

Ear rot, wet corn, and what to look out for

We have had the coldest and wettest October on record for much of the region, and that has obviously not been conducive to corn dry-down. We have been hearing numerous reports of mold showing up on corn in the fields and questions about what to do and how to handle it. This newsletter will address a few things you need to know.

In a Nutshell:

- * **If you have moldy corn, toxins are a potential issue**
- * **Get a preservative for your HMC piles**
- * **Size your HMC pile so you can manage the face**
- * **Ensiling will not destroy toxins**
- * **Testing for toxins is cheaper the problems toxins cause**
- * **Do not feed moldy corn to bred heifers if at all possible**

The molds most commonly found during the growing conditions we have had are Fusarium ear rot and Gibberella ear rot (Red ear rot), though diploidia ear rot and cladosporium may also be showing up. Following are some pictures of the different types of ear rot to help you determine what you may be seeing (adapted from Integrated Crop Management). The reason I included these pictures is that Fusarium and Gibberella are toxin-formers and we need to watch for those if we intend to feed this corn! Smut is not a toxin-former, but can back animals off feed. With the exception of cladosporium, which occurs most commonly in hail damaged corn, the molds appear white or pink. Fusarium and Gibberella can form the toxins fumonisin, vomitoxin, and zearalenone that can be devastating to livestock. Hog producers in Indiana have already had to empty feeders filled with new crop corn because of vomitoxin.



Pictured from left to right: Fusarium ear rot, Gibberella, Diplodia, and Cladosporium

If there is mold in your corn, we need to be concerned for a couple of reasons. First, if molds are present, there is potential for toxins and toxins can cause a number of different problems from going off feed, diarrhea, abortion, heifers in constant heat, prolapse, and infertility- in both cows and bulls. Mold does not necessarily mean that toxins are present, but it does indicate that the potential is high. Secondly, mold by itself can result in decreased intakes and lost gains.

We can handle this with some preventative maintenance. If you are putting up high moisture corn (HMC), you should seriously consider using a buffered acid product like Silage Savor to stop mold and yeast growth. These acid products are the best way to manage moldy corn. If that is more expense than you want to think about, using an inoculant like Biomax 5 at twice the rate for corn silage will help you get a good fermentation to produce the acid necessary to stop mold and yeast growth. Stopping the mold and yeast growth will not eliminate toxins, but it will limit further growth and further toxin potential and help improve dry matter recovery. It will be key to pack well, provide an effective seal and size the pile so you can manage the feed-off face. This last point is absolutely critical. If you cannot feed off the face quickly enough, the same mold you had in the field will begin growing and possibly forming more toxins as you feed it out. Sizing the pile so the feeding face is manageable will help you avoid those problems at feed out. If you can't manage the face effectively, at least pitch the spoilage this year! It isn't worth the risk to feed it. **Ensiling will not destroy toxins**, so if there are toxins going into the pile, they will come out of the pile. **Drying also does not destroy toxins**, but limits mold growth.

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If you have an option, harvesting the fields with the worst mold as soon as you can will help you limit further mold growth, either allowing you to treat it and put it up as HMC, or drying it to inhibit mold growth. Putting wet corn in an air bin could yield some not-so-favorable results. A University of Minnesota publication estimates that if you have 22% moisture shelled corn, you have 63 days at 50 degrees before the corn becomes so moldy that feeding it will be a challenge or you will be discounted at the elevator.

Molds are more detrimental to some classes of livestock than others. Bred heifers and cows are the most at risk for toxin problems. If you have suspect grains and insist on feeding them, the order of feeding would be to feed the moldy grain to steers first, then mature bulls, growing bulls, replacement heifers, bred cows, and then bred heifers. You have too much invested in developing the bred heifers to risk aborting them at this point because of moldy, toxin-containing grain.

The safest thing to do when we know we have mold is to **test for toxins**. A mold count and identification will help you identify if you have a toxin-forming strain of mold. You could also have a toxin screen done to help identify potential toxins. Toxin screens are expensive, but so is a pile of dead cattle or a group of heifers that just aborted. When we know the potential for a problem is present and greater than other years, it will be worth it to know what you are dealing with. Dairyland Laboratories runs toxin screens on grain and forage samples and your livestock production specialist can assist you with sampling and sending the sample for analysis. While putting up your HMC pile, take a few samples and have them sent in for analysis. It is best if you can get a representative sample from several fields or several different loads because it will give you a better idea of toxin levels than just a handful from a single spot.

Grain screenings have been a cheap source of energy in the past. This year, you need to be extremely careful if you are purchasing screenings. Cleaning grain can help knock off some of the mold and their associated toxins, meaning the highest toxin concentration is going to be in the grain screenings. Having tests run on screenings for toxins would be highly recommended.

If you have toxins, dilution is the key to getting some feeding value without causing serious problems. Feeding a combination of the moldy corn with good corn will help limit potential problems (but storing moldy grain with clean grain is NOT recommended). If toxins are still high, there may be some options for a feed-through product to bind toxins, but research on that is limited, effectiveness is highly variable, and it is more cost effective to have good management, use a preservative, and dilute moldy grains.

Another common question is the result of this moldy corn on distillers' grains. Mold is not good for fermenters, but the concern for you as cattlemen is that if the corn going in to the ethanol plant contains toxins, the resulting distillers' grains will also have toxins. We are intensively monitoring the distillers grains at our facilities for feed toxins and the corn suppliers are also beginning testing in earnest to ensure we have a safe product to feed our livestock.

Everyone seems to be looking for a silver bullet to the problem of moldy grain, but there just is not a simple fix for this problem. Yes, we have probably all fed questionable corn before. For the most part, we may have gotten away with it, but there is always a first and this year has been very atypical all the way around. We cannot deny the potential for problems this year and the answer is to test your grain, manage it properly, and dilute moldy grain.

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