

## Mold and Mycotoxin

Molds are fungi (fuzzy or dusty – appearing) that occur commonly in feedstuffs, including roughages and concentrates. Molds can infect dairy cattle causing a disease referred to as mycosis. Mycosis is most likely when cows may be immune suppressed during stressful periods. A mycosis can occur in various locations such as lungs, mammary gland, uterus, or intestine. An intestinal infection may result in hemorrhagic bowel. Molds may also affect cattle by producing poisons called mycotoxins that affect animals when they consume contaminated feeds, resulting in a mycotoxicosis.



Mold growth and the production of mycotoxins are usually associated with extremes in weather conditions leading to plant stress or hydration of feedstuffs, insect damage, poor storage practices, low feedstuff quality, and inadequate feeding conditions. Since molds are present throughout the environment and, therefore, mycotoxins can be formed on crops in the field, during harvest or during storage, processing, or feeding. Management of crop production can reduce but not totally prevent the occurrence and concentrations of mycotoxins. Managing silage also plays a role in reducing the incidence of mycotoxins. Standard silage – making practices should be followed to include hybrid selection, reproduction of field and harvest stress,

rapid filling of the silo, use of an effective silage additive, tight packing, covering, rapid feed-out, and discarding the spoilage.



Ruminants are more resistant to mycotoxin as they consume forages, by-product feeds, and wet feeds. They are exposed to a broader range of mycotoxins at concentrations that are higher than those found in dry grain mixtures. The Mycotoxins of greatest concern to dairy cattle include **ergots** produced in small grains, fescue, and other grass; **afatoxin**, which is generally produced by *Aspergillus* mold; **deoxynivalenol**, **zearalenone**, **T-2 toxin**, and **Fumonisin**, which are produced by *Fusarium* molds; and ochratoxin, PR toxin, mycophenolic acid, and roquefortine C produced by *Penicillium* molds. There are many other mycotoxins, some of which may also affect dairy cattle or co-occur with the more common mycotoxins in feeds. Contaminated feeds often contain multiple mycotoxins, altering the expected effects on the cow. The Picture on the next page demonstrates how specific mycotoxins can have negative effects on certain parts in the cow.

## Effects of Mycotoxins

### T2-Toxin, Don, AFB

- Gastroenteritis
- Intestinal hemorrhages
- Impaired rumen function
- Diarrhea
- Ketosis

### Ergots

- Impaired thermoregulation
- Convulsions

**DON - Deoxynivalenol**  
**ZEN - Zearalenone**  
**AFB, - Aflatoxin B,**  
**T2- Toxin**  
**Ergots - Ergot Alkaloids**  
**Endotoxins**

### ZEN, Ergots

- Irregular heats
- Low conception rates
- Ovarian cysts
- Embryonic loss
- Abortion
- Low testicular development
- Low sperm production

### AFB, T2-Toxin, DON

- Milk contamination
- Decreased milk production
- Mastitis

### T-2 Toxin, DON, Ergots

- Decreased feed intake
- Decreased feed efficiency

### DON, Ergots, Endotoxins

- Laminitis (lameness)

## Product of the Week

### “O” Free Choice Buffer

If there are molds and mycotoxins in your feed, your cattle can use some “O” Free Choice Buffer to help improve the rumen to deal with these toxins. “O” Free Choice Buffer can be used in addition to sodium bicarbonate or as a sodium bicarbonate alternative to help improve rumen health and function.

- Contains calcium and magnesium sources with rumen buffering capabilities.
- Provides clay-based buffers such as montmorillonite and bentonite.
- Contains yeast culture to help stabilize the rumen fermentation process.
- Serves as a highly palatable free-choice supplement.

