



NEWS RELEASE

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Immediate Release

Grain must be managed for summer storage

HUMBOLDT, SK – Last year’s record harvest combined with nationwide grain transportation issues have resulted in more grain in Western Canada being stored far longer than usual. This situation has led to a lot of producer questions about what to do to keep their grain from spoiling in the bin during the coming summer months.

“It needs to be managed,” stressed Dr. Joy Agnew of the Prairie Agricultural Machinery Institute (PAMI) in Humboldt, a grain storage researcher. “Even if it was harvested dry, you can’t just let it sit in the bin all summer and expect it to be all right when you unload it.”

Grain cooled last fall and over winter is likely to have problems as it is warmed by the sun during the spring and summer.

“Any time you have temperature variations, there is going to be moisture variations and moisture migration, which can potentially lead to spoilage,” she said. Warmer outside air will warm the grain at the bin wall, which will result in convection currents in the bin. Cool grain in contact with warm grain may result in condensation, which can increase grain moisture in pockets that can then lead to spoilage.

If a producer knows their grain will be moved off the farm before June, they can leave it as is. However, if the grain will be stored into June or July, Agnew advises producers to start dealing with it now, so it can be warmed gradually.

For dry grain that was cooled last fall, the best way to warm it gradually is to blow air through it now, while the difference in air temperature and grain temperature is far less than it will be later.

The protocol Agnew and her PAMI-based colleagues are recommending is warming grain slowly and gradually by running fans when the outside air is less than 10 degrees warmer than the grain itself.

If you start now, Agnew noted, the grain can be warmed slowly without excessive condensation in the grain. The time it takes to equalize temperature varies with bin and fan size, but usually a couple days of running should change the entire grain mass. Since the ambient temperature is slowly increasing, the grain temperature will slowly increase as well with continuous fan operation.

“You want to warm the grain slowly,” she said. “So now is an ideal time to get going on it.”

The theory behind this recommendation is that if you wait until summer to start aerating, hot air hitting cold grain in the bin will result in large amounts of condensation around the ducting. That condensation could freeze (if the grain temperature is still below freezing), restricting airflow through it, and possibly creating large pockets of spoilage.

Once the grain is above zero degrees, one management option is to turn the grain – remove it from the bin and put it back in.

“Turning the grain helps to even-out the temperature and moisture variations, redistributing cold and warm spots, and helps warm the grain a bit, too,” Agnew said.

The grain can continue to be gradually warmed to 10 to 15°C, she noted, but no warmer than that.

“The lower the temperature difference between the air and the grain at the end of the warming process, the better, but you don’t want to increase the grain temperature above 15°C. Maintaining a grain temperature of 15°C throughout the summer should minimize the risk of convection currents and condensation on the bin walls,” said Agnew.

For damp or tough grain that was cooled last fall, the options are to dry it with a hot air dryer, sell it cold, or producers can follow the same protocol recommended above, using natural air drying fans to dry the grain, although that will usually take several weeks.

Another concern when using spring aeration is the issue of “fuzz” from Poplar trees and other airborne materials that will bypass most standard fan screens and clog the inside of perforated ducts, resulting in reduced airflow through the grain and ineffective aeration. Cleaning that fuzz from inside the ducts is a real chore. If running the fans through these periods, producers may need to make a modified screen for their fan intake, shaped much like the cylinder-shaped screen on many combine radiators with a fine mesh (window screen). The modified screen will need to be cleaned every few days.

All of Agnew’s recommendations are based on knowledge she and others at PAMI have gained over their years of studying how grain behaves at different temperatures. They have not had the opportunity to conduct trials on summer storage of grain, but they hope to run some trials this spring and summer.

“Be careful, and monitor, monitor, monitor,” she advised producers. “Keep a close eye on it. Don’t leave it in the bin and assume it will be okay in the fall.”

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