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News Column
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PAY ATTENTION TO GRAIN TEMPERATURE

When a load of grain is delivered to the elevator, the farmer wants to know three things about the grain. Farmers are paid for the weight of grain delivered minus discounts for high moisture or grain condition. The third factor is on the moisture tester, but not recorded on the ticket and rarely shared with the farmer unless they specifically ask. Keeping stored grain cool is of critical importance as outdoor temperatures fluctuate and eventually start to warm this spring. As spring beckons and temperatures fluctuate, it is important to check stored grain regularly to ensure it stays cool and dry. It would be in the best interest of the farmer and the elevator if grain temperature information were shared.

For each 10-degree increase in grain temperature, the allowable storage time decreases by about half, said Ken Hellevang, North Dakota State Agricultural and Biosystems Engineering Specialist. For example, the allowable storage time for 18 percent moisture corn is about 200 days at 40 degrees F, 90 days at 50 degrees F, 50 days at 60 degrees F and only 30 days at 70 degrees F. "Not only are daytime temperatures increasing, but the bin works as a solar collector," he says. "This heats the grain to temperatures exceeding outside temperatures, particularly on the south side of the bin and on the top of the bin."

Farmers should run the aeration fans periodically at night or during the cool part of the day to cool the grain. The goal is to keep the grain temperature cool during spring and into the summer, preferably below 50° F. Temperature of grain deliveries is a great way to monitor grain temperature in the bin and alert the producer to possible troubles.

Cover aeration fans when not in operation. The wind will push warm, moist spring air through the grain, warming it to near the daily maximum temperatures. Hellevang suggests checking the stored grain every two weeks. While checking on the grain, measure and record the grain temperature and moisture content. Rising grain temperature may indicate insect or mold problems. Insect infestations can increase from being barely noticeable to major infestations in three to four weeks when the grain is warm.

Grain moisture content is even more important for summer storage. The moisture content must decrease as the grain temperature increases to prevent mold growth and grain deterioration while keeping the grain as cool as possible, Hellevang says. Corn needs to be dried to 14 percent moisture, while soybeans should be dried to 11%, and wheat to 13 percent for summer storage.

The goal for summer storage also should be to keep the grain as cool as possible to limit insect activity. It is best to complete delivery of all non-feed grain by late July or early August. This allows time for grain bin clean up, repair, and treatment for the fall harvest season.

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