



## Farm Views

### Prepare grain bins and equipment before harvest

With harvest rapidly approaching, now is the time to prepare grain bins and harvesting equipment to help ensure that grain going into storage will remain in good condition. Don't wait until the middle of harvest to discover that a bin foundation is severely cracked, or find even later that insects from grain that was left in the combine last fall have severely infested a bin of new grain. Regardless of whether this year's weather results in a bumper crop or reduced-quality grain due to an early frost, proper bin and equipment preparation is a key to preserving stored grain quality.

#### Harvesting equipment

Remove all traces of old grain from combines, truck beds, grain carts, augers and any other equipment used for harvesting, transporting and handling grain. Even small amounts of moldy or insect-infested grain left in equipment can contaminate a bin of new grain.

#### Bins and other system components

Check the bin site and remove any items or debris that would interfere with safe, unobstructed movement around the bin. Remove any spilled grain and mow the site to reduce the chances of insect or rodent infestation. If necessary, re-grade the site so that water readily drains away from bin foundations.

Inspect bins and foundations for structural problems. Inspect the bin roof and sides, inside and out, for leaks, loose or sheared bolts, rust, etc. Check the roof vents and access hatch and caulk any cracks at the roof line. Be sure the access ladder is complete and securely fastened to the bin. Repair or replace any deteriorated components.

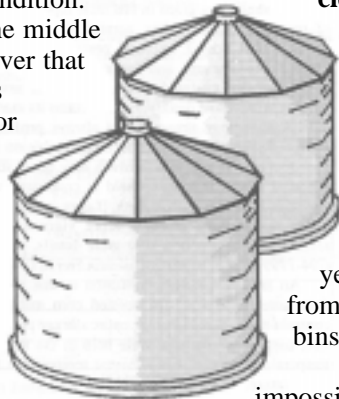
Wiring for fans and other electrical components should be inspected for corrosion and cracked, frayed or broken insulation. Exposed wiring should be run through water-proof, dust-tight conduit. Avoid kinking the conduit and make sure all connections are secure.

Check fans, heaters, transitions and ducts for corrosion and damage. Remove any accumu-

lated dust and dirt that will reduce the operating efficiency. Be sure that all connections are tight.

#### Ensure that the bins are clean. Remove any old grain with brooms and vacuum cleaners.

Never put new grain on top of old. Also, clean bins not being used for storage this year to keep insects from migrating to other bins.



It is generally impossible to thoroughly clean under perforated drying floors. Although by removing the drying fan and using a grain vacuum, much of the accumulated debris can be removed. The bin should then be fumigated with chloropicrin. (Chloropicrin is a Restricted Use Pesticide and requires gas monitoring devices and respirator protection.)

If long term storage (over 10 months) is anticipated, consider treating the cleaned bin with protective insecticides at least two weeks before adding any grain. Apply the spray to the point of runoff to as many interior surfaces as possible, especially joints, seams, cracks, ledges and corners. Also spray outside the bin at the foundation and near doors, vents, ducts and fans.

Malathion, methoxychlor, Tempo, Reldan (stored sorghum only) or diatomaceous earth can be used for treating bin surfaces. Methoxychlor and Tempo should not be applied directly to the grain. As with all pesticides, read and follow product label instructions for handling, dilution, mixing and application directions. NOTE: Do not spray bins where soybeans will be stored. Stored soybeans rarely experience insect problems and few insecticides are labeled for use on soybeans.

Stored grain represents a major investment. Precautions taken before grain is put into the bin can pay dividends later by helping to assure that quality is maintained. (TD)

Source: David P. Shelton, Extension Agricultural Engineer; David D. Jones, Associate Professor, Biological Systems Engineering; Keith J. Jarvi, Extension Assistant, Integrated Pest Management.

## Fall clean-up of warm-season grasses

Many producers promote warm-season grasses like big bluestem, Indiangrass and switchgrass for summer pasture. They grow well during hot weather when cool-season grasses like brome-grass and wheatgrass are unproductive.

Many warm-season grass pastures eventually are invaded by cool-season grasses. These cool-season grasses germinate, grow and spread during cool, moist times of the year when warm-season grasses are dormant and not competitive.

One way to control cool-

season invasion is late fall grazing. Warm-season grasses are dormant in late fall, so they won't be injured by grazing. But cool-season grasses can be weakened and thinned out by grazing while green, just before winter.

For severe invasions, you also can spray Roundup in late fall. But be careful. To use Roundup to remove cool-season grass from warm-season grass, first wait for several hard freezes to kill the top growth of warm-season grass. Once completely dead, the tops won't be able to

absorb the Roundup so they won't be injured when sprayed. But cool-season grasses will still be green and susceptible to Roundup. November is usually the best time to spray Roundup to selectively remove cool-season grasses from warm-season pastures. Follow label directions for proper rates and formulations.

Keeping warm-season grasses productive is difficult if cool-season grasses invade. Timely grazing and Roundup can help. (WS)

## Fall is a good time to control problem weeds

Fall is an excellent time to control several species of perennial weeds in pastures and waste areas. Food storage in the root systems of many perennial plants such as field bindweed, Canada thistle and leafy spurge takes place in the fall. Herbicides applied at this time readily move into the roots as well, greatly improving the effectiveness of the herbicide. Even if the chemical doesn't thoroughly kill the weed, it goes into winter in a weakened condition and is

much more susceptible to winter kill. Fall treatments can be made anytime after mid-September, but before hard freezes occur. Treatments can even be made after a light frost has occurred as long as the plants are still active and growing. Daytime temperatures in the 50's are satisfactory.

In addition to obtaining excellent control on the target weeds, the potential for drift damage to non-target species is lessened in the fall. Most field crops and gardens are finished

producing by this time and the current year's growth on perennial shrubs and trees is hardened off, making them less susceptible to damage.

For recommendations on specific herbicides and rates, consult the 1999 Guide for Herbicide Use in Nebraska EC 99-130-D available for \$2 when picked up at the extension office or call to visit with one of the staff for recommendations on specific weed species. (TD)

## Pricing silage into the feed bunk

Arriving at fair and equitable prices for silage requires judgement and attention to detail. The amount of grain and moisture contained in silage have major influences on its feed value and can be used to increase the accuracy of silage pricing.

The first judgmental factor is the quality of the crop as it was taken from the field. The price paid for corn silage must take into account the value of the corn grain in a ton of silage, the dry matter content of the silage and extra costs of harvesting and hauling the silage. A buyer and seller may agree on establishing a value for corn grain, based on the price at a

local elevator during a specific time period and multiply that price times the amount of grain to determine the price per ton of silage.

Arriving at the price to charge for silage as feed, involves at least two additional costs:

1. The cost of filling and removing from the silo; and,
2. storage costs, including allowance for cost of the storage structure and silo losses.

Note that filling and removal costs will vary with the type of storage. Additional costs may also occur with final delivery.

Weather damaged silage, as we find this year, have growth

stopped at a very immature stage and the yield of grain is usually less than half of normal. These silages may have 80 percent or less the feed value of high grain corn silage. Forage sorghums, of comparative high grain yield, usually have only 80 to 90 percent the value of corn silage per unit of dry matter. Sudan and sudan-sorghum crosses, or sorghum varieties with low grain yields, may have only 65 to 80 percent the feed value of corn silage.

Additional information and guidelines are contained in NebGuide G74-99, "Estimating Corn and Sorghum Silage Value", available at the extension office. (WS)

## On-farm grain storage

Commercial grain storage may be tight again in 1999. On-farm grain storage may be needed this year to protect grain until it can be moved into more permanent storage or sold. The length of time grain can be held in storage, depends on the moisture content of the grain, the temperature of the grain and whether the grain can be kept from heating by means of aeration.

Corn needs to be less than 15 percent moisture in order to be held in storage for extended lengths of time without aeration. Aeration is used to keep grain from heating and to cool the grain mass to slow the

formation of molds. If sufficient volumes of air can be constantly pushed through the grain mass to prevent heating as a result of mold growth and respiration within the grain mass, grain at higher moisture contents can be stored for a time.

Corn at 16 percent moisture held at a constant 50 degrees F can be safely stored approximately six months. The shelf life decreases about one month for every point of moisture above 16 percent, (with sufficient airflow to maintain the grain at a constant 50 degrees F).

The shelf life is also reduced by higher temperatures. At any given moisture content, the

"shelf life" is less than half as long for every 10 degree F increase in temperature. Comparing corn at 16 percent moisture content, the shelf life (with aeration) is 186 days at 50 degrees, 81 days at 60 degrees, and 45 days at 70 degrees. NebGuide G87-862, Holding Wet Corn With Aeration presents a chart showing the "shelf life" of grain over a range of moisture contents and temperatures.

Airflow rates as low as 1/10 cfm/bushel have been successfully used to hold grain at or less than 16 percent moisture during the cooler part of the year. Operating the fan continuously

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