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Pay Attention to Stored Grain

By Charles Hurburgh, Department of Ag and Biosystems Engineering

The first significant warmup of the year should be a reminder to check stored grain frequently. If good practices were followed through the fall and winter seasons, grain temperatures should be in the 30s or below. Grain moistures last fall were above average, and there are many bins with corn moistures in the range of 16-20%. This wetter grain will spoil quickly if grain temperatures rise.

In the bin, headspace warms first which can lead to condensation. To reduce this problem, ventilate the headspace by running the roof fans, if the bin has them. This will take out moisture without having to warm the grain mass.

If there is a temperature rise in the grain, mold activity is starting and the aeration or drying fan should be operated. If the bin doesn't have temperature monitoring capability, then it will be necessary to run the fans periodically whether there is a need or not.

It is possible to preserve cold temperatures even if the fans have to be operated. Pay attention to the dew point of the air; recent dew points have been in 30s and 40s with 60-70 degree outside temperatures. Evaporative cooling, especially from wetter grain, will keep the grain slightly above the dew point. Low humidity days will not warm the grain as much as high humidity days that are at the same temperature.

For bins with wet corn, it's important to not hold onto the moisture much longer. Low humidity, moderate-temperature days are good for air drying. Humidity typically goes up in May and June, so it will be best to have the grain dry by then.

When the circumstances require operating the fans, it is important to transition grain temperature by running the fan long enough to change the temperature in the entire bin, not just part way. For a drying fan of 1 cfm/bu flow rate, this will take about 15 hours; for an aeration fan of 0.1 cfm/bu it will take about 150 hours. As a reminder, low humidity days have an advantage because the grain temperature may not change much due to evaporative cooling.

Plan to sell or use the wetter corn first since much of the storage life has been used up, even at cold temperatures. The likelihood of spoilage later in the summer, when even dry corn is at risk, is much higher. USDA estimates that considerable 2014 corn will have to be kept in condition over a year, based on projections for the 2015 marketing year.

Spring is the time to pay close attention to stored grain. This year, there is more wet corn in storage, and there has been a rapid weather switch from cold to warm. Check now and often to prevent future problems.

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