

Extension Responds: Feed supplies

High Moisture Corn Harvest Considerations

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Weather and time constraints can thwart even the best plans to ensile high moisture corn at the proper moisture level. These situations prompt the question, "What can I get away with?" Here are some factors and suggestions to consider when harvesting and storing of high moisture corn.

Consider the type of silo first. Minimum, maximum and desirable moisture levels are different for conventional (CON) and oxygen-limiting (OL) silos. This table illustrates these relationships.

High Moisture Corn Storage in Conventional and Oxygen Limiting Silos

Conventional Top Unloading Silos and Silo Bags

Corn Kernel Moisture %

	minimum	maximum	desired
Ear corn	26	32-36	40
Shelled corn	24	28-30	35

Bottom Unloading Oxygen Limiting Silos

Corn Kernel Moisture %

	minimum	maximum	desired
Ear corn	26	28-32	36
Shelled corn	24	26-28	32

**OL Silo with Forage Unloader*

High moisture shelled corn above 32% kernel moisture may cause difficulty in unloading from typical OL silos equipped to handle high moisture shelled corn.

Corn stored above 40% moisture will develop an undesirable fermentation, with yeast and high ethanol levels. Animal acceptance will be poor with this type of fermentation.

Recommendations for Harvest, Processing and Storage of Wet Corn

1. Check corn kernel moisture from different fields and harvest the field closest to the optimum level first. Corn with higher than desirable moisture tests may be less of a problem when fed out during the coldest months, so it is best to put it on

the top of the silo. Very wet corn may be prone to spoilage when removed from the silo or even prior to removal if there was poor fermentation.

2. Take care not to over process corn that is above the desired moisture level. It is easy to get excessively fine high-moisture corn that may result in fat test depression, off-feed problems and an increased incidence of displaced abomasums resulting from rumen acidosis. As the corn approaches optimum moisture content, increase the degree of processing.

3. High moisture corn ferments more slowly and less extensively than corn silage. Thus, consider applying a lactic acid bacterial inoculant to high moisture corn, especially if it is beyond the optimum moisture level. Apply a minimum of 100,000 colony-forming units per gram of fresh corn to help insure a good fermentation. Use an inoculant developed specifically for high moisture corn. Ensiling high moisture corn during cold weather and after several days of freezing temperatures may severely reduce the population of naturally occurring lactic acid-producing bacteria.

4. Consider applying propionic acid at 12-15 pounds per ton of actual propionic acid. There are a number of products with less than 100% propionic acid. Be sure to base rates on pounds of actual propionic acid. The propionic acid must be placed onto the grain. Applying the acid by spraying onto the corn as it arrives at the blower throat has often resulted in less than satisfactory results because of excessive volatilization loss. Placing the acid on the corn as it is augured to the blower is the preferred method of mixing the acid so that all corn is treated uniformly.

5. Corn with significant mold on the kernels and cob is best harvested and stored as shelled corn (rather than ear corn). Some producers have taken moldy corn and dried it down to storable moisture while screening off the fines. Where drying is not an option, propionic acid is recommended. The propionic acid will not lessen any problems from the mold, but will likely prevent mold problems from getting worse.

6. Plan for ample removal rate from the silo. A removal rate of 3 to 4 inches per day may be required to prevent heating during feeding in warmer weather. Treating the bottom third to half the silo of high moisture corn with propionic acid (12-15 lb/ton) may be desirable to insure quality during warm weather feeding.

7. If high moisture corn is stored in bags, locate bags away from trees, long grass, and remove snow from around the bags. For best results, remove bagged high moisture corn during cooler months. Punctures, rips, or tears in the summer can cause rapid and expansive spoilage.