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CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

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Are you eliminating potential income?

Delaying weed control decreases soybean yield

Postemergence weed management has become the backbone of soybean weed management with the widespread adoption of Roundup Ready® technology.

Glyphosate is a consistent highly effective postemergence herbicide controlling even fairly large weeds that other herbicides would not control. (*See related stories on pages 103-105.*) This effectiveness has resulted in some producers deceiving themselves regarding the most cost effective strategy for using this technology. Because glyphosate is effective on large weeds, some producers delay treatment with the objective of making only one application.

Yield losses occur while the weeds and crop grow together and the producer waits until the 11th hour to "execute" the weeds. This effect is most costly where no preemergence herbicide has been used -- the situation with approximately half the Roundup Ready soybean acreage.

The yield loss from delaying weed control is influenced by weed and crop size, weed species, weed density, and crop yield potential. It would not be unusual in a weedy field to lose as much as 2% of the potential yield for each additional soybean stage weeds are allowed to grow with the crop. Don't give up your crop yield in order to delay herbicide application. Treat before soybean reach the V2 stage in weedy fields.

WeedSOFT can make estimates of this early season yield loss that are based on the specific conditions in your field. WeedSOFT is a computer based weed management Decision Support System (DSS) available from the University of Nebraska. WeedSOFT estimates yield losses due to uncontrolled weeds and the economic return from many herbicides and weed management strategies in seven major crops. It sells for $50 plus sales tax and shipping. For more information go to *http://weedsoft.unl.edu.*

Alex Martin
Extension Weeds Specialist

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Western Nebraska winter wheat showing signs of stress and disease

Winter wheat in the Nebraska Panhandle, for the most part, shrugged off the May 1 freeze with little damage, but it now faces new threats. Several warm dry days last week is all it took for drought stress symptoms to show up over large areas of the Panhandle. The wheat crop is in the boot stage to early heading stage and is approaching maximum water use, but Mother Nature has decided to be skimpy with the rain the last couple of weeks and warm windy weather made a significant impact on much of the wheat crop.

In addition to drought stress, several diseases appear to be widespread. Tan spot and stripe rust can be found in fields throughout the Panhandle. (See page 102.) In some cases, spraying may be called for to prevent serious injury. Recent warm weather also brought out the symptoms of wheat streak mosaic virus -- yellow streaking and mottling of leaves. This disease is widespread in the Panhandle and may pose a serious threat to grain yield. Growers are encouraged to scout their wheat fields now to determine if they have disease issues that need to be addressed.

For scouting and treatment recommendations for wheat diseases, see previous issues of *Crop-Watch* or the *UNL Wheat Production Handbook*, available on-line at *http://www.panhandle.unl.edu/personnel/lyon/*

Drew Lyon
Extension Dryland Crops Specialist

Ag briefs

Dewey Lienemann, Extension Educator reporting for Webster and southern Adams counties: Most of the corn has been planted and has emerged and the last fields of soybeans were being planted Monday. Some corn and soybean were replanted due to the storm that brought too much rain, hail and flooding to parts of southern Adams County. Most of Webster County got 1.5-2.5 inches of rain without the heavy hail and flood. We were starting to show effects of dry conditions until then. A lot of pivots are running as the ground is crusted and beans and some corn are having trouble breaking through the soil.

Some wheat across the county is still having trouble and is yellow, stunted and slow to develop; however, a lot of wheat has headed.

Stripe rust common in Panhandle wheat; conditions ideal for more

Stripe rust is prevalent throughout western Nebraska's winter wheat crop, according to Bob Harveson, extension plant pathologist at the UNL Panhandle Research and Extension Center at Scottsbluff.

With the current weather forecast, conditions are ideal for further infection and disease progression. The disease develops most rapidly at temperatures between 50 and 60 degrees Fahrenheit with intermittent rain or dew that causes leaf wetness.

Harveson advises that fungicide sprays are now warranted to protect flag leaves and emerging heads; however, a number of labeled fungicides can no longer be used, because of the current crop stage. To be in compliance with their labels, Headline and Propimax EC can be used up to 10.5 Feeke's Scale (the late heading and flowering stage). After this growth stage, there is a risk of possible illegal residues of fungicide remaining.

Panhandle REC Release

Unfortunately we have found several fields, especially in lowland areas, exhibiting severe frost damage. We had five straight nights of below freezing temperatures just before boot stage and then a reprieve for a week with another frost coming a couple of weeks ago. We have had reports of split stems, barren heads and even no heads. I anticipate we will have a lot of white caps in this year's wheat, diminished yields in spotted fields, and an early harvest.

Alfalfa was hit with both freeze and more alfalfa weevil than I can remember. Some producers sprayed early, but most cut their alfalfa when they found damage. Some grain sorghum has been planted but many producers are waiting for warmer soils. Pastures are starting to really come on as are mullein and musk thistle in areas that haven't been sprayed.

Ralph Kulm, Extension Educator in Holt and Boyd counties: Moisture and cold temperatures have been the big stories for this area. Precipitation is more than 3 inches above normal for the year. Freezing temperatures (11 out of 12 nights) from April 23 to May 4 damaged alfalfa and cool season grasses and lowered soil temperatures to the point where nearly all of the corn emerged about May 14, regardless of when it was planted. About 90% of the alfalfa has recovered and will produce a fair first cutting. The other 10% is trying to make regrowth from the crowns. Alfalfa weevil populations are building, but it is too late to control them. Producers will need to harvest and then scout the regrowth. Soybean planting is nearly completed. Pastures are in better condition than at any time in the past five years.

New agronomy head named

A biotechnology researcher has been hired to head UNL's Department of Agronomy and Horticulture. L. Mark Lagrimini will assume the job Aug. 1.

Lagrimini is a former project leader at Syngenta Biotechnology Inc. and spent 12 years at Ohio State as a faculty member in the Department of Horticulture and Crop Science. At Ohio State Lagrimini led a research program on plant enzymes. At Syngenta he was principal scientist and group leader, working on western corn rootworm resistance and drought tolerance and nitrogen efficiency in corn. Most recently, he's been a project leader at Athenix Corp., an agricultural biotechnology firm working to develop novel traits for herbicide tolerance and insect resistance.

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

Research compares many glyphosate products; finds few differences in efficacy

The proliferation of glyphosate-based products into the glyphosate-resistant crop market is unprecedented. Currently, there are more than 40 glyphosate-based herbicides registered for use in Nebraska. As distributors try to remain competitive, they've dropped product prices for growers.

Producers interested in getting the best weed control for the lowest cost can check product efficacy. We compared efficacy of a variety of glyphosate-based products (generic and brand names) on weed control over three years at six locations in Nebraska. Weed species composition in our studies included: velvetleaf, common waterhemp, sunflower, kochia, Russian thistle, lambsquarters, and a mix of foxtail species. Depending on the year or location, we tested the following glyphosate-based products at two rates (label rate and half-rate): Roundup Ultra, Roundup UltraDRY, Roundup UltraMAX, Roundup WeatherMAX, Touchdown w/IQ, Cornerstone, Clearout 41 Plus, GlyphoMAX, Glyfos Xtra, and Glyphomax Plus.

All herbicides provided excellent weed control (more than 90%) regardless of the rate or brand name. For example, there was no significant difference in the level of weed control for Roundup Ultra Dry and the generic product, Clearout 41 Plus. Similarly, the level of weed control was not significantly different between Roundup WeatherMax and the generic, Clearout 41 Plus or any other herbicide tested. These findings are similar to those reported by colleagues in other states. Generic glyphosate-based products can provide a valuable tool for weed control in glyphosate- tolerant crops, especially to those producers who are interested in lowering crop production inputs by reducing weed control costs. Perhaps, more importantly, producers should select the appropriate herbicide rate for the weeds present, environmental factors and herbicide costs, rather than choosing a glyphosate trade name.

In addition, with the growing popularity of the relatively inexpensive generic glyphosate- based products, there is an even grater need for their proper use. Their value can be preserved only by proper management and use. This becomes even more important when other Roundup- Ready crops become more readily available (e.g. Roundup-Ready corn and Roundup-Ready alfalfa). It is easy to fall into a trap of overusing glyphosate when one glyphosate-resistant crop is grown after another.

Proper use of glyphosate-based technology, as a component of an integrated weed management program, is the key to preserving the long-term benefits of this technology while avoiding many concerns about its use or misuse. Glyphosate is a valuable herbicide, the kind of product that gets discovered once in a 100 years, and should be preserved for future generations.

For more details about proper use of herbicide-tolerant crops, especially Roundup Ready technology, see the Extension NebGuide, *Use of Herbicide Tolerant Crops as a Component of an Integrated Weed Management Program* (G02-1484).

Stevan Knezevic
Extension Integrated Weed Management Specialist

Heavy glyphosate use may be leading to weed species shift

Given that more than 90% of soybean fields in Nebraska are planted with glyphosate-tolerant varieties (e.g. Roundup Ready® varieties), soybean producers must clearly realize the benefits from this technology. However, widespread and repeated use of glyphosate-based herbicides (brand names and generics) raises several concerns from the practical standpoint, such as the potential for weed resistance and shifts in weed species.

Currently, we don't know of any glyphosate-resistant weeds being found in Nebraska; however, it appears that our fields are experiencing a slow shift in weed species. In the last three years, university weed extension specialists have been receiving phone calls and complaints on glyphosate failing to control certain weed species, including some "new weeds."

Weed species shift is not a new thing -- it has happened since man started cultivating crops. Weedy and invasive species easily adapt to changes in production practices to take advantage of the change. Species that do not adapt become "less frequent" compared to those that do adapt. Despite the fact that glyphosate controls many weed species, especially grasses, many broadleaf species are naturally tolerant to label rates of glyphosate. It appears that as a result of repeated use of glyphosate in Nebraska, there is a slow shift in weed species from those easily controlled by glyphosate to those more tolerant of this herbicide.

Based on phone calls and questions from producers, crop consultants and agronomists, we

(Continued on page 104)

Weed shift *(Continued from page 103)*

compiled the following list of species which appear to be taking advantage of this shift and becoming more numerous: marestail (horseweed), morningglory (common and ivyleaf), wild buckwheat, Pennsylvania smartweed, lady's thumb, venice mallow, yellow sweetclover, field bindweed, waterhemp, kochia, Russian thistle, primrose and volunteer Roundup Ready® corn.

If these weeds are not controlled, their seeds will be a major problem in the future, especially in no-till systems, due to lack of tillage as a tool for weed control. Such shifts in weed populations to more tolerant weeds is already resulting in increased weed control costs due to additional herbicide applications or increased glyphosate rates.

Research on glyphosate rates

This article summarizes preliminary data from studies conducted at Concord and North Platte in 2004 to determine the appropriate dose of glyphosate to control these weed species.

We tested seven rates of Roundup WeatherMax® ranging from 4.6-60.0 oz with 2% v/v AMS. Each glyphosate rate was applied at three growth stages of the weed, targeting 1) 2- to 5-inch tall weeds (early POST), 2) 6- to 12-inch weeds (mid POST) and 3) 12- to 20-inch weeds (late POST). Visual ratings of percent weed control were conducted about 21 days after glyphosate treatment, based on a scale from 0 to 100 (where 0 = no injury and 100 = plant death).

Most of these weeds survived the label rate of Roundup WeatherMax (22 oz/acre). Weed size was the most important factor that determined the level of control for each species (*Table 1*). Ivyleaf morningglory and sweet clover were the hardest species to control. For example, the 22-ounch rate provided only 50% control of ivyleaf morningglory that was 4 inches tall. The control level was further reduced with taller morningglory, resulting in 30% and 21% control for 8- and 12-inch tall plants, respectively (*Table 1*). A similar trend was observed for other weed species (*Table 1*). The label rate of Roundup WeatherMax provided good control (more than 85%) of kochia and Russian thistle, regardless of plant height (*Table 1*).

Since the label rate of WeatherMax did not provide adequate control of most species over 3 inches tall, we developed dose response curves (not shown) to determine how much glyphosate is needed to achieve at least 90% control of taller plants (6 to 20 inches tall). This information also will help determine rates for late glyphosate applications in Roundup Ready soybeans (not an uncommon practice in Nebraska). Based on our data from the dose response curves, to achieve at least 90% control of taller weeds, much higher rates of Roundup WeatherMax ranging from 1.5- 4 times the label rate are required. About 1.5-2 times the rate was needed to control 3- to 6-inch tall wild buckwheat, Venice mallow, velvetleaf, waterhemp, sweet clover, ivyleaf morningglory and field bindweed. About 3-4 times the rate was needed to control 12- to 15-inch tall ivyleaf morningglory and yellow sweetclover. For weed sizes and respective rates, see *Table 1.*

This data reaffirms what many practitioners have observed, that glyphosate used alone does not work as well today as it did five to six years ago. The label rate of glyphosate did not provide adequate control of most problem weed species tested. If the trends in weed shifts continue, glyphosate used alone will no longer be a viable tool for weed control in Roundup Ready systems. Mixing glyphosate with other post-emergence broadleaf herbicides, or using soil-applied herbicides after soybean planting, indicates a potential to effectively control most of these species.

Using various weed control tools is not a new thing, we only "forgot" about it since the introduction of Roundup-Ready crops. Changing modes of actions in your herbicide program is also one of the basic ideas in an Integrated Weed Management (IWM) program, especially to combat weed resistance/tolerance issues. Integrated Weed Management provides a system for integrating several tools for weed control.

I believe that Roundup-Ready technology only fits well when used with other weed control methods under the umbrella of an IWM system. The value of this technology can be preserved only by proper management and reduced overuse. It is easy to fall into a trap of overusing glyphosate when one glyphosate-tolerant crop is grown after another. Proper use of this technology, as a component of an IWM program, is the key to preserving the long-term benefits of this technology while avoiding many of the concerns about its use or overuse.

Stevan Knezevic
Extension Integrated Weed Management Specialist

Crop conditions

USDA's Nebraska Agricultural Statistics Service: Wheat conditions rated 3% very poor, 7% poor, 40% fair, 44% good, and 6% excellent. Fields were 95% jointed. Fields were reported to be 23% headed, a week and a half behind last year at 63% and almost a week behind average at 43%.

Corn planting progressed to 97% complete, near last year at 98%, but ahead of average at 94%. Corn emergence was at 70%, behind last year at 85% and just ahead of average at 68%. Corn condition rated 1% very poor, 3% poor, 26% fair, 62% good, and 8% excellent.

Soybean planting had progressed to 71%, ahead of last year at 67% and the average at 60%.

Weed shift *(Continued from page 104)*

Table 1. Weed species and their heights at the time of herbicide application, levels of weed control with 22 oz rate of Roundup WeatherMax (at 21 days after application), and the rate of Roundup WeatherMax rate needed to provide 90% control of respective species at Concord in 2004 (preliminary data). Note that while rates higher than the labeled rates were used in this research, always read and follow the label.

Weed species	Weed height *(inches)*	Level of weed control with 22 oz rate of WeatherMax *(%)*	Rate of WeatherMax needed to achieve 90% control *(in fl. oz)*
Field bindweed	3	95%	22
	6	70%	35
	9	60%	35
Ivyleaf morningglory	4	50%	37
	8	30%	50
	12	21%	> 60
Kochia	4	100%	15
	12	95%	20
	20	90%	22
Russian thistle	5	100%	12
	10	90%	22
	15	90%	22
Yellow sweetclover	4	50%	35
	8	35%	48
	14	10%	> 60
Velvetleaf	5	85%	28
	10	65%	34
	21	60%	40
Venice mallow	6	70%	32
	10	50%	40
	18	45%	58
Common waterhemp	4	98%	16
	9	90%	28
	14	85%	30
Wild buckwheat	3	70%	28
	6" tall/ 12" runners	60%	33
	6" tall/ 24" runners	45%	40

June proclaimed Nebraska Noxious Weed month

Governor Dave Heineman has proclaimed June as Noxious Weed Awareness Month. The Nebraska Department of Agriculture encourages Nebraskans to report noxious weed infestations to their county weed control authority.

Eight weeds have been designated noxious in Nebraska: musk thistle, Canada thistle, plumeless thistle, spotted knapweed, diffuse knapweed, leafy spurge, purple loosestrife, and saltcedar.

June 1 tour features crop to pasture conversion

Learn how one Nebraska ag operation converted from cropland to pasture and hay on a June 1 tour near Ohiowa. Kevin and Lisa Kimbrough and Gary and Carol Peppie will host the irrigated and dryland pasture tour Wednesday from 2 to 4 p.m. at their farm south of Ohiowa.

Kevin will talk about their various grass-based enterprises, including stocker cattle, sheep, chickens and horse hay. Tall fescue — both endophyte free and novel endophyte varieties — have been planted for grazing and hay.

Other featured speakers will include Steve Wallace, Barenbrug USA sales manager; Bob Scriven, Kearney, irrigated pasture grazing consultant; Bruce Anderson, Extension Forage Specialist; Terry Gompert, Knox County extension educator; and Doug Anderson, Nuckolls and Thayer counties extension educator.

Wallace has traveled across the United States, New Zealand and Europe observing and learning about grass based agriculture systems. He will discuss forage species selection and management. Scriven has worked with many irrigated pasture producers in Nebraska and surrounding states and will talk about the economics of establishing and managing irrigated pasture.

Directions to the tour site are from Nebraska Hwy 74 at Ohiowa: travel 4 miles south on County Road 20 and 1/4 mile west on Road X.

For more information contact one of the following tour sponsors: Brad Young at Prairie States Seed, 866-373-2514; Doug Anderson , 402-768-7212; Duane Lienemann, 402-746-3417; or Kevin Kimbrough, 402-295-2530.

Light trap data available

European corn borer moths are flying

European corn borer moths have been active since the second week in May in south central Nebraska, based on catches in black light traps at Aurora and Clay Center, and activity likely has extended northward.

As **non-Bt** corn grows it will become susceptible to the first generation of corn borers. While we haven't seen a bumper crop of moths so far in our black light traps, we should not be complacent about the European corn borer in non-Bt cornfields.

Timely and accurate scouting is the key to managing European corn borer in standard (non-Bt) corn hybrids. Remember that conditions are localized and each field should be scouted to make accurate decisions.

Corn borer larval survival depends on several factors. High humidity and warm temperatures are ideal for establishment of larvae in the whorl. Egg masses are white, with 5 to 40 eggs in each mass, and laid on the underside of leaves near the midrib. The masses look like fish scales flattened against the leaf. In four to seven days the heads of the developing larvae will be visible, and the eggs will appear spotted. This is the "blackhead" stage, and these eggs normally hatch within 24 hours. As the larvae enter the whorl to feed on the developing tissue, the feeding scars (shot-holes) appear as the leaves emerge from the whorl. Larvae will remain within the whorl for 7 to 14 days before boring into the stalk.

Corn that is less than 16 inches with extended leaf height (distance from the ground to the tip of the leaf pulled up vertically, about six-leaf stage) is unlikely to support young larvae because of the presence of a substance known as DIMBOA, a natural resistance factor. As the plants grow, the level of DIMBOA decreases, so plants above the 16-inch extended leaf height will generally support corn borers. First generation corn borers prefer taller plants for egg laying, therefore, the earliest planted fields are more likely to have higher populations. Scout these fields first, but do not neglect other fields because any cornfield is a potential target and should be scouted.

Now that Bt corn is being planted widely, be sure you know whether the field you are scouting was planted to Bt corn. In Bt corn, corn borer injury to whorl stage plants should be limited to a few tiny pin-holes where larvae initially fed before ingesting a lethal dose of Bt toxin. However, seed lots may contain a small percentage of off-type seed (typically less than 4%) which does not produce sufficient toxin levels to kill corn borer larvae. If greater than 4% of plants show significant leaf feeding damage in a Bt cornfield, check to confirm it is corn borer causing the injury. (Other caterpillars such as corn earworms or common stalk borer are not controlled by Bt corns currently available.)

If you believe that corn borer is causing the injury, contact a representative of the company that sold the seed to investigate the situation more completely.

To determine the need for treatment, scout at least 20-25 consecutive plants in at least 4-5 places in the field (100 plants minimum per field). The scouting locations should be randomly selected and representative of the field as a whole. At each scouting location, randomly select the first plant that will be sampled. If you do not and always start sampling at an infested plant, the counts may be inflated by as much as 5%. Count the number of plants showing shot-hole feeding and determine the percent of infested plants. Next, pull the whorls from at least two randomly selected infested plants in each set of 20-25 plants. Unroll the leaves and count the number of larvae in the whorl and determine the number of larvae per infested plant. Young corn borers usually suffer from 60-85% or higher mortality due to natural enemies, weather and disease, so try to wait to make treatment decisions until most of the borers are second instar. This will allow you to take advantage of natural larval mortality.

Use the information gathered from field scouting to complete the accompanying worksheet. This takes you through the calculations needed to estimate the preventable loss if an insecticide is used. Compare the preventable loss to the total cost of

(Continued on page 107)

Light trap reports available on-line

Black light trap data can help monitor timing of insect activity and suggest when to more closely monitor for pest insects. Results from black light traps operated by UNL Extension are available at http://entomology.unl.edu/fldcrops/index.htm

Additional sites will be added later.

Bob Wright, Extension Entomologist

European corn borer *(Continued from page 106)*

insecticide application. An insecticide application is economically justified if preventable loss exceeds the total cost of insecticide application. An interactive version of the worksheet is available on the Web at *http://www.ianr.unl.edu/forms/forms.skp/ecb_1st.html.*

Insecticide treatments will be effective only if borers are still feeding in the whorl. Treatments made after corn borers begin to bore into the stalk (when they are about half grown) will not be effective. Based on research data, the best control is achieved with aerial or ground applied granular formulations or liquid applications through sprinkler irrigation systems, which provide the best penetration of insecticide into the whorl where the corn borer larvae feed.

Worksheet for first generation European corn borer

To estimate the cost/benefits of applying an insecticide for European corn borers, you also need to know the cost per acre of the insecticide application ($/acre), the anticipated price of grain ($/bu), and yield potential (bu/acre) of your hybrid. Assume a 5% yield loss per borer per plant and that an insecticide application will reduce the larval population by 75%. In the following example 50% of the plants had an average of four borers per plant, with a 200 bushel yield goal at $2.75 corn.

Sample worksheet to estimate first generation corn borer

Average number of larvae/plant (percent of injured plants X number of larvae/injured plant)	**50% x 4 = 2**
Potential yield loss if all larvae survive (number of larvae/plant X 5% loss/borer/plant)	**2 X 5% = 10%**
Potential bushel loss (potential yield loss X yield potential)	**10% X 200 = 20 bu**
Potential dollar loss (potential bushel loss X estimated price of corn)	**20 X $2.75 = $55**
Preventable loss (potential dollar loss X proportion of larval population reduction)	**55 X 0.75 = $41.25**

In the above case a $12 application would more than pay for itself by preventing a $41.25 loss. All of the above numbers are variable and are unique to each field and farm management operation. Use the formula several times using different figures for yield, price, and cost of application to see how each one affects the outcome. Use the figures closest to your situation to make the final determination.

Many insecticides are registered for control of first generation European corn borers and most will do a good job if applied properly at the right time. The *Bt*-based insecticides Dipel, Condor, M-Peril and others are effective and do not reduce populations of corn borer natural enemies. Refer to the UNL Department of Entomology Web site at *http://entomology.unl.edu/instabls/ecb1st.htm* for a list of suggested insecticides.

Additional information on first generation European corn borer management is available in *First Generation European Corn Borer Scouting and Treatment Decisions*, NebFact 98-364. This publication is available from your local cooperative extension office or at *http://ianrpubs.unl.edu/insects/nf364.htm*

Tom Hunt, Extension Entomologist, NEREC
Keith Jarvi, IPM Extension Assistant, NEREC

Cattle on feed up 4%

Nebraska feedlots with capacities of 1,000 or more head contained 2.19 million cattle on feed on May 1, up 4% from last year and 5% above May 1, 2003. Placements of cattle into feedlots during April totaled 320,000, the same as the last two years. Marketings of fed cattle during April totaled 380,000 head, down 10 percent from last year and 2003. Other disappearance during April totaled 10,000 head, the same as April 2004 and 2003.

Raise cutting height when alfalfa harvest is delayed

Alfalfa has matured much faster than usual this spring. Even if it is not blooming heavily, you might be surprised to find that it has already started to send up new shoots for the next cutting. Walk into your alfalfa field and examine the base or crown of plants.

If you find new shoots, how tall are they? Are many of them a couple inches taller than your usual cutting height? If you cut these new shoots off along with the first growth, your alfalfa plants will have to start a whole new set of shoots. This could delay the second cutting by as much as a week.

Fortunately, you can avoid this delay. All you need to do is raise your cutting height a couple inches so that you avoid clipping off most of these new shoots. Your regrowth then will have a head start toward the next cutting. And since the stubble you leave behind has low feed value, the yield you temporarily sacrifice is mostly just filler.

Normally I suggest leaving as short a stubble as possible when cutting alfalfa because that maximizes yield and doesn't affect regrowth, but the situation this year is different. Don't blindly start cutting alfalfa when harvest is delayed. First look for new shoots, then raise cutting height if needed.

Bruce Anderson, Extension Forage Specialist

Winter wheat field tours feature variety blends

For the second year, the University winter wheat plot tours will provide an opportunity for producers to compare different blends of winter wheat. Since no single winter wheat variety is perfect, providing top yield, superior pest resistance in all areas and excellent end-use quality, many producers have asked about blends.

Blends present several beneficial effects. They can combine several varieties that complement each other in various attributes, making them more stable from one year to the next while presenting a more diverse target for invading diseases and insects. One of the real keys to the success of blends will be how well they perform relative to pure lines. This year 10 blends were planted.

These blends are in addition to the 55 varieties in each plot. Each meeting will feature sessions on how to select winter wheat varieties, wheat fertility, management of winter wheat residues, winter wheat diseases, and a tour of the plots. For more information on tours, contact the extension educator in the host county.

Bob Klein, Extension Cropping Systems Specialist

Table 1. Blends used in the 2005 UNL winter wheat variety trials.

Blend #	Number and type	Varieties involved
SmDf Blend #1	3 semi dwarf varieties	Millennium, Alliance, Wahoo
SmDf Blend #2	3 semi dwarf varieties	Millennium, Wesley, Wahoo
SmDf Blend #3	3 semi dwarf varieties	Millennium, Halt, Wahoo
SmDf Blend #4	3 semi dwarf varieties	Millennium, Harry, Wahoo
TallBlend #5	3 tall varieties	Pronghorn, Goodstreak, Buckskin
SmDf Blend #6	2 semi dwarf varieties	Millennium, Wahoo
SmDf Blend #7	2 semi dwarf varieties	Infinity CL, 2137
WhtBlend #8	2 white varieties	Nuplains, Antelope
WhtBlend #9	2 white varieties	Trego, NW99L7068
IrrBlend #10	3 irrigated varieties	Jagalene, Wesley, 2137

State schedule of winter wheat variety tours

June 7, 3 p.m. CDT, Gage County, 1.5 miles north of Filley
June 14, 7 a.m. CDT, Furnas County, rainfed, Arapahoe Methodist Church
June 15, 9 a.m. CDT, Red Willow County, rainfed, Fairgrounds Community Building
June 16, 9 a.m. MDT, Chase County, irrigated, Enders Friends Church
June 17, 9 a.m. MDT, Keith County, rainfed, Ogallala, Jim Welsh Farm Shop

June 20, 3 p.m. MDT, Scotts Bluff County, irrigated, Panhandle Research and Extension Center, 1 mile north of US 26 on Hwy 72
June 21, 8:30 a.m. MDT, High Plains Ag Lab Field Day, Cheyenne County, dryland, HPAL Field 13 and Cheyenne County No-Till, Middle north side HPAL Field 25; from Sidney: 6 miles north on US 385, or from Gurley: 7 miles south on US 385, 2.5 miles west at Huntsman elevator, 0.5 miles north
June 29, 10:30 a.m. MDT, Dawes County, dryland, 8 miles west of Chadron on US 20, 0.9 miles north on Airport Road, west side of road
June 29, 3 p.m. MDT, Box Butte County, dryland, between Hemingford and Alliance
June 30, 10:30 am MDT, Stateline Scotts Bluff/Goshen County, Dryland, 4 miles south of Stegall, 1.8 miles west on County Road P, north side of road (0.2 miles east of Wheatland School)

June 30, 3 p.m. MDT, Stateline Scotts Bluff/Goshen County, irrigated, 2.5 miles west of Albin, Wyoming on Hwy 216, 2 miles south on Road 159, 0.3 miles west on 227, 2 miles south on Road 159, 3 miles west on Rd 156, 0.7 miles north
June 30, 6 p.m. MDT, Kimball County, dryland, I-80 exit 28 at Dix, 5 miles south on Rd 59, east 0.3 miles on Road 22, south side of road

Regional tours

June 15, 8 a.m., USDA ARS Central Great Plains Research Station, Washington County, 4 miles east of Akron, Colorado, on US 34
June 16, 9 a.m. MDT. Sedgwick County, David Deden Farm, south of Julesburg, Colorado, on U.S. 385, east on Hwy 138 to Road 61, 1 mile north, site is on the west side of the road.
June 30, 6 p.m. MDT, Laramie, Wyoming, Pine Bluffs, dryland, 6 miles north of Pine Bluffs on Hwy 215, 1 mile west on Mattson Road

Lenis Nelson
Extension Crop Variety and Seed Production Specialist

Quest on for aphid enemy

A list of enemies is made, and now Purdue University researchers must find the most lethal one by returning to the target's native home in the Orient. They're seeking the natural predator of the almost microscopic, nearly transparent yellow-green soybean aphid.

"In most of Asia, the soybean aphid is not a problem, even though it collects on the plants, because natural enemies control it," said Bob O'Neil, Purdue entomology professor. "We have studied the soybean aphid's natural enemies and now that we know them, we need to determine their impact on non-targeted insects."