-corn hybrids.
[f]Clearfield (CL, formerly IMI) designated corn hybrids may be replanted anytime.
[g]Cover crops may be planted anytime, but stand reductions may occur. Do not graze or harvest for forage for at least 9 months.
[h]30 days following applications of 2 ounces per acre or less.

What do you do if you are concerned about herbicide carryover and its potential adverse effects on next year's crop? Bioassays and laboratory analysis are methods that can assist you in determining if herbicide residues are high enough to potentially injure the rotational crop you intend to plant. For more information on herbicide persistence and a description of how to conduct these types of analyses, please refer to Chapters 14 and 15 in the 2002 *Illinois Agricultural Pest Management Handbook.—Aaron Hager and Christy Sprague*

Getting a Start on Weed Control in the Fall

Over the past couple of years, the practice of applying herbicides in the fall to control winter annual weeds has gained widespread popularity. This practice started in fall 1999 in Illinois, with only a few products labeled for fall applications. Since 1999 a number of products have been added to the fall-applied arsenal (Table 4). With this increase in products has come an increase in interest from many producers. This interest arises mostly from growers who have had a difficult time controlling winter annual and perennial weeds in no-till fields in the spring. Winter annual weeds, such as purple deadnettle, henbit, chickweed, horseweed (marestail), and a number of mustard species, can form a dense weed mat that can be difficult to control with spring burndown herbicides. These difficulties can arise from insufficient spray coverage, fluctuating spring temperatures, and timeliness of the application due to uncooperative spring weather.

A number of potential benefits may be realized from controlling winter annual and simple perennial weeds in the fall. Controlling these weeds in the fall prevents dense mats of winter annual weeds that can physically interfere with planting and tillage, reduces vegetation where insects may harbor, and potentially allows for earlier planting due to increases in soil drying and warming. In addition, controlling these weeds in the fall prevents them from producing seed, thereby decreasing the soil seed bank and helping reduce future problems with these species. Fall control of simple perennials, such as dandelions and white cockle, is much more effective than controlling these weeds in the spring. In the fall, food reserves in these perennials are being moved to the roots; when a systemic herbicide is applied, that herbicide moves with the food reserves to the roots and can cause complete control of the roots. Additionally, higher rates of some translocated herbicides (i.e., 2,4-D) can be used in the fall, allowing for greater control of perennial weeds such as dandelion.

Three basic approaches to fall herbicide applications follow: (1) apply a herbicide with soil-residual activity before most of the winter annual weed species germinate; (2) apply a nonresidual herbicide, such as glyphosate, 2,4-D, or Gramoxone, to emerged winter annual, biennial, and perennial weeds while they are still relatively small or in the rosette stage; and (3) use a combination of the first two approaches. All of these approaches strive to reduce the amount of total vegetation that needs to be dealt with in the spring prior to planting, possibly even eliminating the need for a burndown herbicide application. Although these approaches sound good in theory, the actual end results may or may not be as good as expected in large part due to uncertain weather conditions. During the past 3 years, we have conducted several experiments looking at fall herbicide applications for winter annual weed control, which are summarized below.

During fall 1999 and 2000, we conducted an experiment at four locations to examine the efficacy of fall-applied soybean herbicides. The locations we selected were Dekalb, Urbana, Brownstown, and Altamont, which represented a good north-to-south gradient as well as some diversity in weed species. At these four locations, fall herbicide applications were made in mid-November. The herbicides that we included were Canopy (3.0 and 7.0 oz/A), Canopy XL (2.5 and 6.8 oz/A), and Sencor (4.0 and 10.0 oz/A), all with and without glyphosate + 2,4-D. Glyphosate (Roundup Ultra) + 2,4-D (1.5 pt + 0.5 pt) was also applied alone to see how this treatment would work without a residual herbicide. As we expected at the outset, results with these fall applications were quite variable at soybean planting.

What we found was that these fall herbicide applications seemed to be more suited to the southern regions of the state where winter annual weed growth was much more prevalent. Also in many cases, the higher rates of these herbicides outperformed the lower rates; however, this outcome could be overcome with the addition of glyphosate and 2,4-D to these treatments. In comparing just the residual herbicide treatments, Canopy at both rates and the high rate of Canopy XL were the most consistent at controlling common chickweed, annual bluegrass, purple deadnettle, cressleaf groundsel

Table 4. Herbicides labeled for fall applications prior to corn and soybean planting.

Corn (residual activity)	*Soybean (residual activity)*	*Corn and soybean (no residual)*
Princep	Canopy	Gramoxone
Basis	Valor	glyphosate (many)
Valor	Sencor	2,4-D
Python	Python	
Sencor	Canopy XL + Express	
	Backdraft	
	Extreme	

(butterweed), and shepherd's-purse. The addition of glyphosate and 2,4-D improved winter annual weed control for a number of these treatments. Glyphosate + 2,4-D without a residual herbicide provided good control of common chickweed and shepherd's-purse; however, at soybean planting, summer annual weeds (i.e., common lambsquarters and ragweed spp.) flourished in these plots from lack of residual activity and lack of winter annuals (i.e., chickweed) to suppress summer annual weed growth.

In fall 2001 we initiated a new set of experiments that focused on the timing of fall herbicide applications. One experiment was set up to examine residual control of summer annual weeds from fall herbicide applications based on soil temperatures ranging from 30°F to 60°F. The second experiment examined winter annual weed control from fall herbicide applications based on air temperatures ranging from 25°F to 65°F. Based on one year's data, herbicide applications with soil temperatures less than 55°F had little to no effect on summer annual weed control. Conversely, air temperature did have an effect on initial common chickweed control with glyphosate + 2,4-D and Canopy XL + Express. However, by 30 days before planting, no difference in common chickweed control based on air temperature existed. Even though there were very little differences in weed control based on application timing this year, we will be repeating these experiments in fall 2002.

In addition to these experiments, we also have conducted a number of research trials examining fall herbicide treatments that manufacturers are currently promoting. Table 5 compares some of the more popular fall treatments for weed control in corn, and Table 6 compares fall treatments in soybean. Both of these experiments were conducted at Brownstown, and applications were made in mid-November 2001. The weed-control ratings listed in these tables are at corn or soybean planting.

Fall herbicide treatments can be extremely effective tools in managing winter annual, biennial, and simple perennial weeds. So how do you know if fall herbicide applications are suitable for your farming operation? These applications are most effective on fields where these weeds have been a problem in the past. If spring herbicide treatments have been effectively controlling these species and they do not appear to be increasing, little to no benefit may be gained from fall herbicide applications in these fields. In addition, even though winter annual weeds may be controlled by fall applications, under certain conditions a spring burndown treatment may still be needed.—*Christy Sprague, Aaron Hager, and Ryan Hasty*

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:

Table 5. Winter and summer annual weed control from fall applications of several herbicides at corn planting.

Herbicides[a]	*Rate*	*C. chickweed*	*Horseweed*	*Carolina foxtail*	*C. ragweed*
		---------- *% control* ----------			
Princep 4L	1 qt	99	90	91	55
Basis[b]	0.5 oz	99	78	90	60
Basis[b]	0.33 oz	99	90	93	45
glyphosate[b,c]	0.56 lb ae	99	90	88	0
Sencor	5.33 oz	99	83	82	50
Valor + Atrazine 4L	2 oz + 1 qt	99	91	91	81
2,4-D alone	1 pt	62	88	47	0
Gramoxone Max + Princep 4L	1.3 pt + 1 qt	99	91	93	60
$LSD_{(0.05)}$		-------- 2 --------	-------- 10 --------	-------- 14 --------	-------- 23 --------

[a] All herbicide treatments were applied with 1pt/A of 2,4-D and COC at 1% v/v.
[b] Spray grade AMS was added at 17 lb/100 gal.
[c] No COC was added to this treatment, and the glyphosate rate is equivalent to 20 fl oz of Roundup UltraMax and 1.5 pt of Touchdown or Glyphomax Plus.

Table 6. Winter and summer annual weed control from fall applications of selected herbicide treatments at soybean planting.

Herbicides[a]	Rate	C. chickweed	Horseweed	Shepherd's-purse	C. ragweed
		% control			
Canopy XL + Express	4.5 + 0.2 oz	99	99	99	95
glyphosate[b,c]	0.56 lb ae	99	99	99	0
Valor	2.5 oz	96	99	99	60
Canopy	4 oz	90	99	99	99
Backdraft SL[b,d]	2.5 qt	99	99	99	83
Extreme[b,d]	3 pt	99	99	99	38
Python + Sencor	1 + 4 oz	96	99	99	28
Gramoxone Max[e] + Sencor	1.5 pt + 4 oz	99	99	96	0
$LSD_{(0.05)}$		5	NS	2	8

[a] All herbicide treatments were applied with 1pt/A of 2,4-D and COC at 1% v/v.
[b] Spray grade AMS was added at 17 lb/100 gal.
[c] No COC was added to this treatment, and the glyphosate rate is equivalent to 20 fl oz of Roundup UltraMax and 1.5 pt of Touchdown or Glyphomax Plus.
[d] An NIS at 0.25% v/v was added to the spray mixture instead of COC.
[e] This treatment did not contain 2,4-D.

- 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

Harvest began last week and was in full activity until widespread rainfall occurred the evening of October 1. Corn silage harvest is nearly complete. Although not widespread, poor cornstalk quality has been reported throughout the region. Producers are encouraged to inspect cornfields and target susceptible fields for harvest. Some winter wheat has been seeded.

Soybean cyst nematode screening clinics, sponsored by U of I Extension, have been scheduled for November 18 in LaSalle County and November 19 in Marshall County. Interested participants are encouraged to contact the host Extension unit office for program locations and times.

West-Central Illinois

Harvest is well under way and producers have been pleased with corn yields of early-planted corn. We have received documented reports of yields as high as 220 bushels per acre. On average, yields of early-planted corn thus far have averaged from 150 to 170 bushels per acre in many areas, with the exception of areas in the eastern part of the region where wind damage is evident. Depending on location and maturity rating, later-planted corn yields will be somewhat more variable and less impressive. Infestations of corn earworm and second-generation corn borer were prevalent in the corn crop this year. Stalk quality also appears to be less than desired in many parts of the region, most likely a result of stalk rot diseases, shallow root systems, and high corn borer numbers. Many producers have begun to shred corn stalks in harvested fields.

Soybean harvest did not begin until about the last 10 days. Yields are variable with reports of anything from 15 to 60 bushels per acre. Some producers began drilling wheat this past week.

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