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Flush of corn diseases likely; but widespread and heavy yield losses not expected

"It's an unusual year in Nebraska...... but then again, that's typical," notes NU Plant Pathologist Jim Stack, as he reviews the status of current and developing diseases in this year's corn fields. In his first four years at the South Central Research and Extension Center near Clay Center, Stack has seen a different disease profile each year, including "unexpected" diseases. Following is a synopsis of his discussion.

The race is on between Nebraska's corn crop and developing diseases and for the most part, it looks like the state's crop will mature before yields are significantly reduced. Producers should be scouting their corn; however, since individual fields may reach threshold levels and require fungicide treatments. Determining the need for treatment in a specific field depends on several factors, all of which should be considered when assessing potential damage.

Factors specific to an individual field and disease outbreak include:

1. Hybrid susceptibility to yield loss from specific diseases.
2. Cropping sequence (Corn following corn may increase the risk of some diseases if a susceptible hybrid is planted.)
3. Plant damage from hail or high winds (Plant wounds provide an opportunity for pathogens to enter the plant.)
4. Prior disease outbreaks in that field.
5. Residue from the previous crop that hasn't broken down can harbor pathogens to infect next year's crop.
6. Weather: Extended periods of high leaf moisture, high humidity and high temperatures can increase the risk of foliar diseases.
7. Irrigation has been linked to some foliar diseases, likely due to the humid microclimates it creates.

The last two winters have been particularly mild and have contributed to the survival of pathogens in crop residue or soil. Due to the early season being particularly hot

(Continued on page 153)

‘New’ insects possible visitors to southcentral Nebraska

In part due to mild winters the past few years, we may see some new insects entering Nebraska from the south. Two of these include the southwestern corn borer and the soybean stem borer.

Kansas State University entomologists report that southwestern corn borers have been seen in Jewell, Republic, Cloud and Mitchell counties in Kansas this year. These counties are just south of Webster, Nuckolls and Thayer counties in Nebraska. Historically, southwestern corn borer have rarely been reported in Nebraska; winter temperatures are thought to influence their northern limits.

Southwestern corn borers, *Diatraea grandiosella*, belong to the same insect family as European corn borer, and share many similarities in their life cycle. In Kansas and Nebraska there are two generations a year, with timing similar to European corn borers. Eggs are laid in masses and have similar appearance to European corn borer (flat-
Nebraska Agricultural Statistics Service (July 24): Cooler temperatures (4-9 degrees below normal) along with scattered showers last week helped crops under drought stress but slowed wheat harvest. Growing crops will continue to require timely rains to ensure proper development through maturity.

The winter wheat harvest slowed last week but neared completion as 97% of the acreage has been cut to date, compared with 87% last year and 72% for the 5-year average.

Corn condition rated 9% very poor, 15% poor, 26% fair, 37% good, and 13% excellent. Irrigated corn at 65% good to excellent and dryland corn at 27% good to excellent were virtually unchanged from last week.

Seventy-two percent of the crop was in or beyond the silking stage, ahead of last year’s 61% and the average at 48%. Reports indicated that 8% of the crop had reached the dough stage, this compared with 3% last year and 1% average.

Soybean condition declined and rated 9% very poor, 15% poor, 30% fair, 33% good, and 13% excellent. Blooming had occurred on 77% of the crop acreage as of Sunday, ahead of 65% last year and 54% average. By week’s end, 27% had set pods, compared to 12% last year and 7% average.

Sorghum condition rated 8% very poor, 15% poor, 33% fair, 33% good, and 11% excellent. The crop was 22% headed as of Sunday, well ahead of 9% last year and 5% average.

Oat harvest was 78% complete and compares with 55% last year and 49% average.

Dry bean condition showed virtually no change from last week with 44% rated good to excellent. About 73% of the crop had bloomed by week’s end, ahead of last year at 52% and the average at 39%.

Alfalfa harvest of the second cutting progressed to 95% complete, compared to 84% last year and 73% average. Third cutting activities were underway in most areas of the State. Condition of the crop declined and rated 18% very poor, 30% poor, 30% fair, 20% good, and 2% excellent.

Wild hay condition rated 21% very poor, 30% poor, 30% fair, 15% good, and 4% excellent.

Pasture and range condition declined and rated 38% very poor, 34% poor, 21% fair, and 7% good. Most pastures remained in a drought state and can provide, at best, limited grass regrowth. Some producers continued to move cattle around, provide supplemental hay and/or protein, or move cattle to market.

Economic Research Service
July wheat update: The 2000 U.S. wheat crop is forecast at 2,243 million bushels, up 31 million from last month but down 60 million bushels from 1999. The July production estimate was slightly above the average of pre-release trade guesses.

Reported beginning stocks for 2000/01 are up 33 million bushels from the June projection, and they are 4 million above a year earlier. The larger beginning stocks and this month’s increase in production raise the U.S. wheat supply for 2000/01 to 3,293 million bushels, only 49 million bushels below last year's burdensome level.
Corn diseases (Continued from page 151)

and dry, many producers started irrigating much earlier than usual, providing increased opportunity for development of these pathogens.

Following is an update on the diseases affecting this year’s corn. Sometimes symptoms of several diseases may look similar so you may want to have a sample diagnosed at the NU Pest and Plant Diagnostic Clinic or one of the state’s other diagnostic laboratories. For more information on individual diseases and recommended treatment strategies, check out the following publications available from your local NU Cooperative Extension Office or on the Web at http://www.ianr.unl.edu/pubs.

-- Fungicide Management of Foliar Diseases of Corn, NebFact 00-428
-- Gray Leaf Spot of Corn, NebGuide 1384.

Wheat streak mosaic, not usually a threat to corn, has now been identified in seed-corn fields in Clay, Buffalo and Lancaster counties. Originally described as “Shelton Disease” in last year’s Crop Watch, two independent laboratories have confirmed the outbreaks as wheat streak mosaic virus. The virus is hitting specific male inbreds very hard; female lines also may be infected, but not as severely diseased. Symptoms may appear as long, bleached (sometimes purplish) streaks along the leaves which turn necrotic and die. Wheat streak mosaic is vectored by the wheat curl mite, which survived last year’s mild winter in high numbers. Control options are limited at this point, but steps can be taken to limit the spread of the disease to next year’s crop. Wheat and perennial grasses are the reservoirs for the corn crop while corn may be a reservoir for the wheat crop. If there is another mild winter and wheat curl mite survival is expected to be high, avoid planting susceptible inbreds near previously infected wheat or corn fields.

Susceptibility is probably widespread in most lines, although few inbreds and field corn hybrids develop visible disease.

Holcus spot has flourished in south central Nebraska; however it is not expected to cause detectable yield loss. The same species of bacterium causes holcus spot in corn and bacterial leaf spot in sorghum, both of which are likely to appear 7-10 days after a heavy rain storm. While widespread this year, holcus spot is unlikely to affect yield. Damage from this disease can look a lot like herbicide injury and a diagnosis may be necessary to determine the cause of field damage.

Gray leaf spot potential was relatively high due to recent mild winters and higher than normal amounts of inoculum in the field; however, plants developing ahead of normal may outrun the disease. While gray leaf spot has traditionally appeared first in south central Nebraska, this year conditions were optimal for early development of the disease in popcorn and field corn fields near Grant and Imperial as well as in northeast Nebraska. In south central Nebraska, outbreaks are two weeks behind normal. Disease development in the next week is likely to determine whether impact on yield will occur and whether treatment is necessary in some fields. The key is for the crop to reach the dent stage before reaching treatment thresholds.

Common rust is present at levels you only see every five years in a wide swath of east and central Nebraska. Depending on the hybrid’s genetics, common rust may cause yield loss. In some counties rust is visible from the top to the bottom of the plant. In some Saunders County fields, rust has reached threshold levels. Individual fields may need treatment, but generally across the state it’s unlikely to cause huge yield losses this year. In this week’s Iowa State University Integrated Pest Management newsletter, Charlie Martinson and Gary Munkvold, extension plant pathologists noted that common rust (Puccinia sorghi) of corn is developing early and is widespread this year in Iowa: “Seed corn producers should scout for the rust pustules and make decisions about whether to spray a fungicide..... Relative susceptibility of the inbred to rust and the outlook for continued weather favorable for rust development should be considered in any decision-making process. Common rust develops best with cool nights and adequate moisture (dew or rainfall).”

Southern rust, which is caused by a different pathogen, can be very damaging as well. Producers should begin scouting for it as soon as possible.

This year’s corn crop may win the race to achieve yield potential; however, developing disease may impact yield indirectly by predisposing the crop to stalk rot and lodging. Start scouting fields for stalk rot (Stalk Rot NebGuide) in mid-August and be prepared to harvest fields early. (For more information, see Common Stalk Rot Diseases of Corn Fields, G99-1385, available from your local Cooperative Extension office or at http://ianrwww.unl.edu/pubs/plantdisease/g1385.htm.) Fields with moderate to severe gray leaf spot are particularly vulnerable to stalk rot diseases.

Jim Stack
NU Plant Pathologist
Lisa Jasa, Crop Watch Editor

Farm & ranch: ruralroutes.unl.edu
tended, and overlapping like fish scales). One difference is that as southwestern corn borer eggs develop, three orange-reddish lines develop across each egg. Larvae are white with large raised black spots on each segment. They are 1-1 1/4" long at maturity. The second generation of southwestern corn borer is most damaging, both from stalk boring activity and because it girdles the base of the corn stalk in preparation for overwintering. This weakens the stalk and makes stalk breakage more likely. KSU entomologists recommend applying insecticides when 20% to 25% of the corn plants are infested with eggs or newly hatched larvae. Southwestern corn borer may survive in sorghum as well as corn.

Kansas State University entomologists also report increasing populations of the soybean stem borer, *Dectes texana texana*, in north central Kansas the last few years. In 1999 high populations were reported in Republic County Kansas, south of Thayer County, Nebraska. The soybean stem borer is a member of the beetle family Cerambycidae (long-horned beetles). It is a native insect which feeds on wild hosts including cocklebur, sunflowers, and common and giant ragweed, as well as soybeans.

The adults are elongate, gray beetles, 6-10 mm long, with antennae longer than the body. Adults lay eggs in the upper leaf petioles of soybean during July and August. Newly hatched larvae feed in the petiole pith initially but soon tunnel to the main stem. The trifoliate leaf where the egg hatched and the larva began feeding will wilt and die. Larvae tunnel in the stalk until they complete their development. Soybean stem borer larvae are slender, legless, and creamy white in color, reaching 6/10" at maturity. Larvae overwinter in the stalk, pupate in early summer, and adults emerge from June to September.

As they finish feeding, last stage larvae move down to the bottom of the stem, and girdle the inside of the stem 2-4.5 inches above the soil level. This predisposes the soybean plant to break at the girdled point during windy periods. Up to 10% yield reduction has been reported from the effects of larval tunneling, however, the greatest yield losses occur due to lodging. The borer girdles earlier-maturing varieties more severely and lodging is most severe on earlier-planted soybeans.

Insecticides are ineffective for control of overwintering larvae and are not recommended. Adults can be controlled with foliar sprays, but their extended period of emergence does not make treatment economically feasible.

Cultural practices suggested to reduce losses include harvest of infested fields as soon as they mature, crop rotation, control of weed hosts, and burial of infested stubble to a depth of 2 inches.

For more information and color photos to aid in identification of Southwestern corn borer, see [http://www.oznet.ksu.edu/library/entml1/ SWCB.pdf](http://www.oznet.ksu.edu/library/entml1/ SWCB.pdf)

For more information and color photos to aid in identification of Soybean stem borer, see [http://www.oznet.ksu.edu/ dp_entm/extension/Current/ soybstbr.html](http://www.oznet.ksu.edu/ dp_entm/extension/Current/ soybstbr.html)

Bob Wright
Extension Entomologist
South Central REC

Kansas update: Southwestern corn borers at higher numbers than ever before

Normally a problem from Great Bend to Oklahoma, Southwestern corn borers are teaching north central Kansas about the biblical pairing of drought and pestilence. On the heels of an unusually warm, dry winter and spring, first-generation borers have infested corn fields in Jewell, Republic, Cloud and Mitchell counties.

"Unfortunately, the moths emerging from that first generation can fly for miles in search of attractive corn, where they'll deposit second-generation eggs. Each female can lay two to five eggs per mass and lay several masses over her lifetime. So, the resulting population could be large. We could be seeing severe damage in many more fields, including ones with little to no earlier distress," warned Kansas State University entomologist Randall Higgins.

Even more bizarre, Southwestern corn borers also have attacked several north central Kansas grain sorghum fields, planted into no-till corn stubble.

"From time to time, we've seen this kind of thing on a very limited basis. Even so, Southwestern corn borers aren't a recognized milo pest. Our records here indicate these are by far the heaviest levels ever confirmed in Kansas," said Leroy Brooks, also a K-State Research and Extension entomologist.

Mitchell and Lincoln counties have reported infested grain sorghum fields. First-generation borers were feeding on from 10% to 50% of the milo plants.

In the crop for which it's named, the Southwestern corn borer can cause significant yield losses, as well as serious harvest problems, Higgins said.

"In K-State's southwest area research fields, we've measured 70 or more bushels of grain that ended up on the ground in untreated, but
Act now to prevent 2001 wheat disease

The most damaging wheat disease in 2000 was wheat streak mosaic. This disease caused serious losses in the southern Nebraska Panhandle. The pattern of wheat streak mosaic closely fit the pattern of hail in 1999. These hail storms produced volunteer wheat, and where this volunteer was not controlled, wheat streak mosaic was severe. The only effective control measures for wheat streak mosaic are to plant at the proper time and to control volunteer wheat in adjacent or nearby stubble fields. Any volunteer wheat that emerges within 7-10 days after a hail storm is a prime candidate for providing the summer green bridge for the curl mite and the wheat streak mosaic virus. The curl mites will carry the virus from the hailed wheat to the volunteer then to the fall sown crop. One hail storm can cost a grower two wheat crops -- one, directly, from the hail and the second the next year, indirectly, from wheat streak mosaic.

It only takes one volunteer wheat field in an area to serve as a source of mites and virus for all of the surrounding fields planted this September. The “Good Neighbor” policy really comes into play in this situation. Being a good neighbor means controlling your volunteer so it doesn’t become a source of mosaic for your neighbor’s fields as well as your own fields.

In addition to controlling volunteer in the stubble, plant your wheat at the target date for your area. Planting early is an open invitation to problems with wheat streak mosaic, barley yellow dwarf, soil-borne wheat mosaic and crown and root rot.

John Watkins
Extension Plant Pathology

Southwestern corn borers

heavily infested test plots,” he explained.

Their chemical controls are similar, but the pest is both larger and more destructive than the European corn borer that typically attacks northern Kansas fields, Higgins said.

The window for controlling the pest is narrow, the entomologists said.

Between one and two weeks after hatching, Southwest corn borer larvae stop causing “shot hole” feeding damage in the upper plant surface. They chew into a stalk and begin tunneling from near the ear zone to ground level. They may bore out of and back into a stalk several times. They often end their journey by girdling the plant from the inside, causing stalk break (lodging) just above the soil line.

“Each larva will easily eat through 20 to 30 inches of stalk,” Higgins said. “In contrast, European corn borer larvae typically make 3- to 5-inch long tunnels.”

Once inside the stalk, both pests are protected from chemical controls.

“That’s why north central Kansans, in particular, should start now and continue scouting for Southwestern corn borer activity through mid-August,” he said. “The best time for treatment is when you expect 50% emergence -- although you may very well have to retreat 7-10 days later. The economic threshold for deciding to treat is when 20%-25% of plants are infested with eggs or newly hatched larvae.”

K-State recommends that farmers scout their fields at least three times at 7- to 10-day intervals, estimating the level of borer infestation each time. If borer numbers don’t start at critical levels, farmers still should consider spraying if the sum of their three scouting counts ever exceeds 25%.

Most Bt corn varieties have protection against both Southwest­ern and European corn borer activity, Higgins said. But, hybrids containing “Bt event 176” may not have much protection against late­season, second-generation South­western corn borers.

“Weather will mostly determine how severe the problem is for non-Bt varieties. Moist, still nights favor Southwestern corn borer mating and egg laying. Severe storms and driving rains can kill lots of adults, thus limiting the number of larvae that can establish themselves in plants.”

Brooks said the future for the sorghum-infesting borers is even further up in the air.

“We saw no sign of corn borers in milo fields just a few miles away from the infested ones,” he said. “And, frankly, we don’t know if the moths will stay with sorghum for their second generation.

“Our initial thought is the borers aren’t likely to become more of a problem for sorghum growers. But, with no history, all we can really say is people should keep their county Extension agent informed.”

Southwestern corn borer eggs are 1/8-inch wide ovals with a slightly raised (convex) upper surface. Most show up on upper leaf surfaces, slightly overlapped and often forming a chain pattern.

They start out creamy white, but develop three parallel red-orange lines as they mature.

The larvae are bright white, covered with black spots.

Kansas State University
Research and Extension Press
Release
Bacterial blight and bacterial pustule common in soybeans this year

Bacterial blight and bacterial pustule have been identified in many soybean fields this year. These diseases normally don’t affect yield in Nebraska, but this year they may. Both diseases are spread through infected seed and overwinter in crop residue. Of the two, bacterial blight is more commonly seed-transmitted and normally more of a problem. These diseases are favored by cool temperatures and are more frequently observed in areas that have received a lot of rain because they are spread by splashing rain and wind.

Bacterial blight symptoms start as small, angular water-soaked spots that become brown with a yellow border. Portions of the leaf tissue drop out, resulting in a shot-hole appearance. Black lesions develop on the stem and small water-soaked spots can develop on the pod. Infected seed may be shrunken.

Bacterial pustule symptoms start as small yellowish-green areas with reddish-brown centers and are more evident on upper surface. A small raised pustule on the lower leaf surface may be evident. At first glance this may look like rust, but we do not have rust on soybeans in the U.S. and there are no spores when you rub the raised lesions on the leaf.

Management/control

Plant high quality seed and don’t keep seed from fields with either disease; use rotation; bury crop residue to reduce overwintering of inoculum, and do not cultivate the field when the foliage is wet.

Loren J. Giesler
Extension Plant Pathologist

Late summer alfalfa planting requires good seed beds

Alfalfa planted in August establishes well when moisture is available. Be sure to plant early enough so alfalfa has six to eight weeks between emergence and freeze back to develop good cold tolerance. That means that if you are in northern Nebraska or southern South Dakota, you need to plant immediately. But only if you also have moisture for seeds to germinate right away. Any delay is likely to cause poorer stands. In southern Nebraska you can plant a little later. Mid-August is ideal while planting after August 31 becomes risky. In central Kansas alfalfa can be planted as late as mid-September.

Seedbed preparation is crucial for late summer plantings. Good seed-to-soil contact and weed control are critical. Both when seeding into prepared seedbeds or into wheat stubble. Conserve soil moisture whenever possible, and put extra effort into getting a firm seedbed.

Whenever seeding alfalfa in August, be especially wary of grasshoppers. They sometimes seem to come from nowhere, and they love to eat new seedlings. Spray field margins with insecticides before planting if necessary.

One important caution to consider, especially this year, never plant into dry soil. August plantings into dry soil may lie dormant for several weeks and there’ll be too little time for seedlings to develop good cold tolerance. Fall rains are often unreliable in Nebraska, as evidenced by the 1999 fall.

Bruce Anderson
Extension Forage Specialist

Most of Nebraska’s NebGuides, NebFacts and ECs are available on the web at:

www.ianr.unl.edu/pubs
Following sweeping hail storms
Insurance tables aid in assessing damage

Last week's devastating hail storm in southeast Nebraska was like pouring salt on a wound. On Thursday, July 20, producers in Gage, Johnson, Lancaster and Pawnee counties watched as hail the size of golf balls and 50 mph winds ravaged crops that had been enjoying a little relief from recent high temperatures. An estimated 80,000 acres of cropland in four counties was affected by the hail.

Preliminary Farm Service Agency flash reports for Gage County, the hardest hit of the four, estimated that average corn and soybean losses were as high as 65% and sorghum losses were as high as 40-45%, according to Steve Stark of the Gage County FSA office.

Some of these same fields in southeast Nebraska were among the earliest and hardest hit by this year's drought. Soil moisture reserves were still low and the area had only received 57% of normal precipitation since last September.

Hail damage at this point in the season can cause significant damage to both crop and potential yield. Sometimes damage can appear horrendous the first day or two and then the plant may start to recover, or, the plant may appear to be surviving when disease enters through a wound and begins weakening it further. In either case, waiting 7-10 days will make it easier to determine whether plant tissue is dead. Contact the appropriate government agencies before destroying fields. (See July 14 Crop Watch, Assessing hail-damage fields, page 141.)

If you’re planning to chop the crop into silage, waiting may also be beneficial and allow the plant to dry to a more optimal moisture level. (See Harvesting grain crops for silage, page 159) While the value of the grain crop may be reduced, Paul Hay, extension educator in Gage County, notes that as silage the crop may be near or at full value. He had heard reports of buyers wanting to heavily discount the price of silage, however he noted that while quantity will be reduced, quality may not be. If it’s got 25 or more bushels of grain, growers should pursue high value prices.

As serious as the direct impact of the hail was in these fields, the secondary effects can be more subtle but still damaging to yield and harvest. Two consecutive mild winters have led to an increase in disease inoculum in many fields. This week’s return to hot, humid conditions in addition to irrigation may create optimum conditions for disease development in the wounded crop. Hail damage can increase the incidence of corn smut, stalk rot, Goss’s bacterial wilt and blight and holcus spot. In soybean fields, windy rainstorms and hail have been known to lead to increased levels of bacterial blight and bacterial pustule (See story, Bacterial blight and bacterial pustule common in soybeans this year, page 155). Hay reports molds and diseases are already becoming evident on severely bruised plants. Even if corn plants appear to recover, Hay notes that stalk rot, lodging, and ear drop are still likely to cause problems.

(Continued on page 158)
Estimated percent corn yield loss due to defoliation at various Stages of Growth.*

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*Reprinted by permission from the National Crop Insurance Association’s Corn Loss Instructions (Revised in 1994)

In addition to disease damage, where plants have been stripped or destroyed and stands remain spotty, plant canopies will provide less shade and weeds are likely to develop quickly. These weeds will use valuable moisture and complicate harvest if not controlled while still little.

Guidelines have been developed for assessing potential yield loss from hail damage. Two factors are used to help estimate yield loss: stand reduction and plant damage at a specific growth stage. The following charts from the hail insurance industry work well because they predict percent loss compared to actual yield.

**Corn**

Total corn yield loss from hail damage is estimated by adding the expected yield loss caused by stand reduction and the expected loss caused by defoliation of the remaining plants. Be sure to estimate defoliation based on the adjusted stand number (total stand minus stand loss). This is only an estimate of the percent yield loss. For example, with a 20% stand loss and a 36% defoliation loss you would calculate the following:

\[
20\% + [(100-20) \times 0.36]
\]

to determine total loss.

As with undamaged corn, favorable weather during the rest of the growing season can cause actual yields to be higher than expected. Likewise, unfavorable weather can cause greater reductions. At this stage of plant development, there is a direct relationship between loss of plant stand and loss of yield. A 1% loss in plant stand translates to a 1% loss in yield.

**Soybean**

Yield loss predictions are based on two factors:

a) stage of growth at the time of damage, and

b) the degree of plant damage. Plant damage is classified as leaf defoliation, stand reduction, stem damage, and pod damage. To calculate actual soybean yield loss due to hail, several factors should be considered. Actual soybean loss due to hail is the sum of direct damage and plant damage loss. Direct damage is the sum of the yield losses from stand reduction and pod damage. The plant damage — the sum of losses due to stem cutoff, broken over and defoliation -- is multiplied by the remaining percent stand to find the plant damage loss. At the current stage of plant development, there is a direct relationship between loss of plant stand and loss of yield. A 1% loss in plant stand translates to a 1% loss in yield. (See NebGuide G85-762, Soybean Yield Loss Due to Hail Damage, for a worksheet to calculate loss.)

**Sorghum**

In the short run, sorghum is apt to recover well from severe hail. Generally its leaves are more

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Hail
(Continued from page 158)

flexible and tend to sustain less severe damage; however, recovery is not without its own challenges. A perennial, sorghum will try to compensate for plant injury by sending out new suckers, all of which can lead to new heads of grain, all at different levels of maturity. While the primary head may ripen much as planned, secondary heads may still be green, creating a variety of maturity levels. If stems are healthy, producers may choose to delay harvest until frost or the majority of the crop is mature.

More information

For further information on assessing hail damage, please check the following publications, available from your local NU Cooperative Extension office or on the Web (http://www.nmunr.unl.edu/pubs):

-- Assessing Hail Damage to Corn (G86-803)
-- Soybean Yield Loss Due to Hail Damage (G85-762)
-- Sorghum Yield Loss Due to Hail Damage (G86-812)

Silage from damaged grain

Dryland corn fields, especially in southwest Nebraska, have suffered severe drought damage. Silage can salvage this crop, but some harvest modifications may be needed.

Most of the green, low grain corn will be too wet to make good silage directly. In fact, even plants with brown leaves may be too wet because stalks hold so much moisture. Usually, 65% to 70% moisture is ideal for bunker-type silos, but green stalks and leaves of corn contain 80% to 85% water. Direct chopping and ensiling this wet corn can cause heavy seepage and a sour silage.

The easiest way, and maybe the best way, to lower moisture content is simply wait until stalks start to turn brown and die.

If waiting isn’t desirable, windowing the crop and allowing it to wilt one-half to one full day before chopping will reduce moisture. You also could mix grain or chopped hay with freshly chopped corn to lower the moisture content. It takes quite a bit of material for mixing through -- about 10 bushels of grain or 500 pounds of hay to lower each ton of silage from 85% to 70% moisture.

Or, you can allow that windrowed corn to dry completely and bale it as hay. Be sure to test it for nitrates before feeding.

Silage feeding quality is determined by 1) the nutrient content of the crop stored, 2) the stage of maturity and moisture content when harvested and 3) the effectiveness of silage preservation.

Grazing might be the best way to use damaged corn, and since many pastures also are short, this is a good way to extend your grazing. Introduce livestock slowly to this new feed to reduce potential digestive problems. Strip graze the field to reduce trampling losses and get more grazing from the corn.

For more information on chopping silage, see Harvesting Corn and Sorghum for Silage, Extension NebGuide G94-1231.

Bruce Anderson
Extension Forage Specialist

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Interested in the latest research results from the USDA Agricultural Research Service. The ARS now offers two e-mail options for learning about new research findings and activities.

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Soybean Management Field Days Aug. 15-18

The Nebraska Soybean Management Field Days will offer valuable information for meeting the challenges of today’s market. The field days will be held Aug. 15-18 at four Nebraska sites.

Maximizing profitability is essential in today’s market, said Keith Glewen, event co-coordinator and University of Nebraska Cooperative Extension educator.

“Producers will take home new ideas on managing weeds, reducing harvest loss, growing value-added soybeans and controlling diseases,” Glewen said. Unbiased, research-based demonstrations and information will be provided by NU specialists, educators and industry consultants. Topics include weed management technology, harvest management, soybean value enhancement, and disease and soil fertility management. Each hour-long interactive session will feature guest speakers.

The Nebraska Soybean Board is sponsoring the event in cooperation with the United Soybean Board and NU Cooperative Extension.

Nebraska Soybean Board Chairman Norm Husa of Barneston said the soybean checkoff program strives to help producers achieve greater profits from quality crops. By participating, producers can see their checkoff dollars at work bringing leading technology and ideas to producers.

The field days run 9 a.m. to 2 p.m. There is no charge for admission or lunch.

Dates and locations are:
- **Aug. 15**, Cozad, Ray Mundell farm. Directions: from Cozad, one mile south on Highway 21, two miles west on road 759 and one-fourth mile south on road 418.
- **Aug. 16**, Beatrice, John Bargmann farm. Directions: On Highway 77, three-fourths mile south of the Diamond Truck Stop, turn west and go one and one-fourth miles.
- **Aug. 17**, York, Jerry Stahr farm. Directions: three and three-fourth miles east of the York County Fairgrounds on 25th Street, which turns into Road 14.
- **Aug. 18**, Norfolk, Northeast Community College field site, follow Eisenhower Avenue and go two and one-half miles east of Highway 81 just past Victory Road.

The Nebraska Soybean Board administers the state’s share of the one-half percent national check-off on soybeans produced in Nebraska.

Program details and maps can be obtained on the web at [http://ianrwww.unl.edu/ianr/ardc/soydays.html](http://ianrwww.unl.edu/ianr/ardc/soydays.html), or contact the Nebraska Soybean Board at (800) 852-BEAN or (800) 852-2326 or Glewen at (800) 529-8030.