Will You Sell The Grain You Harvest This Year?

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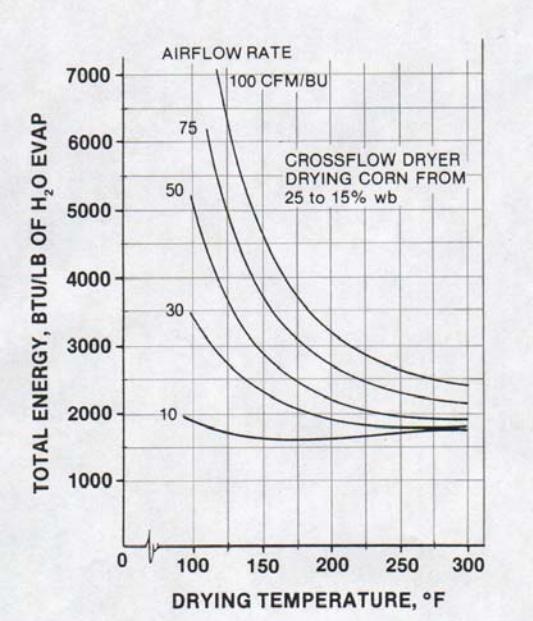
Corn harvested for grain this year will likely be wetter than normal and lower in test weight. Setting the combine properly is critical for obtaining the highest yield of undamaged kernels. Even with proper settings, wet corn may experience kernel damage and excessive cob pieces. Plan to screen the grain before drying to reduce the cost of drying fines and to allow uniform airflow through the grain in the dryer. You can use higher drying temperature on wetter corn to increase the drying rate and drying efficiency but grain temperatures (lower reaches of the dryer) should be in excess of 150° F so as not to reduce the test weight more than necessary. The graph shows the energy to remove a pound of water from corn grain versus the drying temperature. As the drying/plenum temperature is increased the energy to remove water goes down or the dryer is more efficient. Newer continuous cross-flow dryers have air flow rates of about 80 cfm per bushel while batch flow dryers use about 30 cfm per bushel. Rapid cooling of hot grain (cooling section of column drier) increases stress cracking which contributes to broken corn kernels after handling. Using slow cooling methods such as in-bin cooling or dryeration reduces stress cracking. If kernels are cracked during harvest and will be stored into spring, dry the corn to 13% this year to give it a longer bin life expectancy. If you'd normally use an ambient air or low temperature dryer, you'll need to make plans to get the corn dried to 20-22% before filling the bin or add a high temperature heater to the bin dryer to dry the corn to 22% then shut off the heater and finish drying with air. Stirring may be required with this system to avoid over drying.



Efficiency of High Temperature Dryer

Clean storage bins, even under perforated floors, and apply an approved insecticide prior to loading the bin. Screen the dry grain before delivery to the storage and use a spreader to help distribute any remaining fines. Fines interfere with airflow through the storage during aeration. "Coring" the bin (removing grain and fines from the bin center by operation the unloader) is an effective way of removing the fines from the bin center. Truck loads filled during coring can be marketed directly or the grain can be screened

and reintroduced and spread over the top of the grain in the bin. Level the top surface of the grain to uniform air flow through the grain mass.

Aerate the grain to lower its temperature at the rate of 0.1 CFM/Bu or greater. The grain is sufficiently cooled when the temperature of the discharge air drops dramatically. After the temperature drop is observed, run the cooling fan for another 6-12 hours to assure uniform cooling. Repeat this cycle throughout the fall whenever grain temperature exceeds daily average ambient air temperature by 10^{o} F. Hold the grain at 28-35 ^{o}F throughout the winter. Inspect the grain for signs of heating and or mold growth weekly in fall and every two weeks in winter. Use aeration to cool hot spots as they develop. Remove the grain from the bin if aeration can not control heating.

Grain that is damaged or has low test weight (<54 lbs/Bu) is more prone to infection and deterioration by molds. Consider this high risk corn and plan to market it before the warm weather of spring.

For more information on grain drying and design and management of aeration systems for dried grain, obtain copies of the following publications from MWPS at: http://www.mwps.org

Managing dried grain in storage (AED-20)
Dry Grain Aeration Systems Design Handbook (MWPS-29)
Grain Drying, Handling and Storage Handbook (MWPS-13)