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CropWatch No. 2002-20, Aug. 23, 2002

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CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

No. 2002-20
Aug. 23, 2002

Consider winter wheat as an irrigated crop option

With the recent drought, water supplies for irrigation next year are uncertain in many parts of the state and growers are looking for economical alternatives to high summer water use crops for some of their irrigated land. These growers should consider planting winter wheat this fall.

With wheat's recent price increases and lower water use in July and August, it can be an excellent addition to an irrigated rotation. Although maximum winter wheat yields require 20+ inches of water, winter wheat is less likely to suffer major yield losses than crops like corn, sugarbeets, dry bean, and soybean, when less water is available. One reason for this is that winter wheat has its greatest need for water in May and June, historically the two wettest months of the year in Nebraska. The other crops have their greatest water demand in July and August when average rainfall is less and evaporation and transpiration demands are greater.

Focus on wheat

This CropWatch targets fall issues related to wheat production

Recent UNL research has emphasized the evaluation of winter wheat varieties for irrigation. Many lines are now available with excellent yield potential under irrigation, including Wesley, 2137, Yumar, Dumas and Jagalene. These varieties all have adequate straw strength to hold up under intensively managed production systems where expected yields may be 100 bushels per acre or more *(see below)*. Growers also may wish to consider planting a hard white wheat variety and taking advantage of the new federal hard white wheat incentive program *(see page 187)*.

Irrigation recommendations

Winter wheat needs water not only to begin growth in the fall, but also to survive during winter dormancy. From when winter wheat is planted in the fall until it breaks dormancy in the spring, it may use up to 4.0 inches of water.

Water use or evapotranspiration is composed of two parts, transpiration from the plant and evaporation from the soil surface. Both compo-

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Wheat issue Inside

2002 winning wheats: Results from statewide variety trials

Western Nebraska

Panhandle wheat enjoyed an ideal fall, but conditions began to deteriorate by early January with low humidity and lack of moisture resulting in both drought stress and wide fluctuations in temperature. The conditions throughout most of the Panhandle continued to deteriorate all the way to maturity with additional drought and temperature stress each week. Only five of the eight dryland trials planted produced harvestable grain or consistent enough plots to fairly compare varieties. Both trials planted without fallow failed and the Box Butte county trial failed, primarily due to a poor seed bed.

So, what did best under the stressful conditions of 2002? For detailed results see the University of Nebraska Variety Test Web site at

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Updates

Management tips Aug. 23 - Sept. 6

♦ **Treat wheat seed with a seed treatment fungicide before planting.** In a dry year this may help reduce the risk of crown and root rot brought on by drought stress. It is also good insurance against common bunt and loose smut. (See the Aug. 9 *CropWatch* for more information on seed treatment recommendations.)

♦ **To reduce the incidence of winter kill and crown rots, make sure the drill is running "tail down" when seeding wheat.** By putting extra weight and downpressure on the press wheels, seed-to-soil contact is improved and the seedbed is firmed up. A firm seedbed heaves less with freeze/thaw and wetting/drying, reducing damage to the roots and crowns. The firm seedbed is less likely to dry out compared to a fluffy one, further reducing damage to the seedling wheat.

♦ **If your center pivot sprinkler package is mounted well below the truss rods, this is a good time to evaluate how uniform water application has been in corn.** Walk along the pivot comparing plants under and between nozzles. Inspect plants for signs of nitrogen or water stress. Look at the size of ears. Use a soil probe to check for differences in soil water content. For more information see NebGuide G-1337, *Application Uniformity of In-Canopy Sprinklers*, available at local Cooperative Extension offices or on-line at *http://www.ianr.unl.edu/pubs/irrigation/g1337.htm*

Farm Bill 2002

For more information on how the 2002 farm bill will affect your operation, visit the UNL Department of Agricultural Economics Web site at *http://farmbill.unl.edu/* It was recently expanded to include computer spreadsheets and pencil worksheets that you can use to customize decision making for your operation.

Also check the UNL program, ***Market Journal,*** for discussions with UNL specialists on how to use these resources and what you should know about the farm bill to plan for next year's cropping season. Visit *http://marketjournal.unl.edu* Also view live tapings of a number of ***Market Journal*** speakers at Husker Harvest Days Sept. 10-12 in Grand Island and talk with speakers following a panel discussion on the farm bill 11 a.m. - noon Wednesday, Sept. 11.

Field updates

Keith Jarvi, Extension Assistant, Integrated Pest Management, Northeast REC: On Aug. 16 a soybean field near Wynot appeared to have economic levels of soybean aphids. This field was unique in that it had had manure applied, which delayed planting and therefore the maturity of the field compared to most area soybean fields. (It was in R1- R3.) While it appeared that the aphids had established themselves earlier in the summer, the plant stage and cooler weather the last couple of weeks seemed to have triggered an explosive population growth. Many plants had 100-1000 aphids. The plants showed a shiny appearance on lower leaves caused by "honeydew" (aphid excrement) and some mold was appearing in heavier infested areas. Some plants were beginning to show signs of wilting, especially on new upper leaves. Lady beetles were abundant and feeding on the aphids but the lady beetles could not keep up with the aphid reproduction rate. This is probably the first field in Nebraska needing treatment for the soybean aphid.

We believe this will be an isolated incident since most beans are well beyond the early R1-R3 stages. However, it is a perfect example of how insect and mite populations can rapidly increase if environmental conditions are

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CROP WATCH

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Irrigating wheat *(Continued from page 181)*

nents must be replaced to avoid plant dessication. When the plant is dormant, transpiration is minimal but evaporation continues. Total evapotranspiration during dormancy is dependent on duration of snow cover. Snow cover prevents evaporation of water from the soil thus reducing evapotranspiration.

Winter snow and early spring precipitation can supply or replace much of the water used during dormancy, reducing the need for irrigation. However, a fall irrigation is recommended if precipitation has not been adequate to replenish the soil profile. This is especially true this year with much of the state in a drought. Soil water needs to be present in the top two feet of the soil profile to be of use to the plant in the early stages of growth. It will take approximately two inches of water on sandy soil and four inches on a clay soil to fill the soil profile to a depth of approximately two feet. When fall irrigating, the goal should be to provide adequate water for germination and early growth, while leaving room deeper in the soil profile for expected fall, winter and spring precipitation. This allows you to take full advantage of off-season precipitation, yet meet winter wheat water requirements.

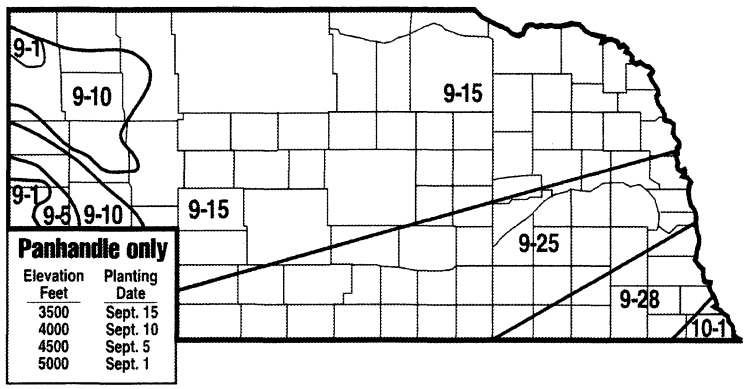
The intent of a fall irrigation is to ensure adequate soil water is available well below the seed so that once the seed germinates, plant roots can begin normal growth and development. Remember, water in the soil moves from wet areas to dry areas. So as evaporation occurs and the soil surface dries, soil water moves from the deeper depths to replace the water being evaporated near the surface. As water migrates to the soil surface, it replenishes soil water around the seed and new roots during the critical germination and emergence period.

If soil water conditions are extremely dry and there is a concern that germination and early growth may be hindered, consider irrigating before planting to partially fill the top two feet of the soil profile. Planting into moist soil conditions allows more consistent and uniform seeding depth. Often, the tendency is to get things planted and then irrigate; however applying one to two inches of water after the seed has been planted will cause soil particles to dislodge and move from the tops of soil ridges into the seed furrow. This results in the seed being covered with more soil. More importantly, the soil moved by the water over the seed is composed of fine soil particles that are tightly packed, increasing the potential for crusting and making emergence slower and more difficult.

For more information on irrigated wheat, see NebGuide G02-1455, *Producing Irrigated Winter Wheat,* available from your local Cooperative Extension office.

By irrigating before planting one light irrigation may be all that is needed to insure germination on coarser textured soils. Heavier textured soils may not need any irrigation after planting. Once the plant has emerged, irrigations can be determined based on crop need and fall precipitation.

C. Dean Yonts
Extension Irrigation Engineer
Drew Lyon
Extension Dryland Crops Specialist
Dave Baltensperger
Extension Crop Breeding Specialist
All, Panhandle REC



Planting dates for winter wheat

Plant wheat as close as possible to the suggested planting date for your area. (*See figure above for beginning dates and table on page 190 for ending dates*). Earlier seedings are more subject to root and crown rot, wheat streak mosaic, and many other diseases as well as insects such as the Hessian fly.

If you seed more than a week to 10 days after the recommended seeding date, use row-applied starter fertilizer. This is important even if your soil tests high in phosphorus. Also, since less tillering occurs with later plantings, it is usually beneficial to increase seeding rates. Plan to seed about 1.4 million seeds per acre dryland and 2.0 million seeds per acre under irrigated conditions. With late seedings, narrow rows are preferred -- 7.5 inches for dryland and 6 inches or less for irrigated.

Bob Klein, Extension Crops Specialist, West Central REC

Managing fall weeds in winter wheat

Winter annual weeds, both grasses and broadleaves, cause the largest crop losses in winter wheat because they compete with wheat for nearly the entire season. Weeds emerging with the crop are much more competitive than those emerging later in the season and can cause significant yield reductions.

Research at the Hays Experiment Station (Kansas State University) found that 100 downy brome plants per square yard that emerged within one week of wheat, reduced wheat yields over 35% (*Figure 1*). Downy brome at 100 plants per square yard that didn't emerge until three to four weeks after the wheat, only reduced wheat yields 6%. In addition to yield losses, winter annual weeds such as downy brome, feral rye, and jointed goatgrass also cause lodging, harvest difficulty, and dockage.

Check your winter wheat fields shortly after emergence. If they look like a lawn, you may have a downy brome problem. Downy brome and winter wheat are both grasses with a winter annual growth habit. Crop rotation is the best option to control downy brome in winter wheat; however, Maverick Pro herbicide makes selective downy brome control feasible. Maverick Pro is a sulfonylurea herbicide similar to other common wheat herbicides such as Ally and Amber, except that it also may provide excellent control of grasses in the *Bromus* genus such as downy brome, Japanese brome and cheat.

Like many of the other sulfonylurea herbicides, Maverick Pro has a long persistence in the soil. Recrop options within the first year are currently restricted to winter and spring wheat. A field bioassay should be taken one year after application to determine if injury to the intended rotational crop will occur. Recrop options will likely be expanded after further research, but grain sorghum and sunflower appear to be particularly sensitive to Maverick Pro carryover, while proso millet appears to show good tolerance to Maverick Pro 18 months after application.

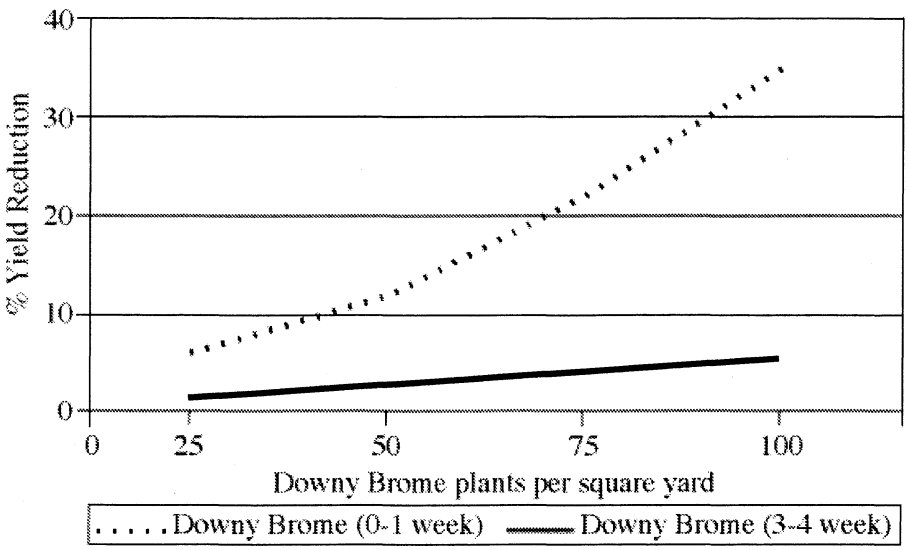


Figure 1. Downy brome competition with winter wheat as influenced by population and time of weed emergence related to crop emergence.

Maverick Pro should be applied at a rate of 2/3 ounce in 5 to 20 gallons of water per acre per cropping season. It may be applied preemergence or postemergence in winter wheat. A non-ionic surfactant should be applied to postemergence treatments at 0.5% on a volume basis.

In University of Nebraska testing, Maverick Pro performed best on downy brome in wheat when applied early postemergence, that is shortly after the downy brome emerged in the fall. Control during this period ranged from 80% to 100%. Sufficient rainfall prior to late October improved soil activation and root uptake of the herbicide, providing for excellent downy brome control. Without fall precipitation after application, downy brome control has been closer to 80%.

Applications after Nov. 1 provided less control, probably due to reduced precipitation and a slower rate of plant growth. Spring applications to downy brome have been more inconsistent, with an occasional control rating as high as 85%, but with more typical control ratings of 35%-70%. Usually these plants are significantly stunted, but still produce seed. Again, precipitation after application appears to be important for improved herbicide activity.

While crop rotation with summer crops is an excellent way to reduce the impact of downy brome in winter wheat, Maverick Pro herbicide may help wheat growers who find themselves with a downy brome infestation despite their best efforts at cultural control. Growers should be aware of the rotation restrictions with this product and the effects of weather and application timing on its downy brome efficacy.

If jointed goatgrass or feral rye are causing problems, winter wheat growers may wish to consider using the Clearfield Production System for Wheat. This involves planting a winter wheat variety containing the gene that confers resistance to Beyond herbicide. For more information on this system, see pages 168-169 of the July 26, 2002 *CropWatch*.

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Variety trials (Continued from page 181)

http://varietytest.unl.edu/. Following is a brief summary of these results.

Early wheats tended to do better than late wheats with the deteriorating conditions near harvest. Looking at the previous three years, Wahoo, Alliance, Millennium, Vista, Halt, 2137, and Niobrara have been in the top group. This year the top group (averaging 35 bushels per acre or more) was complimented by newcomers Jagalene and Above, while Wahoo and Vista slipped just out of the elite group coming in at 34 bushels per acre. In addition a couple of the old stress- tolerant varieties, Buckskin, Windstar and Pronghorn, were part of the top group along with the white wheats, Trego and NuFrontier.

The exciting part of the trials this year was the performance of some new experimental lines. It looks like we will have several new releases based on these results. The tall wheat with long coleoptiles, NE97465, was part of the top group and looks to be the first solid candidate for replacing Buckskin, where a tall wheat is needed. In addition the new line, NE97689, continues to perform well and will be a candidate for release.

Irrigated trials performed very well this year with 16 lines averaging more than 90 bushels per acre over the two regional trials. We base our comparisons on the average of the previous three years where the top yielding wheats were Millenium, Betty, Jagger, 2137, Wesley, Wahoo, Yumar, Heyne and Halt. This year's trials would add the newcomers Dumas and Jagalene to this group along with the white wheats NW97S278 (new three-year trial leader and potential candidate for release), Lakin and Trego, while Betty and Heyne slid from the top group. As expected on a year with some lodging the red wheat varieties Millenium, Wahoo and Halt slid from the top group as they have great yield potential but are a little short on straw strength for intensively managed irrigated conditions.

Get the latest variety trial results on-line

To see how various wheat varieties fared under dryland and irrigated conditions in this drought year, check the results of the 2002 University of Nebraska wheat variety trials on the Web or in a printed report.

The on-line results are at *http://varietytest.unl.edu/whttst/2002/index.htm* and the print edition, *Nebraska Fall-Sown Small Grain Variety Tests*, EC02- 103, should be available to Extension offices in late August.

Considering the whole package of currently available wheats, it looks like 2137, Wesley, Yumar, Jagalene and Dumas will provide a great compliment of wheats for irrigated production in the region.

David Baltensperger, Extension Alternative Crops Breeder
Panhandle REC

Eastern Nebraska

Drought changes many long held opinions. Wheat in eastern Nebraska is normally grown to help the following crops due to rotational benefits, weed control, and moisture accumulation. In 2002, we find that the wheat yields were quite high in a year when we are looking for ways to salvage some forage from other dryland crops. Wheat benefitted from rainfall that came early in the season. So, what did we learn about variety performance in such a year?

Because of the warm winter, there wasn't any stress on the varieties for winter hardiness. It appeared that the early maturing varieties were favored by the rainfall pattern since they were able to mature before the extreme heat and drought hit them. Jagalene is a variety that had a very good year across the state including the eastern Nebraska. Trego, a white wheat, had good yields this year even though normally we would not recommend white wheat for eastern Nebraska because of the possibility of sprout damage. Two new Nebraska wheat varieties, Millennium and Wahoo, had good yields this year. A Kansas variety, 2137, did better in the southeast than in the south central zone while a new Kansas variety, 2145, did better in the south central zone.

Wheat varieties with a good record over several years in eastern Nebraska include 2137, Wahoo, and Millennium. Two varieties that looked good in their first year of testing were Jagalene and 2145. Alliance is an older variety that continues to be in the top half of the test.

Since we have no way of predicting next year's weather patterns, it is always advisable to plant more than one variety with diverse parentage and growth characteristics to take advantage of whatever weather pattern develops.

The NU Cooperative Extension publication, *Nebraska Fall-Sown Small Grain Variety Tests*, lists complementary varieties that you might consider planting this fall. It is now available at Cooperative Extension offices.

Len Nelson
Extension Crop Variety and Seed Production Specialist

Be prepared to treat fields

Planting wheat while grasshoppers linger

The abundance of grasshoppers in many parts of Nebraska this summer is likely to cause problems with establishing the winter wheat crop. With wheat planting quickly approaching, it's important to evaluate the need for control and be prepared to take action, if necessary.

Grasshopper numbers will drop through the fall and most grasshoppers will die off with the first hard freeze. That may not be soon enough for the wheat crop as much of our winter wheat may be getting established before the grasshoppers are gone for the year.

Standard thresholds for grasshopper control in fields and field margins indicate control is recommended if populations are eight or more grasshoppers per square yard in the field or more than 20 per square yard in field margins. These standard thresholds are likely too high for areas adjacent to newly emerging winter wheat because the grasshoppers are full grown and the amount of leaf material available is quite small. Defoliation and stand loss can progress rapidly, especially under warm dry conditions.

Grasshopper damage potential will decrease as we progress into the fall. It is best to plant later in areas of high grasshopper activity to reduce wheat damage potential. Borders can be replanted later in fall if grasshopper damage reduces stand. Seeding density in borders also can be increased to allow for more plant emergence. This may allow for a reasonable stand after grasshopper damage has run its course. Grasshopper control in winter wheat likely will be a compromise between effective control and affordability.

Producers have several options available for grasshopper control. They include: 1) border treatments to protect the wheat as it is emerging; 2) treating the field margin to protect the growing wheat; 3) using planting time applications for border control; and 4) planting treated seed in the borders.

Border treatments are perhaps the most versatile option for grasshopper control with fall planting. Asana or Orthene can be used in non-crop borders but cannot be used in growing wheat. Treating the non-crop borders may be the most practical strategy since there will be little foliage to treat in the emerging winter wheat. The best timing for applying a border control treatment is just before the wheat emerges. This will maximize residual activity as the wheat is establishing.

Insecticides that can be used for treating growing wheat in field margins include Lorsban, Furadan, dimethoate, Mustang and Warrior. These products will provide reasonable contact activity on grasshoppers, but residual activity will be limited because of minimal deposition on plant material.

Sevin bait is available in 2% and 5% formulations. It can be applied with a bait blower or whirly-bird type spreader. Even distribution on bare ground where the wheat will emerge is important and re-application may be required if rain occurs. The main advantage of bait is that it will be present for the grasshoppers to feed on both before and during wheat emergence.

Furadan 4F is registered for use as a border treatment applied at wheat planting under a statewide Special Local Needs (SLN) label at 0.25-0.50 oz/1000 row feet. The

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USDA hopper control funds target rangeland

This week a grasshopper control cost share program was announced in Nebraska. USDA-APHIS in Lincoln who will be in charge of this program has indicated that the program is for 'rangeland' control only. It will be similar to the historic program where 10,000 contiguous acres are needed with no more than 20% cropland. The cost share will be one-third federal, one-third state, one-third rancher. For any cropland included, the owner is responsible for the entire cost of control.

Rangeland grasshopper control at this time of year will be of little value because: 1) the damage to grasslands has already been done, 2) grasshopper populations are on a natural decline (even though there may be a lot left around), 3) grasshopper control with the insecticides labeled on rangeland will work very poorly on adult hoppers, and 4) perhaps 80-90% of the egg load has already been deposited for next year and the control situation for next year will not be improved.

The only potential benefit would be if grasshopper species that overwinter as nymphs (some bandwinged species) would be at very high numbers. These insects would be in their early instar stages right now. These are the hopper species that caused problems in Custer and Dawson counties last May. High populations of these are rare so the potential for treatable populations of these species in the fall would be low.

For more information on program specifics, contact Steve Johnson, area director of USDA-APHIS, at 402-434-2345.

Gary Hein
Extension Entomologist
Panhandle REC

New farm bill offers incentives for hard white wheat production

Nuplains, the first hard white wheat variety released by the University of Nebraska, was available to growers for planting in the fall of 2001. Nebraska growers, however, failed to embrace the production of hard white wheat last fall. A lack of financial incentive was the most commonly heard reason for this disinterest.

This year, the Nebraska Wheat Board, working with Nebraska Senator Ben Nelson, was successful in getting the hard white wheat incentive program into the Farm Security and Rural Investment Act of 2002. The program will be funded at $20 million over three years and will be administered by the Farm Service Agency. Although final details of the program have not been released, we believe the following provisions will be a part of it. We will update this information, if necessary, as soon as program details are released.

Effective for the white wheat crops produced (harvested) in 2003, 2004, and 2005.

- Both domestic and export production will qualify for the incentive payment.
- Hard white wheat (HW) grown under contract and also for open production qualifies for the incentive payment if the quality requirements are met.
- The incentive payments are capped at $20 million dollars over the three years of the program. Production enrolled in the program is capped at two million acres.
- Local markets for HW wheat will determine where production will occur.
- The HW wheat must grade #2 or better to qualify for the incentive payment.
- Protein will not be a determining factor of quality.

The acres of hard white wheat must be certified at the Farm Service Agency (FSA) office and the variety must be declared to the purchaser at time of delivery.

Certified seed will not be required; however, to encourage its use, HW wheat growers who use certified seed will be paid $2 per acre. The producer only qualifies for this $2 per acre payment during his/her first year of program participation.

In addition to the $2 payment if certified seed is used, all producers of hard white wheat which meets the quality requirements will receive an incentive payment of 20 cents per bushel up to a maximum of 60 bushels per acre.

The producer can collect an incentive payment any time during the marketing year by taking the elevator settlement sheet into the county FSA office. The settlement sheet must show that the wheat sold was #2 grade or better.

Given this new incentive program, wheat growers may wish to reconsider the role that hard white wheat can play in their production system. Many of the hard white wheat varieties have performed very well in the irrigated variety trials, and hard white wheat may be an especially attractive option for irrigated growers wishing to extend limited irrigation resources by integrating wheat into their rotations. For more information on hard white wheat, including variety descriptions and performance, seed suppliers, and general information, visit the University of Nebraska Web site at *www.hardwhitewheat.unl.edu.*

Drew Lyon
Extension Dryland Cropping Systems Specialist
Panhandle REC
Ron Stoddard
Executive Director
Nebraska Wheat Board

Sorghum variety field day Sept. 4

The Nebraska Grain Sorghum Producers Association (NeGSPA) and the University of Nebraska Cooperative Extension will co-host the 2002 Sorghum Variety Plot Field Day on Wednesday, Sept. 4.

Producers will be able to view yield trials and visit with seed company representatives, said Doug Nagel of Davey, NeGSPA President.

Program speakers will include: Barney Gordon, Kansas State University agronomist, *Sorghum's Role in Dryland and Irrigated Cropping Systems;* Robert Wright, University of Nebraska entomologist, *Insects to Watch for and Their Control;* and Paul Hay, University of Nebraska Extension Educator, *Making the Right Farm Bill Decisions for Your Farm.*

"This has been a difficult year for production agriculture," Nagel noted. "Our program will focus on sorghum's attributes as a drought-tolerant and water-conserving crop."

The program, scheduled to begin at 5 p.m., will be held at the Gerald Simonsen farm near Ruskin. (Directions: from the west edge of Ruskin on Hwy 136, go four miles south and 2.5 miles west; from Hardy, go 5 miles north and 0.5 miles east.) A meal will be provided after the tour.

Gudmundsen Lab Open House Aug. 28

The NU Gudmundsen Sandhills Laboratory Open House will be Wednesday, Aug. 28. A variety of University activities and commercial exhibits will focus on rangeland management and the beef cattle industry, including a producer panel on current issues such as drought. Gudmundsen is located two miles north and five miles east of Whitman.

Registration begins at 9:15 a.m. with activities scheduled through 4 p.m. Please RSVP by calling (308) 532-3611 , ext. 124, so meal reservations can be made.

Grasshopper control (Continued from page 186)

higher rates are the most effective and it is approved for border treatment only (60 foot maximum). The major drawback to Furadan is its safety to the applicator. Furadan should be injected through a closed system directly into the furrow through a microtube or with liquid fertilizers. This injection equipment is expensive, but will reduce safety concerns. It can be tank mixed with liquid fertilizer. If tank mixing is used, compatibility can be a problem and should be checked. Constant agitation is needed, and proper safety precautions need to be followed. Furadan gives protection at emergence and provides the most effective and consistent control because it is highly systemic and does not need water to be activated.

Granular materials that can be used at planting include Thimet and DiSyston. Thimet 15G should be applied in furrow at 1.6 oz/1000 row feet. DiSyston 15G should be applied in furrow at 1.6 oz/1000 row feet. These products give protection at emergence, but the granules may not be effective under dry conditions. Appropriate metering devices should be used to meter out the granules on the drill.

Gaucho 480 seed treatment is registered for wheat, but the label does not include grasshoppers. We have done trials that show that it does suppress grasshopper feeding and reduces populations as wheat is emerging, but it appears that, much like other products except Furadan, heavy populations will be able to overwhelm its ability to control. It is approved for rates of 1-3 ounces per hundred pounds of seed. Good data on its effectiveness against grasshoppers are limited and it is costly, but it looks promising for use as border protection. The two-ounce rate is likely the best compromise between effectiveness and cost. Plants are protected from emergence and the product is easy to handle. Be aware that the seed must be treated by a certified seed treater and not by the farmer.

No options for grasshopper control in winter wheat are ideal. Heavy hopper populations can overrun all of these control options. It is best to use an integrated approach by including planting strategies (planting date, rate) with appropriate chemical options, if necessary.

Gary Hein, Extension Entomologist, Panhandle REC

Field updates (Continued from page 182)

favorable. See the July 26 *CropWatch* for more information on the soybean aphid or visit the UNL Department of Entomology site at *http://entomology.unl.edu/newsflash/soybeanaphid2002.htm*

Paul Hay, Extension Educator in Gage County: At last a little optimism. Recent rain will help soybeans make a run at a harvestable crop.

Rumors are rampant in southeast Nebraska about nitrate death losses of cattle. The truth is a lot tamer and more troublesome. Some of the losses have been associated with management errors, including not providing transition time, founder, and hauling water in fertilizer tanks. I recommend testing the feed, transition cattle over to the feed slowly, don't grub the stubble, have clean water available, observe your cattle and blend feeds.

Tom Dorn, Extension Educator in Lancaster County: Lancaster County has received 3.05 inches of rain since June 1. Normal rainfall during this period is about 9.1inches. We received a shower (about 0.5 inch) and hard winds last Friday night, but the moisture was too little, too late to help dryland corn. Much of the dryland corn in the county will yield below 20 bushels per acre, but a few fields receiving rain at critical periods could make 50-70 bushels. Soybeans have been aborting pods all summer. Most plants have only one productive pod per node, if any at all, on most stems.

Many producers are using both corn and beans as a forage source for cattle. Corn is being made into silage and corn hay. Few producers are green chopping or direct grazing corn. Several producers have cut soybeans for hay or silage and some are having cattle direct graze in it.

Andy Christiansen, Extension Educator in Hamilton County: Soybean aphids have been confirmed in Hamilton County.

The **Corn Grower Variety Trial** and UNL Soybean/Phosphate Study field day will be 11 a.m. Aug. 30 at the site two miles south of the I-80 Hampton exit.

Lime now for spring planting of alfalfa

When problems appear with seedling alfalfa, many times a low soil pH may be at the root of the issue.

Alfalfa grows best in soils with a neutral pH of about 7. When soils are acid, with pH 6.2 or lower, alfalfa does not grow as well. At a low pH, alfalfa roots are less able to absorb nutrients from soil. In addition, the root nodules that convert nitrogen from the air into something plants can use have difficulty forming and working effectively in acid soils.

Most sandy, low organic matter soils as well as heavier ground that has been tilled and fertilized with nitrogen for many years have become acid and require lime.

It takes time for lime to really neutralize much acidity so apply lime at least four months before planting alfalfa. If you expect to seed a new field of alfalfa next spring, add lime now, if needed. The lime application costs are less than the costs of a stand failure or several years of low alfalfa yields.

Bruce Anderson
Extension Forage Specialist

Seedbed conditions and seeding equipment -- factors determining when to plant winter wheat

At the NU Dryland Farm south of North Platte this has been the driest period (Sept. 1, 2001 - Aug. 19, 2002) since record-keeping began in 1907 with less than 10 inches of precipitation. May -July 2002 has been the eighth warmest period since 1907. Even if we get average rainfall the rest of the year, 2002 will still be the driest on record. With conditions like these going into wheat planting season, many producers are weighing the risks and wondering whether it's better to plant winter wheat now or wait for rainfall to improve soil moisture.

For tilled seedbeds (usually fallow) where the seed can be placed in firm soil at the correct seeding depth for the winter wheat variety, the crop producer's best option is probably to go ahead and seed even if the soil is dry and the wheat seed will not germinate immediately. Wheat requires 41% seed moisture for germination which is 9% more than corn (32%) but 10% less than soybean (51%).

The maximum depth a winter wheat variety with a short length coleoptile can be planted is 2 inches in a silt loam soil. In extremely fine-textured soil with a high clay content, reduce planting depth by up to ½ inch. In coarse-textured soils with lots of sand, increase planting depth up to ½ inch. For winter wheat varieties with medium length coleoptiles these seeding depths can be increased by ½ inch; for varieties with long coleoptiles seeding depth can be up to 3 inches with the adjustment for the soil texture. Warmer soil tends to shorten the coleoptile length. The coleoptile penetrates the soil and results in seedling emergence. If the seed is planted too deep, beyond the elongation of the coleoptile, seedlings cannot emerge and the result will be a poor stand.

If the seedbed is loose and the seed would be placed in loose soil, delay seeding until there is moisture is received to firm the seedbed. Seed placed in a loose seedbed is one of the leading causes of winter injury - root and crown rot. (See the Aug. 9 *CropWatch* for more information.)

Wheel tracks are quite visible where they have firmed the soil in a stand of winter wheat planted in a poor, loose seedbed.

Before beginning to plant, make sure openers and disks are not worn. For hoe drills, good quality spear point or eagle back openers usually improve performance. Hoe drills, especially those with wider row spacing, are able to plant the seed deeper because they can build a ridge and plant in the furrow. Slow ground speed so adjacent rows are not covered with soil. The seeding depth then becomes the soil cover over the seed. If the seedbed was not tilled too deep, it usually is possible, with the hoe drill, to place the seed in firm, moist soil. Deep tillage or applying anhydrous ammonia with knives can dry out the soil, so it could be impossible to place the seed in firm moist soil even with a hoe drill.

As with everything, there are drawbacks to the hoe drill. The biggest is that if a hard rain occurs, the ridges will be destroyed and the seed, or developing plant, will end up under too much soil cover.

Seeding with a disc drill in a loose seedbed almost guarantees disaster and should probably be delayed until there is moisture.

See page 190 for table of end-of-planting dates for insurance use.

For continuous cropping do not till. If you do till, the seedbed will dry out to the depth of tillage. The soil should be firm after soybeans are harvested. If planting winter wheat this year, make sure the drill is running lower in back than normal. Transfer more drill weight to the back of the drill and add extra weight to the drill. This will allow for penetration into dry, hard soil, forcing the seed into the soil and insuring seed to soil contact. Also, don't plant wheat too shallow. When using disc drills, plant at a depth of 2 inches.

Do not seed winter wheat much earlier than the suggested seeding date for your area. *(See page 183)* Early seeding leads to problems with diseases such as wheat streak mosaic and insects such as the hessian fly.

As with all these rules there are exceptions. The biggest is make sure you seed by the required date for crop insurance in your area *(see table on page 190).*

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Wheat seedbeds

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Table 1. Final planting date for winter wheat (grouped by dates) for crop insurance.

October 5, 2002

Banner
Box Butte
Cherry
Cheyenne
Dawes
Keye Paha
Kimball
Logan
Loup
McPherson
Morrill
Rock
Scotts Bluff
Sheridan
Sioux

October 10, 2002

Antelope
Boone
Buffalo
Burt
Cedar
Chase
Cuming
Custer
Dawson
Deuel
Dundy
Frontier
Furnas
Garden
Garfield
Gosper
Greeley
Hall
Harlan
Hayes
Hitchcock
Holt
Howard
Keith
Knox
Lincoln
Madison
Perkins
Phelps
Pierce
Red Willow
Sherman
Stanton
Thurston
Valley

October 15, 2002

Adams
Butler
Cass
Clay
Colfax
Dodge
Douglas
Fillmore
Franklin
Gage
Hamilton
Jefferson
Johnson
Kearney
Lancaster
Merrick
Nance
Nemaha
Nuckolls
Otoe
Pawnee
Platte
Polk
Richardson
Saline
Sarpy
Saunders
Seward
Thayer
Washington
Webster
York

After drought test soil for nitrogen

Due to the unusual weather conditions of 2002, it is especially important to test soil for soil nitrate-nitrogen before estimating nitrogen needs of a winter wheat crop. Most important is the 0-8 inch layer, but there may be much available nitrogen below 8 inches. A sample to 36 inches is recommended, but admittedly may be difficult to collect due to soil hardness.

Several things may contribute to increased soil nitrogen availability and a reduced need for nitrogen fertilizer for the winter wheat crop. Greater nitrogen carry-over may occur due to poor performance of the previous crop. Also, more organic nitrogen may be available due to increased mineralization of soil organic matter associated with cycles of severe drying of the soil followed by rainfall. Less nitrogen loss to leaching and to denitrification than normal occurred in 2002 for rainfed cropland. Given the low soil water reserves going into the winter wheat season, yield goals need to be reconsidered and the nitrogen fertilizer rate should be adjusted accordingly.

For more information on fertilizing winter wheat, check the following newly released publications which should now be available at your local Cooperative Extension office:

Fertilizing Winter Wheat I: Nitrogen, Potassium and Micronutrients – Soil testing, recommended rates, and timing for fertilizing winter wheat with nitrogen, potassium, and micronutrients.

Fertilizing Winter Wheat II: Phosphorus – Soil testing and residual phosphorus application in wheat; worksheets to calculate the recommended phosphorus rates for various application methods are included.

Charles Wortmann
Extension Soils Specialist

Weed control

(Continued from page 184)

For fall control of winter annual broadleaf weeds such as mustard and pennycress, growers should use one of the sulfonylurea herbicides labeled for wheat. These include Ally, Amber, Finesse, and Peak. Maverick Pro also will control many of these weeds, although Maverick Pro provides poor control of blue mustard and is more expensive than the other sulfonylurea herbicides.

Some wheat varieties are more sensitive than others to fall application of these herbicides. Growth hormone imitator herbicides like 2,4-D or Curtail should not be applied to winter wheat in the fall before plants have at least four tillers, or injury may occur to the wheat. The injury may not be noticeable until the next spring when wheat heads may become trapped as they try to emerge from the stem. See EC-130-D, *Guide for Weed Management in Nebraska*, for more information.

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Solution Days 2002

Unbiased, research-based information on corn and soybean production in Nebraska will be the focus of three upcoming field days, Aug. 27-29, near Goehner.

Solution Days 2002, sponsored by UNL Cooperative Extension, Syngenta Seeds and Crop Protection, and the Nebraska Soybean Board, will be held at the Syngenta Research Farm near Goehner just south of the I-80 Exit 373 interchange.

This educational program is open to the public, however, pre-registration is required to waive the $125 registration fee at the gate. Contact the Nebraska Soybean Board at 1-800-852-BEAN to pre-register.