

Dealing with the Challenges of the 2009 Fall Harvest

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With the majority of the county's corn crop still to be harvested and mold starting to develop in some fields, many farmers are justifiably nervous about getting their crop harvested. With an extremely wet fall harvest period following a cool and wet growing season much of the corn crop is drying down very slowly. Fall harvest has been delayed due to wet field conditions and now the crop is starting to degrade in quality due to several types of molds developing on the ears.

In fields with mold development the recommendation is to take off the crop as soon as possible to eliminate further spread of the molds. Unfortunately, many of the fields that have mold are those that were planted after May 10th and those planted with later maturing corn varieties, meaning these are also the fields with the wettest corn. Harvesting this wet corn will result in higher drying costs, but if molds are present they will only get worse and farmers run the risk of not getting any useable crop if they don't harvest. Ideally the crop should be harvested as soon as possible, after the moisture content in the grain nears 30% moisture or less.

Harvesting the wet corn and drying it down is really the only option for grain producers that have grain contracted for delivery, and may not be a bad option for livestock producers as well. If the grain is dried down prior to storage it will not kill the molds, but it will help inhibit further mold growth while in storage, and it's much easier to blend and dilute down dry corn that contains molds or mycotoxins than high moisture corn.

If you have livestock and can utilize high moisture corn this would be the best use of corn that is up to 35% moisture. This is the maximum moisture content that should be put into a bag or bunker silo. Moisture levels need to be lower if you are putting it into a bottom unloading oxygen limited silo. In those silos you will need to have grain moistures down to at least 30%, with the ideal moisture in the range of 25-28%. You will have problems with the grain freezing in winter and not funneling down if it's put into bottom unloading unit higher than 30% moisture. High moisture grain that starts approaching 40% moisture may result in undesirable fermentation with a high yeast proliferation and ethanol levels causing poor animal acceptance.

I would also recommend putting very wet corn (32-35% moisture) into bags vs. a bottom unloading silo as it's much easier to remove from a bag when it freezes that it is from a silo. It's also best to use up wet moldy corn during the winter months and bags may give you more flexibility to do that. If you will be feeding out of a bag or silo into the warmer summer months you should again treat the grain with inoculants to make the grain more stable and to prevent further mold and yeast growth when feeding it in warmer temperatures next summer.

If the wet corn is showing signs of mold you should treat the corn with *Lactobacillus buchneri* bacterial or other combination inoculants. *L. buchneri* bacteria will improve the aerobic stability of high moisture corn and reduce the growth of yeasts. However, this inoculant will slow down fermentation.

Another option would be to add propionic acid to the wet grain before storing it bags, bunkers or silos. At the correct levels propionic acid will lower the pH to less than 4 and this will inhibit any further mold growth in the stored grain. Special applicators are required for applying propionic acid and the grain can only be used for livestock feed after the acid has been applied. It's important to point out the neither the *L. buchneri* inoculant nor propionic acid will eliminate the mold that is already present on the corn when it's harvested. These products will only preserve the crop and inhibit further mold growth during storage.

One of the primary concerns when we see molds is the possible presence of mycotoxins that can cause reproductive and production concerns in livestock. It's very important to point out that the presence of mold does not guarantee that mycotoxins are present, nor does the lack of visible mold on grain mean that they are not present. However, we do know that moldy corn has the potential to contain mycotoxins. Some molds can be detected under a black light, but again, just because the mold glows under a black light test it does not mean that mycotoxins are present. The only way to test for mycotoxins such as vomatoxin and zearalenone is to send samples to a lab for analysis.

Some field dry down is certainly still possible and farmers are encouraged to wait before harvest if mold is not present in their fields. Research from North Dakota shows that you can get a maximum drop of 3-4 points per week in ideal weather November and you get an average drop of 2-4 points of moisture per month throughout the winter.

Farmers with moldy corn should avoid harvesting the corn as ear corn, if at all possible. This is because the majority of the molds actually originates in the cob and grows outward into the kernels. In fact, farmers who don't take the time to break open several ears and look at the cob and kernel tips may not even realize that they have a mold problem. If mold is present up to one-half of it can be removed from the feed by removing the cobs and fines. Another advantage to shelling the corn vs. picking it as ear corn is that it can be dried down to below 15% moisture to inhibit any further mold growth while in storage which is not possible to do with cribbed corn.

If a farmer only has the option of cribbing ear corn it's very important to remove as much of the fines and shell corn as possible before putting it into the crib. (Fines removed from mold corn should not be fed to livestock). Ear corn that is free of mold and under 25% should keep okay in a narrow crib of less than six feet in width. If the ear corn is moldy and/or 25-30% kernel moisture it should be cribbed when frozen and fed up before next spring to avoid spoilage that will occur when temperatures get to 40 degrees F. or warmer. It is not recommended to crib ear corn above 30% moisture.

The wet corn also means lower test weights and more deductions when selling it on the commercial market. The good news is that feeding performance due to low test weights are not really impacted until bushels weights get below 48 lbs. Thus, it may be more advantageous to a grain producer to sell high moisture corn to livestock producers or feed it through animals. However, if your grain has mold on it should be tested for mycotoxins prior to selling it or using it for feed.

In summary, we encourage producers to harvest the corn as soon as possible if molds are present even though it means paying higher drying costs. The best use for wet corn that is starting to mold is to treat it and feed it up through the winter months to livestock. The answer on what to do with the crop and how to manage it will be different on almost every farm and field, due to the range in planting dates, variety types, and the storage, feeding and drying options that are available to each farm.

See the Green County UW-Extension webpage at <http://www.uwex.edu/ces/cty/green/ag/index.html> for more information on dealing with corn and soybeans from the 2009 fall harvest.

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