2005

Crop Watch No. 2005-4, April 1, 2005

Lisa Brown Jasa
University of Nebraska-Lincoln, ljasa@unlnotes.unl.edu

CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

University of Nebraska Lincoln

No. 2005-4, April 1, 2005

Give proper credit for legumes, cut nitrogen inputs

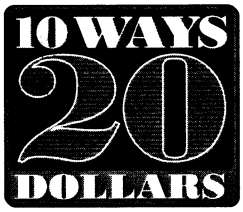
Research at the University of Nebraska and other land grant colleges has clearly demonstrated that producers can safely reduce their nitrogen input for corn following a legume crop such as soybeans. This soybean nitrogen credit is not due to increased nitrate nitrogen supplied or fixed by the soybean plant. In fact, soybean production results in a net removal of nitrogen from the system.

The primary mechanism for the nitrogen credit from soybeans is reduced immobilization of soil-derived nitrogen relative to decomposing corn residue. Because of the low C:N ratio, soybean crop residues will decompose faster than cereal crops such as corn or wheat stubble. This faster decomposition will release more nitrogen to the soil, which consequently will be available to the new crop in the next year.

This week: Focus on Corn

Add profit of $9.90 - $26.40 per acre

These numbers are based on the average savings of 45 pounds of nitrogen following soybeans and 120 pounds of nitrogen following alfalfa with a nitrogen cost of $0.22 per pound.



University of Nebraska recommendations for corn following soybeans indicates that there can be a credit of 45 pounds of nitrogen per acre unless the soybean yield was less than 30 bushels per acre. For yields less than this, one pound of nitrogen per bushel harvested can be credited to that field.

Nitrogen recommendations for corn following alfalfa can be reduced 120-150 lb on fine textured soils and 70-100 lb on sandy soils, depending on the alfalfa stand. Use the higher end of the range when there are more than four alfalfa plants per square foot and the lower end of the range when there are fewer than 1.5 plants per square foot.

Nebraska research

From 1988 to 1991 UNL soils specialists studied irrigated corn following soybeans in the South Central District. In total, the research covered 19 site/years. Across all site/years, a significant yield increase due to nitrogen was found only with the first 40 pounds of nitrogen applied per acre on corn following soybeans. The yields averaged 172 bushels per acre with a range of 97 bushels to 221 bushels per acre. The results of this study, along with others, led to the recommendation of a 45 pound nitrogen credit for corn following soybeans.

In 2003 and 2004 under irrigated cropping systems, UNL Cooperative Extension Educators and producers in York, Hamilton and Seward counties compared production using University of Nebraska nitrogen recommendations (assuming 3.0 ppm nitrogen carryover and using 45 pound soybean credit) to two other methods:

1) using actual residual soil nitrogen and crediting 45 pound soybean credit;

2) crediting actual residual soil nitrogen and a credit of 75 pounds nitrogen for the legume credit.

Results from these nine replicated research plots over the two years demonstrated that the UNL recommendations (assuming 3.0 ppm nitrate nitrogen carryover and 45 lbs soybean nitrogen credit on irrigated fields) are more than adequate to meet the yield goal

(Continued on page 33)

Ag briefs

Paul Hay, Extension Educator in Gage County: Early fertilizer work on pastures and wheat is done, oats are planted, and numerous anhydrous applications have been made. Lots of no-till farmers have filed applications with the Iowa Farm Bureau for carbon credit payments. Farmers are learning more about the Conservation Security Program (CSP) at area meetings and sign-up in the Big Blue River Drainage area in southeast Nebraska has begun.

Doug Anderson, Extension Educator in Fillmore, Nuckolls and Thayer counties: Field preparations are underway in Nuckolls and Thayer counties -- stalk chopping and some discing. We had a couple inches of very slow rain last week so it will be a while before they can get back in the fields. Soil temps are still pretty cool, but will warm up nicely if the sun keeps shining. (To check on soil temperatures in your area, see daily updates on the *CropWatch Soil Temperature* Web page at *citnews.unl.edu/cropWatch/soilTemperature.html*)

Randy Pryor, Extension Educator in Saline County: Almost an inch of rain fell last week with the largest rainfall in one day only 0.55 inch. Many producers took advantage of dry, open conditions before the rain and applied fertilizer.

We had a large attendance of 200 landlords or operators at the area Conservation Security Program meeting in Wilber. This was the first of a series of meetings being held in the Upper Big Blue and Lower Big Blue Natural Resources District (see the March 25 *CropWatch* for sites).

We are in one of 220 watersheds in the nation eligible this year for CSP payments as a part of the 2002 Farm Bill. It may be coming to your watershed next year so it is important to note what we have learned. (This should be of particular interest to those who have put into place considerable conservation practices and have implemented no-till or ridge plant techniques in your operation.)

Make sure you have soil tests from within the last three years in all fields and follow UNL recommendations for your fertilizer applications. Having records all fertilizer and pesticide application amounts for the two years prior to the CSP application is one key to a successful application. For grazing lands, certain cattle records are required. To see a suggested CSP record inventory, go to our county Extension Web site at *www.saline.unl.edu* This sheet is requested when you make a CSP application.

The site also includes a prescreening sheet that has 10 questions and a link to the self-assessment workbook, which must be completed. Contact your local NRCS office to make an appointment for signup. Sign-up for land in our watershed is March 28 to May 27.

Dewey Lienemann Extension Educator in Webster and Clay: We had a good "soaking" rain this past week with more than 2 inches reported in some places and an average of about 1 1/2 inches. This is across a pretty good portion of south central Nebraska. Certainly not a "drought buster" but a nice addition to the soil profile. I didn't see any of it run off — which is not good for the ponds and dams but is good for the crop ground and grasses in our pastures.

The draws and bottom lands of our pastures are starting to green up as are the alfalfa fields. Of course some, if not most, of the green in pastures is probably downy brome, wild oats or a rash of other names we have for it out here. I am starting to see a lot of common mullein rosettes in the pastures (not unexpected).

Wheat is starting to really come out of the winter funk. Some wheat fields do still have a yellow look and withered upper leaves. I really think the upper leaves are a result of winter kill and the yellow more of an environmental/nutrient problem than disease. Fertilizer has been applied to wheat, cool season pastures, and of course corn and soybean ground. There seems to be, with the current prices of fertilizer, a more conservative approach to what

(Continued on page 33)

CROP WATCH

cropwatch.unl.edu

Crop Watch is published from March to November by Cooperative Extension and Communications and Information Technology in the University of Nebraska Institute of Agriculture and Natural Resources, PO Box 830918, 108 Agricultural Communications Bldg., UNL, Lincoln, NE 68583-0918. To order a print subcription or to change your address, write to ***Crop Watch*** at the above address or call (402) 472-7981. The newsletter also is available on the Web at **cropwatch.unl.edu**

Lisa Jasa, Editor; Email: ljasa1@unl.edu

Legume credits *(Continued from page 31)*

demand for nitrogen. There appears to be room to give greater credit to the soybean residue with little risk of yield reduction and good potential for nitrogen savings.

All three recommendations exceeded producer yield goals of 205 bushels per acre. Following the previous soybean crop, residual soil nitrate levels in the nine plots varied from 5.3 to 9.0 ppm and averaged 6.4 ppm, well above the 3.0 ppm assumed in the UNL formula.

In fall 2004 we collected several deep soil samples following irrigated soybeans in the York County area and the residual nitrogen in the three foot profile varied from 3.5 to 9.5 ppm and averaged 6.3 ppm.

Gary Zoubek
Extension Educator

Nitrogen rate and yield averaged over two years for three methods of soil and legume credit.

Method	N Rate lbs/ac	Yield bu/ac
UNL recommendation[1]	142	219
Actual soil N[2]	116	219
1 lb/bu credit[3]	82	214

[1]UNL assumes 3 ppm soil Nitrate-N, credit soybeans 45 lbs/ac N.
[2]Soil N based on 36-inch deep sample, credit soybeans 45 lbs/ac N.
[3]Soil N based on 36-inch deep sample, credit soybeans 1 lb N/bu of previous yield.

Soil science resources

- **Nutrient Management for Agronomic Crops in Nebraska,** 176-page comprehensive guide, EC155
- **Soil Fertility and Nutrient Management** Web site at *soilfertility.unl.edu/*
- **Soils Home Study Course** (EC152), also at *saline.unl.edu/soils.htm*
- **CropWatch: Focus on Nitrogen** Web site at *cropwatch.unl.edu/focusnitrogen.htm*

Ag briefs *(Continued from page 32)*

and how much is being put on.

I am seeing more no-till this year in the southern tier of counties — but still see quite a bit of conventional pre-plant tillage on irrigated ground north of us.

Most farmers I've talked with aren't too concerned about Soybean Rust and are most concerned with deficit irrigation in the Lower Republican basin. There seems to be quite a bit of interest in the EQIP and CREP programs in certain areas of our region. I find it also interesting that we have had several farmers with center pivots indicate an interest in irrigating grass to produce pounds of beef rather than bushels of corn or soybeans. That is especially heartening in the wake of hundreds if not thousands of acres of grassland which were converted to corn production in recent years.

Del Hemsath, Extension Educator in Dakota, Dixon and Thurston counties: A variety of farm/field activities are underway in northeast Nebraska. Dry fertilizer is being applied in some fields and manure in others. Some fields are showing winter annual green-up. Some grain is being moved to elevators and on-farm bins are being aerated. Pastures are turning green, there are a few areas where cattle have been put into early pastures. We received some precipitation the past week with snow and light rain.

Aaron Berger, Extension Educator in Kimball, Banner, and Cheyenne counties on range conditions in the southern Nebraska Panhandle: A dry, open winter combined with abnormally warm temperatures in the southern Nebraska Panhandle are causing concern as producers look at range conditions and potential forage production for the 2005 growing season. Significant moisture will be needed in April and May for normal levels of forage production on rangeland this season.

Due to the open winter, many producers have a surplus of hay. Feeding cattle two to three weeks longer and delaying pasture turnout will improve plant vigor and overall production of native range as compared to turning out on normal dates.

Producers should have a drought plan in place. It should outline decision point dates and possible options for feeding the cow herd should the warm, dry weather continue into spring and summer.

USDA's Nebraska Agricultural Statistics Service (March 28 report): Wheat condition rated 1% very poor, 5% poor, 35% fair, 47% good, and 12% excellent. This rating is virtually unchanged from a month ago and remains well above last year's condition of 35% good or excellent.

Oat planting was underway across the state with 17% seeded to date.

Hay and **forage** supplies were mostly adequate statewide.

Livestock, pasture and range report: Cattle and calves condition rated 8% fair, 61% good, and 31% excellent. Calving was 61% complete with calf losses rated average to below average.

Consider starter fertilizer for no-till corn

Early corn growth is often slowed by cool soil temperatures in no-till production systems. This temperature effect may be reduced through use of starter fertilizer and result in increased grain yield. Fourteen trials were conducted throughout eastern Nebraska in 2002 and 2003 to determine the effect of starter fertilizer on no-till corn yield under varying field conditions.

The average yield increase with starter fertilizer was 14 bushels per acre for irrigated corn. With dryland corn, often there was no yield increase. (Many of these fields were affected by drought during this period.) The results confirm the value of using starter fertilizer when soil water is adequate throughout the season.

The response was primarily to nitrogen and phosphorus in starter fertilizer. Including sulfur in the did not result in increased yield. In-furrow and over-the-row placement were as effective as 2x2 placement, and in-furrow placement resulted in higher yield when soil test phosphorus (Bray-P1) was less than 15 ppm. Responses were as likely on bottomland soils as on upland soils.

If fertilizer is placed near the seed, such as with in-furrow placement, the potential for salt damage to the seedlings needs to be considered. A conservative guideline is that the sum of the pounds-per-acre of nitrogen and potassium and one-half the pounds-per-acre of sulfur should not exceed five pounds for in-furrow placement.

Charles Wortmann
Extension Soils Specialist, UNL

Check alfalfa for winter injury

Alfalfa is starting to green up and grow in most areas. At least those plants that survived the winter.

Alfalfa usually comes through the winter in pretty good condition, so I rarely worry much about it. This year, however, some fields went into winter in weakened condition because of the dry summer. And, the lack of snow cover during some of the colder nights this winter may have permitted cold injury or enabled winter winds to dry out and kill exposed plants.

Evaluate alfalfa stands early this spring. For maximum yields older, dryland fields need 40 new shoots per square foot coming from 2 or 3 plants. If you find fewer than 30 shoots, new fields may need to be planted. Very productive sites, such as irrigated and sub-irrigated fields, should have at least 55 shoots per square foot from 4 to 6 plants. Consider making new plantings if these fields are thinner than 40 shoots. We tend to lose about one tenth of a ton in yield potential for every shoot below these numbers.

Check for these densities in several areas of your field when the early shoots are four to six inches tall. Since some shoots begin growing later than others, stands with enough plants but slightly low shoot density may be all right, especially if shoot height and distribution is fairly uniform. If plant density is low or shoot growth is not uniform, yields probably will be lowered.

Check your alfalfa stands soon. Then you will still have time to make any needed changes in your cropping plans.

Bruce Anderson
Extension Forage Specialist, UNL

Seeding alfalfa no-till

Most alfalfa plantings begin with a conventionally tilled and prepared seedbed, but with less crop residue remaining from last year in some fields and limited soil moisture, no-till might be a good option this spring.

There are some obvious advantages to seeding no-till, such as making fewer trips and saving time and fuel expenses. In addition, you'll reduce soil erosion No-till also conserves soil moisture, which may be the best reason of all this spring, and helps provide a firm seedbed for rapid seedling emergence. Finally, no-till will limit the number of new weed seeds near the soil surface.

Disadvantages to no-till include relying solely on clipping or postemergence herbicides for weed control. Fortunately, we have good postemergence herbicides available to control most weed problems. Also, ridges from prior row crops can interfere with uniform seeding and make fields rough for future haying operations. And finally, some drills do not work well for no-till seeding so equipment might limit your options.

If you can do it, though, no-till alfalfa offers several advantages. It works really well in bean stubble and almost as well in small grain stubble. No-till is a bit more difficult in corn and milo stubble, especially if there is much row ridging. To set the stage for success, be sure to kill any early weeds with Roundup or Gramoxone before planting and use a drill that places seed about one-half inch deep and then covers seed with soil using a good press wheel.

Bruce Anderson, Extension Forage Specialist, UNL

The April 8 *CropWatch* will feature information on the new Roundup Ready Alfalfa, expected to be released this summer.

'Insurance' often unnecessary

Avoid planting time treatments for cutworms

Cutworms generally are a rare problem in Nebraska row crops, particularly corn; however, if the right situation occurs, they can cause great damage to stands early in the growing season and sometimes into June. Every field should be scouted for cutworms soon after emergence to guard against stand loss, regardless of whether it has been treated with an insecticide or seed treatment.

Nebraska occurred in 1986. However, because of their cutting habits and the possibility that large numbers can be transported to Nebraska with favorable weather conditions, these cutworms have the most potential for causing a widespread problem.

Black cutworm moth flight can be detected from pheromone and light traps located across the state.

Black cutworm

Darksided cutworm

Early detection of a cutworm problem is essential because most cutting occurs within seven days of plant emergence. Every field should be checked for cutworm problems regardless of black cutworm trap counts.

Cutworms damage field corn somewhere in Nebraska each year. Several species of cutworms can attack corn. The severity and the area affected will vary greatly, depending on the species, previous crop history, and weather conditions. Cutworms that attack corn can be divided into two categories based on seasonal life cycles:

1) Black cutworms do not overwinter in Nebraska;

2) Dingy, claybacked, darksided, sandhills and other species overwinter as partially grown larvae in the soil.

Since black cutworms do not overwinter in Nebraska, they are dependent on spring weather conditions, primarily prevailing southerly winds, to bring them into our state. Nebraska is on the western edge of the black cutworm area of influence, and there is little chance of activity west of Hwy 183 in central Nebraska. We don't have black cutworm problems as often as they do further east in the Corn Belt. The last black cutworm "outbreak" that affected a large portion of eastern

The presence of moths in a trap only indicates **potential** problems and is no guarantee that extensive damage will occur. Trap counts are more useful in alerting growers and consultants as to when to start scouting. Moth flight can begin as early as April and continue through May.

Black cutworm moths prefer to lay eggs in green vegetation or heavy surface residue and seem to prefer legume (alfalfa or soybean) residue over corn residue. Late planted fields where winter annuals have been allowed to grow are also a concern. When weeds are destroyed mechanically or by herbicides, they will transfer feeding to emerging corn. With some late infestations, the corn will be too big for the cutworms to cut. In this case, the cutworms will burrow into the stalk just below the soil surface. The symptom is usually called "dead heart," since the newer leaves in the whorl will turn brown as the larvae reach the growing point.

This damage may be confused with wireworm damage. Wireworm damage usually occurs early in the season and involves seed damage, although in severe infestations they may bore into the corn plant.

Cutworms that overwinter as larvae generally prefer to lay eggs in the fall in green vegetation such as small grain stubble, legumes, rye, and pasture. The eggs hatch and the larvae feed on the vegetation before overwintering. In spring, after the previous crop is removed and the corn emerges, the cutworms will transfer their feeding activity to the corn. Recent experience has been that corn planted into alfalfa just killed in the spring has a larger potential for cutworm problems.

Usually tillage will not have a significant effect on cutworm

(Continued on page 36)

Cutworms *(Continued from page 35)*

populations. If fields are tilled before black cutworm migration, egg-laying may be limited in those fields. Cutworms already in the field may suffer some mortality by mechanical action, but there is no guarantee that tillage by itself will eliminate cutworm problems. Many cutworm problems have occurred in fields that have been tilled. Previous vegetation is probably the most important factor in cutworm potential.

It is extremely rare to experience cutworm problems in continuous corn. Corn residue is not a preferred egg-laying site. Potential problems in continuous corn may be the result of a previous year's late season flush of weeds or an interseeding of a fall cover crop such as rye, which might attract moths laying eggs in the fall.

Managing cutworms in corn

Several options exist for the grower who wants to manage cutworms in corn. Since a vast majority of corn acreage is not affected by cutworms, the most economically sound practice is to scout for cutworm damage as soon as the corn emerges and apply a rescue treatment if necessary. Generally, a rescue treatment should be considered if 5% (1 in 20) plants are damaged, cutting is observed and the worms are one inch or less in length.

Rescue treatments are effective in controlling soil cutworms. All postemergence sprays will give satisfactory control if applied in a timely manner. Insecticides registered for cutworm control are available on the Department of Entomology web site at *entomology.unl.edu/instabls/cutworms.htm.*

There is some use of planting time treatments for cutworm control. The use of granular soil insecticides and broadcasting or banding liquids has met with mixed success. In the case of black cutworms, the material may deteriorate before black cutworms migrate into an area. Planting time treatments may work better on cutworms that overwinter in the soil, since they are already present when treatment occurs. Excessively dry conditions may limit the activity of granular insecticides. The primary risk to using planting time treatments is economic. Since there is no way to know whether a field is or will be infested with cutworms, most "insurance" type treatments are applied when nothing is present and are an unnecessary expense.

The seed treatments Poncho and Cruiser are labeled for control and suppression, respectively. Under light infestations these products will hold up, but feeding damage will be observed since the killing is caused by systemic activity, occurring after the plants have been fed on. We have little data on control of overwintering species for these products. Since the overwintering larvae will be partially grown, possible significant damage may be observed. As stated earlier, continue to scout fields even if insecticides or seed treatments have been used.

Keith Jarvi, Extension Integrated Pest Management Northeast REC

Farm land values up nearly 11% on average

Strong farm income in 2004 helped drive average agricultural land values in Nebraska to their biggest increase in 16 years, according to the University of Nebraska's annual survey.

The value of Nebraska farmland rose an average of 10.9%, from $827 per acre to $917, in the year ending Feb. 1, according to preliminary results of the 2005 Nebraska Farm Real Estate Market Survey.

Over the last two years, the survey shows, the average value of agricultural land statewide has gone up more than 20%. The survey estimates Nebraska agricultural real estate is valued at nearly $45 billion, said Bruce Johnson, agricultural economist in the university's Institute of Agriculture and Natural Resources.

Johnson cited a "remarkable income year for most of Nebraska agriculture" as the driving force behind the sharp increase in agricultural land values.

"While every area of the state experienced upward value movements for most, if not all, of their land classes, the movement over the past year was highly variable," Johnson said.

Regionally, the largest gains occurred in eastern and southeastern Nebraska, with increases of 12% and 16.8%, respectively.

"While many factors may have been contributing, the fact that these areas experienced record crop yields in 2004 certainly gave the land market upward momentum," Johnson said.

More modest gains were reported in western and southern areas where multi-year drought conditions prevail. (See the March 25 on-line *CropWatch* for related tables at *cropwatch.unl.edu/archives*)

By land class, the largest increase -- about 15% -- was posted in the average value of nontillable grazing land, thanks to strong demand for pasture land driven by a robust cattle economy. Values of dryland cropland with no irrigation potential were highly variable, ranging from no reported change in the northwest to an 18% rise in the east. Dryland with irrigation potential also varied widely, with modest to no change in reported value in the west, where drought and well-drilling moratoriums block potential development.

IANR News Release

Techniques for early season weed control in corn

Warmer weather across much of the state has been tempting many producers to get those planters hooked up to the tractor. Of course, the warm weather means that weeds can't be far behind, especially the early germinators like lambsquarters, giant foxtail, velvetleaf, and sunflower.

Choosing a herbicide strategy to deal with weeds is not always an easy task. There are many options to consider. Factoring in the economics such as herbicide costs, fuel and time, combined with biological and environmental factors makes the job tough enough; however, when you consider that within that environment, you include weed species spectrum, soil type, organic matter, herbicide efficacy, herbicide restrictions, annual precipitation, precipitation at time of application, and the ability to make a timely application, it is just not an easy decision. Even when you consider all these factors, often there's still no perfect choice.

Corn /weed competition

All weeds are not created equal. Each weed species competes differently with corn, with some species being much more competitive than others. For example, common sunflower has a competitive index of 10 and is much more competitive than lambsquarters, which has a competitive index of about 2. Understanding the differences between each species and its competitive factor is important in determining what weed management strategy will provide the best return on investment.

Since weeds are not created equal we should acknowledge that neither are crops. Each crop differs in its competitive ability as well. Corn is one of the most competitive row crops planted in Nebraska. The relative competitive load necessary to cause a specific yield loss quantifies the competitiveness of a crop. For corn, it would take a competitive load of around 36 per 100 sq ft, to cause a 5% yield loss. (100 sq ft is approximately 40 ft of row in 30 inch rows.) If we recall, sunflower has a competitive index of 10, therefore it would take 3.6 sunflower plants per 100 sq ft (3.6 x 10 = 36) to cause a 5% yield reduction in corn. This is all under the assumption that the weeds emerge at the same time as the crop.

Accurately calculating yield loss, especially when several species of weeds are present in the field, can be very difficult. WeedSOFT, a computer aided weed management decision support tool, can be purchased from the University of Nebraska to supply this information at the click of a button. Using this technology allows for more accurate yield loss analysis, providing better information to make a weed management decision.

Early season weed management

Controlling weeds before they become a problem just makes good sense. As the saying goes "an ounce of prevention is worth a pound of cure" and this is true with weed control in corn. Various techniques are available and, depending on individual circumstances, one may be better than the other. Producers need to determine their seasonal goals before committing to a strategy.

Before we dive into all the available strategies, be sure to refer to *Table 1* for an explanation of the terms and acronyms used to describe weed control for preemergent corn.

Early preplant applications

Early preplant herbicide (EPP) applications 10-30 days before planting offer many advantages to most producers, especially no-till farmers. First, and especially in no-till, early preplant treatments allow producers to burn down winter annuals, including henbit and mustards, and early summer annuals, including giant ragweed, common sunflower and lambsquarter. This can be important in a year with drought conditions as these early weeds, while not competing directly with the crop, can quickly rob precious soil moisture.

Second, an early preplant treatment reduces most, if not all, weed competition as the crop emerges. Although this early competition may not be the most critical with respect to yield, it can quickly reduce yield as corn enters the 2-leaf stage.

Another advantage is that in years with limited moisture, the herbicide has a greater chance of being activated before the crop emerges. A disadvantage of the early preplant treatment is decreased longevity of the residual activity. Common sense tells you the earlier a herbicide is applied to the soil the earlier it will stop working. Postemergence programs need to be carefully evaluated before making such a decision and some knowledge of the weed history in the field will be helpful.

Preplant applications

Preplant (PP, PPSA, PPI) is similar to early preplant and can use

(Continued on pae 39)

Table 1. Pre-emergence herbicide terms

Acronym	*Treatment*	*Timing*
EPP	Early Preplant	10-30 days prior to planting
PP	Preplant	0-10 days prior to planting
PPSA	Preplant Surface Applied	0-30 days on the surface
PPI	Preplant Incorporated	0-30 days incorporated
PRE	Premergence	Planting time until crop emerges

Early season weeds *(Continued from page 37)*

Table 2. Preplant/preemergence herbicides for corn. Rates are dependent on soil type and application type. Those listed are based on a silt-loam soil with 1-2% organic matter. Sandy soils with less organic matter may require lower rates. Soils with more clay and over 2% organic matter may use higher rates. Always consult the label before use.

Treatment	*Rate/Acre*	*Application Information*
Aatrex/Atrazine	2.2 lb	EPP, PPSA, PPI, PRE, EPOST
Axiom DF	15 - 18 oz	EPP, PPSA, PPI, PRE
Axiom AT	1.5 - 4 lb	EPP, PPSA, PPI, PRE
Balance Pro	1.9 - 3.0 oz	PPSA, PPI, PRE. Do not use where the water table is within 25 feet on loamy sand or sandy loam and soil organic matter is less than 2% or on coarse soils with soil organic matter less than 1.0%. On medium soils with pH more than 7.5, reduce rate by 0.25 oz/ac from recommended rate.
Balance Pro + **Atrazine**	1.0 - 3.0 oz + 1.0 - 1.5 lb	PPSA, PPI, PRE. Do not use where water table is within 25 feet on loamy sand or sandy loam and soil organic matter is less than 2% or on coarse soils with soil organic matter less than 1.0%. On medium soils with pH greater than 7.5, reduce rate by 0.25 oz/ac from recommended rate.
Bicep Lite II Mag.	1.1 - 1.5 qt	EPP, PPSA, PPI, PRE, POST
Callisto	6 oz	PPSA, PRE
Camix	2.0 qt	PPSA, PRE, or EPOST
Define SC	15 - 24 oz	PPSA, PPI, PRE
Degree	3.2 - 4.0 pt	EPP, PPSA, PPI, PRE, POST
Degree Xtra	3.5 qt	EPP, PPSA, PPI, PRE, POST
Dual II Magnum	1.3 pt	EPP, PPSA, PRE, POST
Dual IIG Magnum	8 - 10 lb	EPP, PPSA, PRE, POST
EPIC	11 - 15 oz	EPP, PPSA, PPI or PRE. Use low rates for soils with a pH of 7.4 or greater or with less than 1.0% organic matter.
Expert	3 qt	EPP, PPSA, PRE Also EPOST on RR® corn
Fieldmaster	4 - 5 qt	PRE, PPSA Also EPOST on RR® corn
Fultime	2.7 - 3.0 qt	EPP, PPSA, PRE
G-MAX lite	2.5 pt	PPSA, PRE, PPI, EPOST
Guardsman Max	2.9 - 3.4 pt	PPSA, PRE, PPI, EPOST
Harness/ Confidence	2.25 qt	PPSA, PRE, EPOST
Harness/Confidence Xtra	2.3 qt	PPSA, PRE, EPOST
Hornet WDG	4.0 - 5.0 oz	PPSA, PRE, EPOST
Keystone	2.4 - 2.8 qt	PPSA, PRE, EPOST
Keystone LA	1.8 - 2.1 qt	PPSA, PRE, EPOST
Lasso II	17 - 20 lb	PPSA, PRE, EPOST. Do not use on soils with less than 1.0% organic matter
Lumax	2.5 qt	PPSA, PRE, EPOST
Lexar	3.0 qt	PPSA, PRE, EPOST
Outlook	14 - 16 oz	PPSA, PPI, PRE, EPOST
Prowl/Pendimax	1.8 qt	PRE. Do not use on soils with less than 1.0% organic matter. Do not incorporate.
Prowl H_2O	1.5 qt	PRE. Do not use on soils with less than 1.0% organic matter. Do not incorporate.
Stalwart C	1.0 - 1.7 pt	EPP, PPSA, PPI, PRE
Stalwart XTRA	1.3 - 2.1 qt	EPP, PPSA, PPI, PRE
Surpass	1.5 - 2.5 pt	PPSA, PRE, EPOST
TopNotch	2 - 2.5 qt	PPSA, PRE, EPOST

Controlling summer annual broadleaves in wheat

Summer annual broadleaf weeds include those weeds that appear above the winter wheat crop before and at harvest. They can make harvest extremely difficult and may necessitate a "harvest aid" treatment. These treatments make harvest easier, but the real damage to the crop has already occurred. These weeds compete with the wheat for space, nutrients, soil water, and light.

It is estimated that annual broadleaf weeds cause an average of more than $2 million loss to winter wheat producers in Nebraska.

Survey your wheat fields for weeds and then select the herbicides or herbicide combinations best suited for the situation. Remember to always check replant options and rotation restrictions. Your herbicide selection may affect crop options next year, the following year or even three or four years later or as soon as this summer if a storm wipes out the crop.

Several herbicides provide excellent broadleaf weed control with minimal wheat injury; however, some varieties are more sensitive to herbicides than others. Injury varies with herbicide, variety, and growth stage. Research has not been conducted on the herbicide sensitivity of many of the varieties presently planted. The following are fundamentals that should be considered before selecting a herbicide treatment:

1. **Identify** problem weed(s).
2. **Spray** when weeds are small and actively growing. Spray at the proper winter wheat growth stage for the herbicide used.
3. **Use** proper spray equipment that is in good condition and not contaminated with previously used herbicides.
4. **Calibrate** the sprayer to ensure application accuracy.
5. **Read and follow** directions on the herbicide label.
6. **Know** your rotational plants to avoid herbicide carryover problems to sensitive crops.
7. **Be aware** that crop disasters such as winter injury, hail, or disease occur and previously applied residual herbicides may limit recropping options.

Herbicides recommended for broadleaf weed control in winter wheat include Aim (carfentrazone-ethyl), Ally (metaulfuron), Amber (triasulfuron), 2,4-D, Banvel (dicamba), Buctril (bromoxynil), Curtail (clopyralid + 2,4-D), Finesse (metsulfuron + chlorsulfuron), Harmony Extra (thifensulfuron + tribenuron), Peak (prosulfuron), Rave (triafulfuron + dicamba), and Starane (fluroxypyr).

Some of these products should be combined to control a wider spectrum of broadleaf weeds in winter wheat. Herbicide combinations are also recommended for managing the potential development of herbicide resistance. Ally, Amber, Finesse, Harmony Extra, and Peak are sulfonylurea herbicides and are ALS-AHAS inhibitors.

See the *2005 Guide for Weed Management in Nebraska* (EC 130) for more information.

Bob Klein, Extension Cropping Systems Specialist
West Central REC

Early season weeds *(Continued from page 37)*

many of the same herbicides. Treatments are typically made 0-10 days before planting. Preplant doesn't give you the advantage of catching early weeds, but it may provide the needed residual for setting the stage for a good POST treatment.

Preemergence applications

A preemergence treatment (PRE), applied after the crop is planted but before emergence, offers many of the same advantages as preplant applications. An additional advantage is that it allows the producer to increase the longevity of control provided by the herbicide. This works well with conventional till fields. This also provides increased management flexibility later in the season as summer annuals begin to emerge.

Table 2 lists labeled preemergence herbicides and their application timings. As always, read, understand, and follow the product label.

For further evaluation of herbicide efficacy on weeds and weed/crop competition, see *the 2005 Guide For Weed Management in Nebraska*, available for $3 from your local Cooperative Extension Office.

Brady Kappler
Weed Science Educator

Document soybean rust measures for insurance

USDA's Risk Management Agency (RMA) is encouragng producers concerned about the potential impact of Asian soybean rust to:

1) visit with their crop insurance agent about requirements and ask any questions they may have;

2) use good farming practices and treat for rust, based on recommendations from ag experts; and

3) document the advice received and actions taken to combat this disease.

"We encourage all producers to talk to their crop insurance agent to understand and comply with the terms of their crop insurance policy to ensure they will be adequately prepared to meet the challenges presented by this disease," said RMA Administrator Ross J. Davidson, Jr.

For more information, see their Web site at *http://www.rma.usda.gov/news/2005/03/soybeanrust2.html*

New herbicides may have familiar ingredients

In the old days there were always plenty of new herbicides and modes of action to consider. Now new modes of action in herbicides are few and far between. With all the herbicide tank mixing and the addition of smaller companies marketing generic herbicide products, we still come up with quite a few new herbicide names. The following lists new herbicide products for 2005. (Note: "a.i." stands for active ingredient and "a.e." represents acid equivalent.

Clarion (37.5% nicosulfuron + 37.5% rimsulfuron). For selective POST control of grass and broadleaf weeds in field corn. DuPont. Same active ingredients as Steadfast, marketed more in western Nebraska than Steadfast.

Durango (isopropylamine salt of glyphosate 4 lb ae or 5.4 lb ai/gal). For POST control of broadleaf and grass weeds in Roundup Ready© corn and soybean, burndown, fallow cropland, and noncropland weed control. Additional surfactant not required. Dow AgroSciences. Higher concentrated formulation of glyphosate. Typical rates will be 12 and 24 oz per acre.

Eptek 7E (EPTC 7 lb ai/gal). Used for controlling grass and broadleaf weeds in alfalfa and other legumes, sugarbeet, and tomato. Drexel.

Extra Credit 5 (glyphosate 5 lb ai/gal). For POST control of weeds in Roundup Ready© soybean, Roundup Ready© corn, fallow, and reduced tillage systems. Nufarm.

Glyphomax XRT (isopropylamine salt of glyphosate 4 lb ae or 5.4 lb ai/gal) For POST control of broadleaf and grass weeds in Roundup Ready© corn and soybean, burndown, fallow cropland, and noncropland weed control. Additional surfactant not required. Dow AgroSciences. Higher concentrated formulation of glyphosate. Typical rates will be 12 and 24 oz per acre.

Journey (imazapic 0.75 lb ai + glyphosate 1.5 lb ai/gal). For noncrop land weed control, CRP, and before planting native grasses or wild flowers and legumes. BASF Ag. This product provides some coverage with Plateau being removed from commercial market.

Mad Dog Glyphosate (isopropylamine salt of glyphosate 3lb ae or 4 lb ai/gal). Generic glyphosate for use in Roundup Ready© corn and soybeans. Agsco Inc.

Lexar (s-metolachlor 1.74 lb + atrazine at 1.74 lb + mesotrione at 0.224 lb ai/gal + benoxacor safener). For PRE control of weeds in field, seed, silage, and yellow popcorn. Syngenta. This product has the same active ingredients as Lumax. It contains more atrazine and less metolachlor than Lumax.

Metribuzin DF (metribuzin 75% DF) For control of certain annual weeds in soybean, field corn, potato, alfalfa, asparagus, and carrots. Bayer Crop Sciences.

Osprey (mesosulfron methyl 4.5% WDG). New sulfonylurea herbicide for control of grass and broadleaf weeds in winter wheat. Bayer Crop Sciences.

Olympus 70 WDG (propoxycarbazone - 70% water dispersible granular). For POST control of certain grasses (primarily *Bromus* species) and broadleaf weeds in wheat. Bayer Crop Science. Another new sulfonylurea herbicide for wheat that is marketed for downy brome control.

Pasturegard (triclopyr 1.5 lb ae + fluroxypyr 0:5 lb ae/gal). For control of woody plants and annual and perennial broadleaf weeds in rangeland and perennial grass pastures, fence rows, non-irrigated ditchbanks, and around farm buildings. Dow AgroSciences.

Resolve (rimsulfuron - 25%). Provides selective residual control of certain annual grass and broadleaf weeds when applied postemergence to field corn.

Silverado wild oat herbicide (mesosulfuron - 2%) For control of wild oat in wheat including durum. Bayer Crop Sciences.

Surmount (fluroxypyr 0.67 lb ae + picloram 0.67 lb ae/gal). For control of woody plants and annual and perennial broadleaf weeds in rangeland and perennial grass pastures, fence rows, non-irrigated ditchbanks and near farm buildings.

Widematch or WideMatch™ M herbicide (fluroxypyr 0.75 lb ai + clopyralid at 0.5 lb ai gal or co-pac of fluroxypyr + clopyralid + MCPA at 1.5 + 0.42 + 2.35 lb ai /gal). For POST control of kochia, Canada thistle, wild buckwheat, and more than 20 broadleaf weeds in small grains like wheat, durum, barley, and oat. Dow AgroSciences.

2005 Guide for Weed Management

This year's edition features several additions, including sections on non-chemical weed control, weed management in herbicide-resistant crops, and total vegetation control. It also includes significantly more information on correctly setting up your sprayer and expanded weights and measurement information. As usual all sections of the book have been updated to include the latest research material. Pick up a copy at your local extension office.

WeedSOFT 2005

The 2005 version of WeedSOFT has several exciting changes. First, this year's software includes the ability to include no-till burndown in your treatments. Second, the user can see the effects of not controlling early season weeds. The early season yield loss calculator now takes into account the effect of uncontrolled weeds. Also included this year are two new learning modules and more information on herbicide mode of action.

This year's WeedSOFT includes a new program for your Pocket PC (iPaq, Axim, etc.) called WeedMAPPER. It allows you to download field maps, indicate on them where infestations are located, and then import the information into the Advisor section of WeedSOFT for treatment selection. Learn more about this program and the 2005 updates on-line at *weedsoft.unl.edu.*

Brady Kappler
Weed Science Educator