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Too late to spring seed winter wheat?

Dry conditions throughout much of Nebraska last fall and winter have resulted in some poor winter wheat stands. Growers who want to replant poor stands (see article on replant decisions in January 28, 2000 Crop Watch) or increase wheat acreage can plant winter wheat in late winter. The winter wheat must be planted early enough to assure adequate vernalization of the seedlings, a process necessary for normal development and heading in winter wheat. In eastern Nebraska, it may already be too late to plant winter wheat. While possible in western Nebraska, planting after March 1 is risky because imbibed seeds or seedlings must experience four to six weeks of night time temperatures below 40°F.

The risk of inadequate vernalization can be reduced by selecting wheat varieties with shorter vernalization requirements. Winter hardiness is a less important trait in spring-planted winter wheat and varieties from Kansas and Colorado have generally performed well in this environment (see table).

Wheat can be planted directly into thin or dead spots in existing stands or planted in new stands. Plant at the normal depth (one to two inches deep), but use higher than normal seeding rates because less tillering will occur in the spring-planted wheat. A seeding rate of 1.5

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Two-year average grain yields for spring-planted winter wheat at Sidney from 1998 and 1999.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Two-year average grain yield bu/acre</th>
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<tr>
<td>Akron</td>
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<td>Yuma</td>
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<td>Halt</td>
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<td>Buckskin</td>
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Monitor small grains for signs of disease, stress

Wheat

Winter wheat stands show improvement following the recent warm weather and precipitation, but many fields still appear patchy due to uneven emergence. A recent check of the wheat variety trial near Fairbury along with fields in Lancaster, Gage and Jefferson counties found the wheat generally to be healthy.

Our biggest concern going into March is crown and root rot brought on by drought stress during fall and winter. Examination of plants from the variety plot and farmer fields found the roots and crowns generally to be healthy. In a few samples there was some discoloration of the subcoronal internode, but the crowns and roots were healthy. If crowns remain fairly free of infection, the stand should “green up” without any problems.

To diagnose crown and root rot, remove suspect seedlings, wash the roots and crowns free of soil and

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Ralph Anderson, Extension educator in Buffalo County: We have had slightly less than 2 inches of moisture the last two weeks. Farmers who started field work this week have found nearly ideal topsoil conditions for applying anhydrous and tillage.

Mark Svoboda, UNL water/climate resource specialist, has indicated that we would need eight inches of gentle rain before planting to return our subsoil moisture to average condition. The probability of that is between 5% and 10%. That makes the drought situation more serious than many of us may have realized. We continue to be encouraged by the recent moisture.

The Platte Valley is blessed with significant underground water to irrigate crops in a dry season; however, the rapidly rising energy costs threaten to put a severe strain on cash flow projections, especially if we have a dry year.

Andy Christiansen, Extension educator in Hamilton County: Anhydrous fertilizer is being applied this week. Not a whole lot was applied in the fall due to the tough soil condition, but no one seems to be in a rush. Things seem to be working a little better, but the subsoil is still hard and dry.

Ray Weed, Extension educator in Kimball and Banner counties: We have had very mild, well above-average temperatures. Consequently, some field preparation work is already in progress.

It’s not too early for wheat and alfalfa producers to begin scouting for army cutworms. If there is delayed green-up in alfalfa or wheat, army cutworms may be the cause. Alfalfa and wheat producers also may want to check for aphids in their fields now. With the mild winter we’ve had, insects will become active early this spring.

Gary Hall, Extension educator in Phelps County: Much needed moisture has encouraged farmers as they anticipate planting.

Some field work has been done with diskings and stock shedding. Wheat is breaking dormancy and greening up.

Paul C. Hay, Extension educator in Gage County: The wheat planted in soybean stubble is up and going. Stands look okay, but yield predictions are still very modest. Most plants will have few tillers and may be a bit later or the ripening period may be hurried along by heat, which is just as bad.

Lots of anhydrous activity and straightening out of seed orders for spring planting. Some oats were planted this week.

Kansas pest report

Some alfalfa fields in south central and southwest Kansas have been treated for army cutworms. One field in Kiowa County averaged 6.4 per crown while only two miles away a field averaged less than one per crown. Aphids also are beginning to increase.

A number of wheat fields in southwest and southcentral Kansas have been sprayed for greenbugs. Because of poor growing conditions spraying began last fall and has continued to the present. There have been potty infestations of army cutworms in wheat in southcentral and southwest Kansas with numbers up to 12 per row foot being found.

Kansas Department of Agriculture Plant Protection Division
Be alert to army cutworms in wheat, alfalfa

Eastern Nebraska

Army cutworms are a common occurrence in western Nebraska wheat and alfalfa. While not as common a pest in eastern Nebraska, in the past they have sometimes held back the initial green up of alfalfa in the spring. This winter was very mild, so lack of green up could very well mean an insect problem instead of the weather related winterkill typical of some recent years.

Army cutworms can be serious pests of wheat and alfalfa. The eggs are laid in the fall, hatch, the larvae feed for a short time and then overwinter in the soil. They are one of the first pests seen in Nebraska every year because they begin feeding as soon as their host crop comes out of dormancy and starts to grow.

Army cutworms are brownish-black without any distinguishing markings and will be found in the soil around the crowns of the plants during the daytime. They feed on the foliage above the surface of the ground at night. After completing development the adult moths fly to the Rocky Mountains before returning to complete the cycle.

Reports of the army cutworm in wheat and alfalfa are increasing in Nebraska. Extension entomologists suggest scouting for them rarely observed, but the delay in green up may reduce yields of the first cutting if cutworms are numerous. Consider treatment in established

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Small grain diseases (Continued from page 11)

examine those tissues for dark brown lesions. Split the crowns with a sharp knife to detect rot. Healthy crown will be white while diseased ones will appear discolored.

As the growing season rapidly approaches, wheat growers in eastern, central and west central Nebraska should be alert to the onset of soilborne wheat mosaic symptoms. This virus disease commonly occurs in many wheat fields during April. In the field soilborne mosaic appears as irregular patches of yellow or pale green wheat. The pattern may conform to low areas or drainage paths, or just be generally distributed across the field. Leaf symptoms on individual plants show a mosaic pattern. Symptom expression is most evident at temperatures below 70°F. Losses are not severe unless we have an extended cool period in the spring.

Oats

The best protection against disease losses in oats is to plant disease tolerant varieties. The most serious disease of oats is the virus disease barley yellow dwarf. This virus is carried by aphids, whose populations may be high this spring due to the mild winter. To avoid significant oat yield losses due to barley yellow dwarf, growers should:

1) plant oats as early as possible for their growing area and,

2) select barley yellow dwarf-tolerant varieties. Oat varieties rated as moderately tolerant or tolerant to barley yellow dwarf are Blaze, Chaps, Don, Gem, Horico, Jim, Jud, Larry, Ogle, Prairie, Rodeo, Settler and Troy. With barley yellow dwarf, prevention is the only effective control method. Trying to control the disease in spring by spraying with an insecticide is not all that effective.

John E. Watkins
Extension Plant Pathologist
NU Diagnostic Clinic changes

The NU Cooperative Extension Plant and Pest Diagnostic Clinic has undergone several changes with the start of the new year. New prices were set in January to help recover costs of materials used for diagnosis and to help provide for needed lab improvements. In addition, a new director is being sought. (As of December 1, 1999 I moved into a specialist position with crop disease responsibilities in soybeans, alfalfa, ornamentals, and trees.)

Pricing structure

The Clinic offers services related to identification of insects, diseases, weeds and herbicide injury. Changes in the pricing structure are outlined below:

**Standard sample — $10**: The standard sample fee is applied to all samples that can be diagnosed with only visual and/or microscopic examination.

**Additional charges for services**
- Culturing for pathogen identification costs an additional $10. This fee helps cover the cost of media and the time involved in identifying the causal agent. Other additional costs include:
  - SCN Assay - $10
  - Miscellaneous Elisa Test - $15
  - Goss’s Culture - $10
  - Stewart’s Elisa - $15
  - Virus Screen (Protein based) – $15
  - Rare Species ID - $10

This pricing structure was initiated after reviewing prices charged in adjacent states. The current pricing allows for full recovery of supplies and adding personnel in the laboratory to improve the quality of the diagnosis. Prices had not changed since 1994.

We are accepting applications for the clinic coordinator and hope to fill the position by June 1, 2000. In the interim, Jane Christensen is coordinating the clinic on a part-time basis. Christensen was the diagnostician at Kansas State University for several years before moving to Nebraska.

If you have questions regarding the Plant and Pest Diagnostic Clinic, contact Christensen directly since I am no longer associated with it. Please feel free to call the Clinic at (402) 472-2559 for additional information on collecting, packaging, and shipping samples or visit a Web site at http://www.iarm.unl.edu/cropwatchnews/ppdc.htm

**Extended Plant Pathologist**

Loren J. Giesler

**Army cutworms**

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fields when four or more cutworms per square foot are found. In fields less than a year old, food reserves in the roots are limited and feeding may be enough to kill individual plants and cause stand loss. Consider treatment if two or more cutworms are found per square foot in newly seeded alfalfa. Wheat recommendations are similar, with stressed wheat at the lower level of two per square foot.

Ambush, Pounce, Warrior, Baythroid and Lorsban (chlorpyrifos) are compounds that should control army cutworms in alfalfa. Warrior is registered for use on wheat.

**Keith Jarvi, Integrated Pest Management, Northeast REC**

**Western Nebraska**

Army cutworms have been seen damaging alfalfa and wheat in western Kansas and there have been increasing reports of their presence in central Nebraska. The extent of the problem is not known; however, growers are advised to monitor alfalfa and wheat fields, particularly if they appear to be greening up slowly.

Russian wheat aphids have been detected in western Nebraska. We have yet to see economic levels, but the fact of their presence indicates we may see much more of this insect than we have for several years. Growers should be on the lookout for this insect as they check fields that are breaking dormancy.

**Gary Hein, Extension Entomologist, Panhandle REC**

**Wheat**

(Continued from page 11)

to 2 times the normal rate should be used, for example, 90 lb/A in dryland or 120-150 lb/A in irrigated production. Starter fertilizer applied with the drill gets the plants off to a good start.

Growers should be able to tell if the wheat has vernalized by May 21. If it has, the wheat will begin to joint and the growing point will be elevated above the crown. If not, the wheat can be grazed or a summer crop can be planted.

Yields of spring-planted winter wheat are generally 60% to 80% of fall-seeded wheat and are usually slightly better than spring wheat yields. Interseeding spring wheat with winter wheat is not recommended. The spring wheat will mature about two weeks later than the winter wheat, upsetting harvest plans and increasing loss due to shattering. Mixing the two wheat classes will often result in significantly discounted prices at the elevator because it is graded as mixed wheat. Spring wheat is frequently damaged by hot summer weather, producing shriveled kernels, low test weight, and reduced yields. Also, the spring wheat varieties available are limited in their adaptation to this area, as most have been developed for cooler environments.

**Drew Lyon, Extension Dryland Cropping Systems Specialist**

**West Central REC**

**David Baltensperger**

**Extension Plant Breeder**

**Panhandle REC**
Weed management changes in a dry year

Growers may want to consider the potential for reduced precipitation and soil moisture this year when planning their weed management strategies.

Drought conditions are apt to affect weed management in two ways:

1) Various weed species may respond differently to the lack of precipitation. What should we expect for weed species this year? Will the precipitation deficit impact emergence dates of some weed species? Will we see a shift in species composition?

2) The strategies we use to manage weeds may need to be adjusted, keeping in mind the possibility of extended periods of low precipitation.

Weed response to drought

Any response specific to a given weed will be observed over several years — one year may not necessarily impact species composition across most of the state. It takes several years for weed communities to respond to drought conditions.

In the short-term, producers may notice a slight shift in species dominance. Several weed species, including kochia, Russian thistle, and field sandbur are extremely drought tolerant. A year with extremely low precipitation may allow them to compete much better than species such as Pennsylvania smartweed. This does not mean they will necessarily be more abundant, but rather more competitive overall.

Producers also may notice a difference in the number of species germinating throughout the growing season. Many dryland fields experience two to four weed flushes each year. Weed species, including biennials, warm season annuals, perennials, and winter annuals depend primarily on soil moisture and soil temperatures for germination. The biggest problems for most crops are the summer annual weeds. In a drought season, many summer annuals may germinate together, taking advantage of available moisture, reducing the number of flushes throughout the season.

Practical weed management strategies

In order to choose the best weed management strategies, producers should understand the impact of drought on those strategies. Lack of precipitation leads to two major problems. The first is reduced performance of soil applied herbicides and the second is plant stress.

In a drought year, it may seem that preemergence herbicides may not be a good idea as they may not perform under low soil moisture conditions. Remember that it only takes one rain shower greater than 0.5 inches to adequately incorporate most soil applied herbicides. This will likely occur at some point after application.

Tillage can incorporate preemergence herbicides reducing the need for moisture. Tillage, however, wastes water and should be avoided in a dry year. Another strategy might be to use a preplant herbicide, providing a greater window for precipitation before weed seed germination. Another strategy is to use a half rate of a preemergence herbicide followed by a very good postemergence program. This is not to say that producers should rely strictly on a postemergence herbicide program, but to be ready with one if need be. Keep in mind, the herbicide manufacturer will not guarantee half rate applications. Research in 1998 at Clay Center showed that reduced rates of Harness Xtra followed by Roundup Ultra provided similar results to full rates of Harness Xtra. This may not be a good idea for heavily infested fields.

Many other strategies can be used as well. Cultivation may not provide the best utility because it leads to greater soil moisture loss. Postemergence herbicides alone also may provide limited activity if plants are under drought stress. The bottom line is, do not rely heavily on any one strategy.

Overall, drought conditions may not have a huge impact on weed management in the near future. Producers can counter most problems by looking ahead and adjusting management strategies accordingly. By integrating a variety of strategies, producers can cover all the possibilities that may occur throughout the growing season, taking advantage of precipitation when it occurs. This year a few extra inputs up front may provide cheap insurance.

Jeff Rawlinson, Extension Technologist Weed Science
Alex Martin
Extension Weed Specialist
Corn flea beetle survival expected to be above average; increased Stewart’s wilt may follow

Due to the mild winter weather, corn flea beetle survival is expected to be above average this year. If the sum of the monthly average temperatures for December, January and February is greater than 90, winter survival of flea beetles is expected to be high. Except for parts of northeastern Nebraska, most of the state greatly exceeded 90 this winter (see map).

Corn flea beetles overwinter as adults in protected areas near corn fields, become active in April, and feed on a variety of grasses before corn emerges. Corn flea beetles can directly injure corn by feeding on seedling plants; but probably more importantly, they vector the bacterium which causes Stewart’s wilt. This bacterium overwinters in the gut of the flea beetle. In 1999 Stewart’s wilt was found in more areas of Nebraska than had been previously reported, leading to increased concern for an outbreak this year. Early season feeding by the corn flea beetle and vectoring of the bacterium can lead to the wilt stage of the disease, often killing the plant.

To minimize damage caused by flea beetle feeding:
- Avoid hybrids or inbreds known to be more susceptible to Stewart’s wilt. (See seed catalog or local seed company representative.)
- Avoid early planting dates if susceptible inbreds or hybrids are planted.
- Scout for corn flea beetles on seedling corn. Treatment may be warranted on dent corn if 50% of plants show severe flea beetle injury (plants look silvery or whitish, or leaves begin to die), and five or more flea beetles per plant are found.
- If susceptible inbreds or hybrids were planted, an insecticide may be appropriate when two to three flea beetles per plant are present and 10% of the plants show severe flea beetle injury. A variety of foliar insecticides are effective in controlling flea beetles, including Lorsban 4E, 2-3 pt/acre; Sevin XLR Plus, 1-2 quarts per acre, Asana XL, 5.8-9.6 fl. oz per 1000 row-ft; Lannate LV 0.75-1.5 pt/acre; Pounce 3.2 EC 4-8 fl. oz per acre; and Warrior T 2.56-3.84 fl. oz per acre.

Bob Wright
Extension Entomologist
South Central REC

Consider oats as a forage booster in thin alfalfa

With dry subsoils and weather forecasters predicting drought, growing extra forage this spring might be wise. Oats can be grazed earlier than anything else you plant this spring. Drill about three bushels per acre as soon as possible and oats will be 6 to 8 inches tall and ready to graze by mid-May. With good soil moisture and 30 to 60 pounds of nitrogen, oats can provide a couple months of grazing for one or two cows per acre. For young stock, cut oats just as it is heading out. This hay can have nearly 10% protein and 65% TDN and be very palatable. Another option is to increase yield by about one-third and cut oats in the milk stage for hay with 8% protein and 55% TDN. This feed is good for stock cows.

Oat hay cut at dough stage or with mature seed often is less palatable and the leaves and stems are low quality; however, it can make good silage if chopped fine and packed tight. Oats also can be used to stimulate yield from a thin, worn out alfalfa stand. If alfalfa stands suffered winter injury, consider drilling a bushel of oats per acre directly into your alfalfa as soon as possible. Then cut your hay like normal. With this year’s high drought potential, you may need all the forage you can grow.

Bruce Anderson
Extension Forage Specialist
Banding preemergence herbicides

Banding was the application method used by many of the farmers who experienced damage from the herbicide Balance in 1999. Understanding the factors involved may help limit potential problems this year.

Banding herbicides behind the planter is an effective method of weed control in row crops. Since the herbicide is applied at the same time the corn is planted, application is timely. Banding also reduces herbicide costs. With banding, timely cultivations are essential. If cultivations are not timely, yields may decrease and weed seed may be produced to contend with in next year’s crop. Cultivation also destroys crop residue and reduces soil moisture.

The success of banding herbicides depends on many variables. The correct nozzles for banding are those that have uniform coverage across the spray pattern, for examples 9503E. The E is for even flow across the spray pattern. An 80° broadcast nozzle (example 8003XR) with a 15-inch pattern will put a 2X rate over the row. (See Figure 1.) The pattern in Figure 2 is with the correct nozzles, an “E”. The correct nozzle height is very important. A 2-inch change in nozzle height (8 to 6 inches for 95° or 9 to 7 inches for 80° nozzles) changes the pattern width from 15 to 12 inches. This would increase the rate 20%.

The height of the nozzle is affected by several factors even though it may have been correctly set by the farmer before he started to plant. A planter set in the farm yard or field edge may not go into the soil as deeply as when it’s operating in the field with softer soil. Another factor is a change in planting depth by the farmer. Nozzles usually wear in the center which reduces the area covered. Also the wear may increase the rate in the center of the area sprayed. All nozzles — even new nozzles — should be checked for flow rate and spray pattern.

Another factor in setting the nozzle height is the soil topography after planting. In ridge-till the farmer may lower the planter/ridge-clearing device to get better weed control on the edges — which again increases the rate in the center. Where farmers move a lot of soil at planting (to get to moist soil) a problem may occur after a rain or irrigation moves the herbicide to the center of the row.

Another problem can occur when saddle tanks lack adequate agitation and fail to keep the herbicide in suspension. Many herbicides need to be preslurried before they’re added to the tank. Calibration is of utmost importance. The speed of the planter must be kept the same as when the machine was calibrated. Spray pressure is another variable.

Density of the spray solution affects the nozzle flow rate. A farmer may be use to the flow rate of a nozzle when he sprays liquid fertilizer, but not realize that the flow rate will increase 13% with water.

The planter’s plumbing also is a factor. The first nozzle that receives the spray solution may have high pressure (higher flow rate) than the other nozzles. This is especially a problem if small hose sizes are used.

Robert N. Klein, Extension Cropping Systems Specialist University of Nebraska

Fig. 1 When incorrect nozzles (broadcast nozzles) are used for banding herbicides, a 2X rate is applied in the center.

Fig. 2 Evenflow nozzles (E) are used for banding and provide an even amount of spray.
Soil moisture profile generally dry; plan for more efficient water use

Lack of precipitation in fall and winter can leave dryland cropping areas deficient in soil water content. With below normal precipitation in August and September, soil water content in silt loam or silty clay loam soils may be up to 8 inches below field capacity. Sandy loam soils could be up to 5 inches below field capacity.

Deep rooted crops, like dryland alfalfa, can remove water from 10 feet or more below the soil surface. This means that net precipitation may need to replace more than 12 inches of water for dryland alfalfa.

In Nebraska, about 40% of the annual off-season recharge comes in September and October. Winter snow melt accounts for about 20%, and the remaining 40% of the annual recharge occurs during March and April. Approximately 70% of the precipitation recorded during these periods helps recharge the soil profile. Net precipitation between September and May for eastern Nebraska usually is about 8 inches, central Nebraska receives around 6 inches, and western Nebraska about 4 inches. While the future is always uncertain, below normal precipitation last fall and winter has reduced the likelihood that the soil profile will be near field capacity at planting. Producers should consider their crop production options in the event that precipitation does not refill the profile prior to planting.

Determining current soil water content

One of the most popular methods of determining soil water content is referred to as the hand-feel method. The hand-feel method estimates soil water content in the field by how the soil looks and feels. A soil sample is obtained using a soil probe. This is typically done in either 6-inch or 12-inch increments and at four to five locations in the field. A detailed description of how to use the hand-feel method is presented in NebGuide G84-690: Estimating Soil Water Content by Appearance and Feel. This publication is also available at the UNL Cooperative Extension Publications Web site at http://www.ianr.unl.edu/pubs/irrigation. A similar publication entitled: Estimating Soil Moisture by Feel and Appearance is available at Natural Resources Conservation Service Offices. Each publication includes photos of different soil moisture levels for various soil textures.

Dryland cropping systems

Production practices may need to be adjusted to insure that the current year’s crop has access to whatever soil water is available. For example, alfalfa can greatly deplete available soil water, so destroying the alfalfa and tilling the surface in preparation for corn or soybeans would not be wise if dry conditions persist.

When precipitation is low, consider practices that conserve water, including:
1) provide good weed control;
2) plant through dry soil surface to soil moisture below;
3) plant narrow row beans to reduce weed competition and soil evaporation; and
4) plant genetically altered varieties to eliminate the need for tillage.

Other cropping system considerations might include:
1) adjust plant populations to 18,000 for corn and 150,000 for soybeans;
2) plant drought-resistant crops like grain sorghum or soybeans; and
3) consider small grains as a source of forage since water use is lower.

Environmental stewardship would suggest that producers think beyond the current cropping season when deciding on the practices to use each season. Each producer should consider the ramifications of these practices in the event of a multiple-year dry period.

For example, Producer Jones plants dryland soybeans in a year when the soil profile was not fully recharged prior to planting and projections were for well below normal precipitation during the growing season. He double-disked the field prior to planting to incorporate a pre-plant herbicide. Tillage incorporated most of the corn residue from the previous season and 0.5 to 0.75 inches of water was lost from the soil profile due to the soil disturbance. Cloddy soils resulted in poor soil-seed contact and soybean emergence was erratic.

The dry conditions continued through the summer and wind erosion greatly reduced plant stands and yield. Wind erosion worsened during the offseason due to lack of (Continued on page 19)
Irrigation (Continued from page 18)

Residue from the soybeans. This scenario reinforces the need to limit tillage so that crop residues are not destroyed and can protect the soil from wind erosion and so that moisture remains in the soil where it is available for grain production.

Irrigated cropping systems

During periods of below normal precipitation, it is critical that irrigation equipment be in good working order before planting. If the soil is not recharged by precipitation, early season irrigation may be necessary to insure a uniform plant stand and early season vigor. Irrigation system failure could be devastating if the field has sandy soils or the soil profile is not near field capacity prior to mid-June. Reliable systems are crucial to maintaining yields.

Irrigated fields could be depleted by over 3 inches on silt loam soils and 2 inches on sandy soils due to use of soil water late in the previous growing season. Producers with center pivots can easily recharge the soil profile after emergence and early in the growing season. This is true particularly if the system is reliable and the system capacity can supply 2 inches or more of water per week.

With lower capacity systems begin refilling the soil profile earlier in the spring. This is necessary to keep from being caught short of water during the high crop water use periods from early July through late August. Crop residues reduce surface crusting, so maintain as much surface residue cover as possible. Sprinkler irrigating with a large amount of water on a soil unprotected by crop residues can lead to surface crusting and emergence problems. If possible, do not irrigate until the crop emerges unless water is required to activate a herbicide or for germination.

Surface irrigators have two options for refilling the soil profile.

By hilling the fields shortly after planting, an early season application can refill the soil profile. Since application efficiency is lower with surface irrigation, it will take longer for irrigation to recharge a depleted profile. Irrigating well before the normal irrigation season could result in a considerable time lapse between irrigations. Some soils could develop surface cracks that make the next irrigation equally difficult and nonuniform.

Pre-plant furrow irrigation is an option if surface soils are extremely dry; however, carefully consider the potential cost. Most of the cost involves labor availability and the timeliness of crop production practices. Pipelines will need to be laid out, furrows may need to be re-established, and crop residues may need to be moved out of the furrow in order to irrigate uniformly.

In addition, early irrigation over fall-applied fertilizer may cause nitrate leaching and the reduced availability of nitrogen may limit yields. Pre-plant irrigation also will leave the soil wet when planting operations must be done. Compaction is greatest when tillage and planting operations occur when the soil is at or near field capacity. The combination of these negative factors would seem to favor postponing furrow irrigation until after planting.

Whichever choice is made, good irrigation scheduling practices can maximize use of the applied water and rainfall. Most soils will not need to be completely refilled. While rainfall may be below normal, there will be rain and some events may provide substantial amounts of water. Leaving some room in the soil for rainfall will help make the best use of water.

Summary

Producers must be conscientious when selecting cropping practices when the soil water reservoir is not recharged by off-season precipitation. Dryland producers should be diligent in monitoring soil water content in their fields prior to planting. If the profile remains dry up to planting time, changes in cropping practices may be beneficial. Eliminating tillage and maintaining crop residue cover can help insure that the plant will have access to the greatest amount of water during the growing season. Irrigators should perform maintenance on their irrigation systems and be prepared to initiate irrigation earlier in the growing season. The goal should be to use good irrigation scheduling practices and to have sufficient soil water available by mid-June.

Bill Kranz, Extension Irrigation Engineer, Panhandle REC
Brian Benham, Extension Water Management Engineer, South Central REC
C. Dean Yonts, Extension Irrigation Engineer, Panhandle REC
WeedSoft options expanded to better meet individual needs

The updated WeedSOFT 2000 V 5.0 weed management software is now available. WeedSOFT is a decision support software developed by the University of Nebraska to provide weed management and herbicide information applicable to Nebraska field situations and based on research throughout the state. The program contains four sections: Advisor, Envirofx, MapView, and WeedView.

The newest version features several changes in the Advisor module to greatly increase the program's precision and utility. First, the technology fee application has been refined so the fee is more accurately represented in the economic analysis. Second, two moisture categories have been added to more accurately adjust the efficacy of preemergence and postemergence treatments. This gives WeedSOFT much greater use across a wide array of regions. Third, a list of those herbicide treatments that require a herbicide tolerant crop can be displayed for each crop. This gives our users added support in choosing the best weed management option possible.

In addition, a new treatment type — preemergence followed by a postemergence application — has been added allowing users to combine an almost infinite number of treatments across the entire Advisor database. Better yet, the analysis of the postemergence treatment is based on the residual weed species left over from the preemergence treatment. Now, users can run analysis on complete season long weed management programs.

Advisor — A Diagnostic and Analytic Decision Support System. The Advisor module takes the guesswork out of weed management by providing real numbers specific to a given situation. Advisor supports weed management decisions in corn, sorghum, soybean, sugarbeet and wheat. Data is provided by the user, including crop, rotational crop, soil properties, soil moisture, climate, and number and species of weeds. Advisor analyzes those contributing conditions and ranks effective treatments. Because Advisor incorporates preemergence, postemergence, and a combination of these, this program can be used as a strategic planning tool.

For each recommendation, ADVISOR will calculate the cost to treat the problem versus the expected dollar loss if the weed(s) is not treated. These recommendations strictly adhere to label guidelines. Advisor also allows the user to take into account technology fees associated with specific genetically modified crops, allowing the user to make complete economic comparisons.

EnviroFX — Site and product specific evaluation of groundwater contamination risk. With this application the user can determine the risk of groundwater contamination by a herbicide. By selecting the product and providing specific information pertaining to soil and water-table depth, the program will provide the relative herbicide mobility, relative soil vulnerability to herbicide leaching as well as combined herbicide/soil ranking and the potential for a specific herbicide to reach groundwater at a specific site.

MapView — Displays site vulnerability to groundwater contamination. MapVIEW provides a first step in evaluating the risk of a herbicide application in a specific area contaminating groundwater, based on soil properties and depth of water table. All Nebraska counties should be included by next year.

System requirements

WeedSOFT requires an IBM compatible personal computer with a minimum of an 486 processor running Windows 3.1 or better, 8 MB of RAM, 16 MB of hard disk space, 256 (8 bit) colors and a CD-ROM or 3.5 inch disk drive.

Product support

WeedSOFT is updated annually to include new treatments and label changes, to remove old treatments, and to add any new features. This provides users with the latest, most accurate up-to-date information possible. The cost is $185 + $10 shipping and handling for a new program or $35 for an annual update.

For more information or a descriptive brochure, contact Jeff Rawlinson at (402) 472-1544. To order, make checks payable to the University of Nebraska and mail to WeedSOFT, P.O. BOX 830915, University of Nebraska, Lincoln, NE 68583-0915.

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