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Yellowish wheat concerns growers; disease not likely

Wheat producers have reported having fields with a light green to yellowish cast this spring. Many of these fields are in southeast Nebraska, but there are reports across all of the southern tier of Nebraska. Dave Baltensperger, Extension Crop Breeding Specialist, notes that wheat appears to be in good condition in most of the Panhandle, but timely precipitation is still needed in some areas. Hopefully last weekend’s snow will have helped in some areas.

John Watkins, UNL Extension plant pathologist, has checked a number of the fields with the light green color in southeast Nebraska and said they are not showing typical disease symptoms. On inspection the crowns are healthy, but the growth is not the typical dark green that growers expect. Many of the fields received nitrogen fertilizer last fall, and producers are asking whether more nitrogen is needed. The quick answer is “no”.

If nitrogen was applied in the fall, there should be adequate nitrogen once the roots grow deeper. If the crop has not been fertilized, it should receive nitrogen before jointing.

What conditions have caused the light green appearance or yellowing? It depends on the part of the state. In southwest Nebraska, the cold snap in early March froze early growth enough to give fields a yellowish cast from dried foliage. The effect was field specific, however, depending on variety, planting date and cultural practices. Early planted wheat and specific varieties showed more damage. Wheat planted deeper in dry soil conditions showed more damage than wheat planted at normal depths in adequate soil moisture conditions. No-till wheat showed more damage than conventionally tilled fields. As the wheat started growing, the problem has largely disappeared in southwest Nebraska. The next challenge will be

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Chinch bugs: Scattered to severe damage possible

Results from surveys of chinch bug overwintering habitat in southeast Nebraska and northeast Kansas indicate that chinch bug numbers are still low in most areas where the pest has been a problem in the past. However, the numbers are higher than the last two years, particularly in southeast Nebraska counties bordering Kansas. Counts at some of these sites ranged from 200 to 300 insects/ft² of bluestem (Richardson and Thayer counties). Other sample sites in southeast Nebraska had counts ranging from 0 to 144 insects/ft², with most below 50 insects/ft² of bluestem. Note that these counts are still well below the 1000 to 10,000 insects/ft² of bluestem we had from 1989 to 1992. While we do not expect widespread economic damage, there may be scattered to severe early season crop losses due to the chinch bug where sorghum or corn is planted adjacent to maturing small grains infested with the insect.

As spring temperatures rise and we experience consecutive

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Chinch
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days over 70 degrees, the overwintered chinch bugs will begin to fly
to wheat and other small grains. Thin and/or short wheat is pre-
ferred over thick, taller wheat. Later, as the wheat matures the
chinch bug adults and nymphs will migrate to nearby sorghum or corn
seedlings. Farmers are encouraged to start periodically scouting small
grain fields at least a month before harvest. Chinch bugs can usually
be found near the base of plants and behind the lower leaf sheaths.
Economic damage to sorghum or corn planted adjacent to small
grains could occur if one or more adult chinch bugs are found per
row foot of small grain.

It must be remembered that while these overwintering habitat
surveys can give us an idea of possible problem areas, several
factors can limit the accuracy of such predictions. First, chinch bug
adults can fly and may redistribute themselves over an area of several
square miles. As mentioned earlier, thin stands of wheat are particu-
larly attractive to migrating chinch bugs. Also, a hot, dry
spring is advantageous to chinch bug reproduction and can stress
seedling sorghum/corn, making the plants more susceptible to
insect damage. Finally, these risk predictions only apply to early
season crop damage. Overwintering habitat surveys cannot accu-
rately predict mid- to late-season distribution of the chinch bug.

Tom Hunt, Extension
Entomology Technologist

Few wheat disease problems
found in southeast survey

A recent wheat survey in
southeast Nebraska revealed no
major disease problems. Tan spot
and Septoria leaf blotch were
causing some symptoms on wheat
planted into wheat residue. Sympt-
oms were minor yellowing and
spotting on the leaves. Tan spot
symptoms are small, circular, dark
brown spots with tan centers.
Septoria leaf blotch appears as tan
blotches with minute black struc-
tures of the fungus occurring within
the blotch. Both diseases will
continue to develop as long as cool,
moderate weather prevails.

Symptoms of soilborne wheat
mosaic were not found in last week’s
survey. Only minor crown and root
rot was found in a few fields, and
these were associated with continu-
ous wheat or looser seedbeds.
Wheat planted into continuous
wheat has an overall general yellow
appearance due primarily to nutri-
tional-environmental conditions (see
page 17). Wheat planted into
soybean residue has less yellowing
and is showing an overall greener
color.

John E. Watkins
Extension Plant Pathologist

Coming soon:
• Weed control strategies
• No-till drills
Topdress winter wheat in early April

Long term yield averages show a slight advantage to spring top-dressing of nitrogen for winter wheat as compared to a fall application.

Base nitrogen applications to wheat on a residual nitrate soil test taken at a depth of 2 to 3 feet. Samples should have been taken last fall or earlier this spring. Soil samples can still be taken, but the turn around time would have to be quick to provide nitrogen recommendations. Nitrogen should be applied to wheat before April 15.

Farmers have many options when top-dressing nitrogen in the spring. Urea ammonium nitrate solution can be dribbled, surface banded or spray broadcast. Urea is available and competitively priced. Ammonium nitrate is an excellent source, but is harder to obtain.

Ammonia use is not necessarily limited to preplant fall applications. Ammonia can be spring applied but the applicators need to be equipped with back swept ammonia knives or narrow knives and coulters. Shank spacings of 15 to 18 inches and an application depth of 3 to 4 inches should produce good results.

Ammonium nitrate (34-0-0) is still the preferred source for top dressing wheat. The chances for volatilization of nitrogen from this source is the least of any of the dry or liquid nitrogen sources. Because of changes in the fertilizer industry ammonium nitrate is no longer widely available.

Over the years there seems to be little difference between the various nitrogen sources used for early spring top-dressing. The main reason is that even though the nitrogen in urea and nitrogen solution can be lost by volatilization, conditions in the spring usually do not favor this loss. There is usually sufficient soil moisture and precipitation to move the fertilizer into the soil.

Nitrogen solutions (28-0-0), ammonium nitrate (33-0-0), and urea (45-0-0) work well as nitrogen sources for top-dressing winter wheat. Ammonium nitrate is, however, the preferred nitrogen source for top-dressing since volatilization losses are generally less for this source than other nitrogen sources. Nitrogen solution is often used as a herbicide carrier and broadcast sprayed. This method works well although the potential for volatilization of nitrogen is greater than if the fertilizer were dribbled or surface banded. To date there is little information in Nebraska on comparison of surface broadcast versus dribbled nitrogen solution on winter wheat. Generally we expect there to be little difference between

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Yellowish wheat (Continued from page 17)

the effects of cold weather following the March 26 blizzard. In exposed areas with no snow cover, some damage may have occurred.

In eastern Nebraska, there does not seem to be a pattern to the problem. The light green appearance is probably due to the lack of root development to reach soil that has adequate nitrogen. Although winter wheat has started to grow in many areas and daytime temperatures have been above normal, night temperatures have been quite cool. Soil temperatures may not have increased sufficiently to promote active root growth. Generally there has been adequate moisture in eastern Nebraska and adequate nitrogen may have been depleted in the existing root zone.

As soon as roots begin moving deeper as soil warms, plants should turn a darker green.

Continue to examine wheat if new growth does not turn green. Dig up plants and examine roots. New root growth should be .25 to 1 inch long. If roots are not a firm, shiny white or seem to be deteriorating, this means the plants are not in good health. Alternate plans should be considered before wheat uses too much soil water. If Ally, Amber, Glean, Finesse, Harmony Extra, or Tordon have been used, check the label for recropping restrictions.

If wheat has to be destroyed in April and replanting to another crop is planned, consider these options. If subsoil moisture is limiting, it may be wiser to spray the growing wheat with Roundup and fallow the ground. This ground would then be planted to wheat this fall. If spring crops are to be planted, they could be planted into fields that were to be planted to winter wheat in Fall 1995. Producers are encouraged to check guidelines on conservation compliance and Farm Program guidelines before making changes, however. Winter wheat growing since last fall may have already used up to 3 inches of soil water depending on the planting date.

Gary W. Hergert, Extension Soils Specialist, and Gail A. Wicks, Extension Weeds Specialist West Central Research and Extension Center
Pick a strategy for your situation

Weed control is the key to no-till

Successful no-till crop production requires that weeds established prior to planting, and weeds that emerge later, be controlled. The following strategies will help you control weeds under a no-till crop production system.

Early preplant strategy

Early preplant treatments can be applied 10 to 15 days before planting corn. An early preplant herbicide application, which includes both a grass and broadleaf herbicide, will normally provide season-long weed control. However, an additional herbicide treatment may be needed at planting if the initial application is 20 to 30 days ahead of planting, or if the soil is disturbed significantly during planting.

Early weed growth can be controlled successfully by applying an early preplant herbicide. Ideally, an EPP herbicide is applied before weed seeds germinate. Most EPP treatments include a triazine herbicide, such as Atrazine, Bladex, Lexone or Sencor, which control small emerged broadleaf weeds and many grasses less than 1" tall. This effect can be increased by adding either 2,4-D, crop oil concentrate, or 28% UAN solutions. If the grasses are taller than one inch, include Roundup or Gramoxone Super.

No-till planters equipped with certain coulters disturb the herbicide barrier in the row, which can result in “weed escapes.” In this situation, apply either a pre-emergence or postemergence herbicide over the row.

The early preplant strategy has several advantages. Because weeds are not established, early season weed control is usually more consistent, soil moisture is conserved, and the expense of the burndown herbicide is eliminated. The main disadvantage is that EPP applications will fail if rainfall does not activate the herbicide treatment. Also, if planting is delayed because of excessive rainfall, the herbicide may break down, shortening the period of weed control. For late planted crops, sequential herbicide treatments are usually needed to maintain season-long control.

Early preplant plus pre-emergence or postemergence strategy

Soybean and grain sorghum planting usually follow corn by 10 to 30 days. Early preplant treatments in these crops are usually applied 20 to 40 days before planting. A single herbicide application may not provide season-long control.

A split application, with one portion of the herbicide applied early preplant and the other at planting, helps maintain control. Another strategy is to apply an early preplant treatment, followed by a postemergence herbicide program. Not only are the operations spread out over an extended period, but you can choose the herbicide to match the weed problem.

Planting time strategy

A pre-emergence herbicide is applied in combination with a nonselective, foliar applied herbicide, such as Gramoxone Super or Roundup. The nonselective herbicide controls established weeds and the residual herbicides provide weed control for the rest of the season. With corn that is planted before weeds become well established, Gramoxone or Roundup are usually not required.

The advantage of planting time treatments is that a single herbicide application controls the weeds. The disadvantages are the added cost of the “burndown” herbicide, where needed, erratic weed control if the weeds are excessively tall or dry weather follows application, and depleted soil moisture early if weed growth develops.

Burndown + postemergence strategy

Another approach using entirely postemergence herbicides involves a burndown treatment up to five days before planting followed by a postemergence treatment(s). There is a need for the burndown treatment prior to planting sorghum and soybeans. Weed growth prior to corn planting is often minimal.

Economical preplant broadleaf weed control without tillage is available with 2,4-D and Banvel. The time saving of eliminating tillage may be an important consideration this year. Crop safety may require a delay in planting following treatment. Corn on fine textured soils can be planted immediately following an application of 1 pt. 2,4-D ester (4 lb/gal) or 1/2 pint Banvel per acre. Sorghum is more sensitive than corn and planting should be delayed 7-10 days following the same treatments. Soybeans can be planted seven days after an application of 1 pint/A 2,4-D•. Banvel should not be used prior to soybean planting.

John W. McNamara
Extension Assistant, Weed Science
Alex R. Martin
Extension Weed Specialist
Adjust planters for no-till

Any piece of planting equipment has to cut and handle residue, penetrate the soil to the desired seeding depth, and establish proper seed-to-soil contact. By keeping these three functions in mind, you can evaluate the strengths or weaknesses of any piece of planting equipment and make any adjustments or changes necessary to make no-till planting successful.

Before the planting season, check the double-disk seed-furrow openers on your planter for wear and proper adjustment. The two blades should be sharp, without a gap between them, to cut residue and penetrate the soil without coulters or row cleaners. The individual disks can be adjusted inward as they wear by removing spacer washers from behind them. This keeps the two blades sharp and working together as one cutting edge and prevents soil from getting between them.

If the two blades are mounted side-by-side, like on John Deere, Kinze, and White planters, they should have about two inches of blade contact on the leading edge. On staggered disk seed-furrow openers, like on Case-IH, Deutz Allis, and Landoll planters, the rear disk should be tucked in behind and just touching the leading disk. If needed, adjust the disks or replace them to maintain the proper configuration.

Take the empty planter to the field as soon as the weather and field conditions allow to check how well it will perform in no-till. Level the planter in the field, making sure that the toolbar is at the proper height and leveled front-to-rear. This is especially important to help keep the planter on the row if there are any ridges in the field.

Once the planter is leveled, try blind planting. If row cleaners are used, make sure that they are adjusted to move only residue away from the row. Moving soil will move any preplant applied herbicides and may create a furrow in which water may run or a crust may form. Without row cleaners, the residue left in the row will absorb raindrop impact, reducing erosion and crustling, and will reduce drying of the seed zone.

To ensure penetration to the desired seeding depth, evaluate the planter's weight and downpressure by blind planting a short distance and stopping with the planter in the ground. Check the depth gauge wheels on each planting unit to see if they are in firm contact with the soil to properly control planting depth. If they are loose and can be rotated easily, tighten the downpressure springs or add heavy-duty springs that provide at least 300 pounds per row available downpressure. Blind plant a little farther and check if you can slip the planter drive wheels. There needs to be enough total weight on the toolbar for the springs to work against and to keep the planter drive wheels from slipping.

If you are having trouble keeping the planter on the row, you may need to add more weight to the planter. There needs to be more weight carried on the planter drive wheels than is being carried on the planting units, especially if there is a ridge from cultivation of last year's crop. In addition, the planter's drive wheels must be exactly centered between the rows to help guide the planter.

There must be sufficient weight remaining on the seed-furrow closing devices and press wheels to firm the seed into the soil. Make sure that the planter is leveled or even operated slightly tail-down to get good seed-to-soil contact. Wet soil is easily compacted and care must be taken not to over pack the soil, making it difficult for seedling roots to penetrate the soil. In dry soil conditions, extra closing force may be needed to properly provide seed-to-soil contact.

The key is to evaluate seed-to-soil contact, not the top of the seed-vee. As long as the contact is there, do not increase the closing force on the press wheels. Instead, something as simple as a harrow that pulls loose soil and residue back over the top of the seed-vee may be all that is needed.

When evaluating planter performance, check residue cutting and handling, soil penetration, and seed-to-soil contact. A little time spent now will help avoid headaches and delays later during the planting season.

Paul Jasa, Extension Engineer Biological Systems Engineering
Plan sprayer cleaning to reduce exposure and added costs

Routinely and carefully cleaning your sprayer can reduce the risk of exposure, cross-contamination and unnecessary corrosion of equipment.

First, carefully estimate the amount of chemical needed, reducing the potential for excessive leftover chemical. Small amounts can be diluted and reapplied to the same field if the application does not exceed the label’s maximum rate. Store or apply larger amounts to another field.

Two tank rinsing options — clear water and detergent — are available, depending on the tank’s next use. During cleanup and rinsing, be sure to wear the appropriate personal protective equipment, as detailed on the product label.

If you plan to next use the tank for a different chemical registered to the same crop, often a clear water rinse is all that’s required after the chemical has been drained. To rinse the sprayer, run a small amount of water through the entire system to flush it. Reapply the water to a registered field. Wash the exterior of your sprayer rig, taking care not to contaminate the nearby soil.

If you’re planning to change chemicals and crops with your next application, you may want to use a detergent or cleaning solution rinse. When selecting the detergent, be sure to consider its disposal requirements. Some detergents can not be reapplied in a registered field and must be contained and disposed of as a hazardous waste.

To use a detergent rinse, first flush the entire system with clear water. Next use a detergent rinse to neutralize chemicals and clean the tank. Ammonium and sometimes chlorine rinses may be recommended, but be careful not to mix the two or use a chlorine rinse if the tank was recently used for ammonium application. Mixing chlorine and ammonia, even in small amounts, will create a noxious gas. Let the solution circulate throughout the system for 20 minutes, dispose of the rinsate according to label directions, and then rinse the tank again with clear water.

Consider selecting a detergent rinsate that can be field applied according to label directions to save time and effort.

At the end of each day, flush the system with a 10% solution of ammonia and water to remove potential corrosive chemicals and to avoid cross-contamination.

The In-Field Sprayer-Mounted Rinse System is one way producers can build and attach a system to rinse excess chemicals in the field, reducing potential contamination problems. Be careful to insure that the total chemical application, including the rinsate, does not exceed label recommendations.

Some producers mount a clear water, cone-shaped tank with 10-15% of the capacity of the main tank on the application equipment. This can facilitate cleaning and applying the rinsate in the field. Just be sure that the rinsate application does not exceed application levels specified on the label.

Bobby Grisso, Extension Engineer
Biological Systems Engineering
Address corn rootworm threat now

Some producers have asked about the advisability of early planting-time applications of insecticides to protect corn roots from corn rootworm larval feeding. Most studies have shown it is not advisable to apply an insecticide at planting unless it’s May 15 or later. This is because corn rootworms don’t hatch until early to mid-June in most of Nebraska and that’s when the insecticide is needed. The soil insecticides registered for protecting corn roots from the corn rootworm often are only effective for about three to four weeks and should not be expected to remain effective from sometime in April or early May until egg hatch, which can be as late as mid-June.

Growers who plan to plant before May 15 should consider cultivation time applications of soil insecticides if economic damage from the corn rootworm is expected. Alternative treatments include crop rotation and chemigation with Lorsban 4E when second instar larvae are present.

We also have been asked about using Furadan 4F to control European corn borer and protect corn roots from the corn rootworm. Apparently some promotions have indicated that growers can expect this “two-fer” result from a postemergence application. First of all, let’s look at how well this product can be expected to reduce losses just from the corn rootworm. Studies at University plots across the Midwest including here in Nebraska have shown that Furadan 4F when applied as the label states (between May 15 and June 15 — as close to egg hatch as possible) does not provide consistently reliable root protection when applied broadcast postemergence. When banded at cultivation and incorporated, Furadan 4F performs satisfactorily against the rootworm. Furadan 4F applications that are properly timed to protect the corn roots from the corn rootworm have not also provided good control of first generation European corn borer in University of Nebraska studies.

In all cases, we strongly advise growers to use beetle scouting information from July and August to assist them in making corn rootworm management decisions. Without this information, there is no way to make informed decisions regarding the management of this pest. Studies have shown that over half the continuous corn fields in the Midwest do not have economic levels of corn rootworm damage in any given year. Only scouting will help you decide which fields will need management inputs.

Steve Danielson
Extension Entomology Specialist

Topdressing (Continued from page 19)

methods although in some instances the dribbled may be better under conditions favoring volatilization.

With the excellent soil moisture across the state, top-dressing nitrogen this spring should pay big dividends. Farmers should base the nitrogen application on a residual soil nitrate test. All of the nitrogen sources available will do a good job so farmers should compare prices when selecting a source. Be certain that application equipment is working properly to apply the fertilizer uniformly. Recent data also indicates less foliar damage from nitrogen solution when applied early. Late applications can cause yield losses.

Gary W. Hergert, Extension Soils Specialist, West Central Research and Extension Center

Dressing for protection

If you mix, handle, or apply pesticides, you can significantly reduce the risk of pesticide poisoning and meet the requirements of the Worker Protection Standard by wearing the appropriate personal protective equipment (PPE). The Worker Protection Standard requires specific forms of personal protective equipment to be worn while mixing, calibrating or applying agricultural pesticides. The equipment and work attire requirements for each pesticide active ingredient are listed on the label. (The PPE requirements may be different for applicators and mixers/handlers.)

Sources of protective clothing and equipment are plentiful. Typically, agricultural chemical dealers are excellent sources.

For more information, two Extension NebGuides are available. Protective Clothing and Equipment for Pesticide Applicators (G758) provides a list of sources of protective clothing and equipment for pesticide applicators. The second, Worker Protection Standard for Agricultural Pesticides (1219), helps determine whether individuals are covered by the Standard and provides general guidelines on how to comply.

Larry Schulze, Extension Pesticide Coordinator
Water Center/Environmental Programs
Control triazine-resistant kochia before no-till or ridge-till planting

Kochia and Russian thistle are summer annual weeds that germinate in early spring and are particularly troublesome in conservation tillage systems. Normally kochia and Russian thistle are normally readily controlled with Atrazine, Bladex, Lexone, and Sencor. However, in many areas of western and central Nebraska, kochia has developed resistance to triazine herbicides. Several control strategies can be used to control both susceptible and triazine-resistant kochia and Russian thistle.

In ridge-till or no-till corn, Banvel is an effective herbicide for Russian thistle and triazine-resistant (TR) kochia. Gramoxone Extra and Landmaster BW are effective on emerged kochia when applied before planting. Triazine-resistant kochia is more difficult to control than Russian thistle with 2,4-D.

For ridge-planted or no-till corn or sorghum, it’s important to spray prior to planting when the weeds are small. Banvel at 1/2 pint per acre may be applied before, during or after planting corn on coarse, medium, and fine textured soils with less than 2% organic matter. Check with your dealer for com tolerance to Banvel at 1/2 pint per acre. In western Nebraska, use 20 days. Crop residue pushed aside during planting may protect weeds if sprayed after planting. Most problems with kochia in ridge-till occur when the planter openers do not cover kochia with soil at planting. Many ridge tillers set their planters to remove less ridge which reduces the effectiveness of weed control.

In fields where a seedbed is prepared for corn, use a tandem disk harrow or other tillage implement ahead of planting to kill emerged weeds. A mixture of Banvel at 1/2 to 3/4 pints per acre depending on soil texture and organic matter plus preemergence herbicides offers good kochia control in corn. Preemergence applications of Banvel at 3/4 or 1 pint per acre in corn can only be used on medium and fine textured soils with 2% or more organic matter.

A delayed planting can be used to your advantage, since additional kochia can emerge and be killed with tillage. However, corn yields may be reduced by planting later.

Several herbicides may be applied postemergence on corn and sorghum. The safest time to apply Banvel to corn is from the spike to three leaves. Banvel may be applied in the three-leaf to five-leaf stage. In corn 36 inches tall use drop nozzles and direct spray solution to the lower half of the plant. Do not use Banvel within 1/2 mile of soybeans. It's important to spray prior to planting while the atrazine controls most broadleaf weeds missed by Tough and provides some grass control. Buctril can be applied before planting up until corn or grain sorghum emergence to control actively growing weed seedlings. It also may be used postemergence on grain sorghum in the three-leaf stage to tassel emergence. Banvel plus Buctril probably gives the most consistent control.

Triazine-resistant kochia can be controlled in ridge planted or no-till soybeans with Roundup at 1 pt per acre plus Pursuit, Pursuit Plus, Command, Canopy, or Gemini prior to crop emergence. These treatments should be applied 7 to 30 days before planting depending upon the size of the kochia. Gramoxone Extra does not work with these herbicides. Command applied preemergence or preplant incorporated will control kochia in soybeans. Soil applied treatments effective against Russian thistle include Sonalan, Treflan, Sencor, Lexone, Scepter, Preview, and Pursuit.

Postemergence herbicides that are effective on triazine-resistant kochia on tilled ground include Pursuit, Classic, Classic + Pinnacle, and Basagran 1 GPA 28% UAN. Kochia must be sprayed when less than 2 inches tall. Herbicides should be applied within 30 days of planting.

Gail Wicks, Bob Klein and Alex Martin
Extension Weeds Specialists