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### Dealing With Mold in the Crop

We probably can't look at corn in the field and predict what will happen in feeding the crop. In many cases, we probably can't look at a mold or mycotoxin analysis and confidently predict what will happen, unless mycotoxin levels are clearly above a problem level and the sample uniformly represents that bulk of what we are feeding.

Mold and mycotoxins that might be produced by molds can cause problems for livestock. It is not always serious. Illinois Extension Dairy Specialist Mike Hutjens wrote recently that "Signs of mycotoxin problems in dairy cattle include rumen disorders and reduced microbial digestion, loose fecal discharges, reduced dry matter intake, decline in fertility, hormonal-like changes such as udder development and fertility, and immune suppression where cattle do not respond to disease challenges." Consider other factors. All breeding problems, for example are not caused by mold.

One practical consideration is that we have a crop in the field, a good crop in most cases. Mold damage is probably not so serious that crop insurance companies will pay for plowing the crop down so we can buy other feed. (You can ask.) That means in most cases, as in most years, one way or another the crop will be harvested eventually and it will be fed. Then the question is making the best of it.

We are getting calls about mold on the ear under the husk that might be black, gray, white, pink, green, and/or blue. Kernels appear to be sound, not "mushed" and rotting, unless there was hail damage to ears. Trevor Hamre, a Producer's Hybrids rep, says mold seems more prevalent on later maturing hybrids that were not as mature (dry) when it froze. That's logical.

Gray and black molds generally do not cause direct health problems. They can use nutrients from the crop and may affect taste and smell and by that affect dry matter intake. Some white molds are fusarium molds that can produce mycotoxins that can cause health problems along with reducing nutrient levels and palatability. Pink molds are usually fusarium molds that can produce mycotoxins. Mycotoxins production is more likely if the plant is stressed for nutrients, if the weather is damp, and with cool nights and warm days. Blue and green colored molds can produce mycotoxins.

Aflatoxin is one of many mycotoxins. Aflatoxin is produced by certain species of aspergillus molds. These can be green or yellow. This is a more serious issue under hot weather conditions, so should not be much of a concern this year compared to the hot drought year of 1988. Black lights were used in 1988 to determine the presence of aflatoxin. Black lights are not useful as an indicator of all molds and mycotoxins.

A mold identification test indicates whether the mold is a species that can produce mycotoxins. This might give clues about problems to watch for.

#### TESTING:

A mold count might give a little bit of a clue about the severity of the problem. But remember low levels of molds can produce high levels of mycotoxins; and high levels of molds can have negligible production of mycotoxins. Mold counts might tell us more about whether you might have other issues like feed intake or digestive system upsets. We might be able to tell some of that by how it looks and smells.

An actual analysis for ID and levels mycotoxins present tells us more about whether we can expect significant health issues. Consider whether the sample represents what is fed. Consider the mycotoxin level in the whole ration, not just one ingredient.

Poultry and hogs are usually more sensitive to the presence of mold and mycotoxins in corn compared to cattle, because corn is usually a high percent of the diet.

Are there differences in fields? I'd harvest better fields for high moisture corn and problem fields for dry corn. If I plan to sell corn to a poultry or hog feed market, I might look for the better corn to sell. I might take samples to the market to check acceptability.

If I'm hoping to put up high moisture corn and the moisture drops to 23 or 24%, below ideal (28 to 32 maybe), I might change to dry corn storage or check what it would cost to treat it with a suitable propionic acid product.

For high moisture corn or snaplage that is still in a favorable moisture range, I might use a credible bacterial inoculant to improve the prospects that it will ferment quickly and ferment well.

In a 2007 discussion about mold issues in corn, State Extension Dairy Specialist Jim Linn said that snaplage and high moisture corn has more risk in storing corn with mold compared to dry corn, even in an ideal moisture range. He likes the idea of treating high moisture corn with a propionic acid product.

Consider feeding conditions for next spring and summer. If money is short, it might be most useful to treat feed that is at the top of the silo and not packed so well and feed in silos, bags, piles and bunkers where it will be fed next spring and summer in warmer weather. Lacto Bacillus inoculants provide faster fermentation as the crop goes into storage. L Buchneri inoculants do more for bunk life as we consider what we are feeding when warmer weather arrives. It could make sense to treat the top of the silo with Lacto Bacillus and the bottom with L Buchneri.

For dry grain harvest, set combines to minimize kernel damage and maximize cleaning. Use a screen cleaner ahead of the drier and bin if needed.

Balance rations to provide nutrients and maintain Dry Matter Intake. If dry matter intake is hurt by palatability issues, use appropriate supplements to improve nutrient density. Consider whether you have other options for blending feed to maintain DMI.

Don't force livestock to eat badly molded feed. This might be corn silage that accumulates around the edges of a bag or pile. Keep bunks and feed rooms clean daily.

Consider the use of credible "binder" type products that are mixed with rations for the purpose of absorbing and tying up mycotoxins that might be present.

Work closely with your feed rep, veterinarian, and other key resource people. Do some reading. Be watchful. Past experience is an important resource.

Your health is important too. Wear a good quality, two-strap dust mask when working in dusty conditions – whether on the combine, around grain bins, or around barns and feed rooms.

Minnesota, Wisconsin, Iowa, Penn State and other Extension organizations have some helpful articles posted on website that can be found with a little surfing. Check [www.extension.umn.edu](http://www.extension.umn.edu) and <http://fyi.uwex.edu/grain>. We are also glad to try to send articles related to specific concerns if we can.