

Mycotoxin Management in Dairy Feeds

The most common mycotoxins are aflatoxin, deoxynivalenol (also known as DON or vomitoxin), zearalenone, and fumonisin. Use this table when analyzing mold tests. Watch for key symptoms associated with each mycotoxin and note what feeds may be the culprit.

Mycotoxin Description	Occurs	Animal Symptoms
<p>Aflatoxin</p> <p>A highly toxic and cancer-causing mycotoxin that decreases performance and overall animal well-being. Calves are most susceptible to aflatoxin.</p>	<ul style="list-style-type: none"> • Corn • Wheat • Cottonseed • Sorghum • Peanuts • Peanut hulls • Corn by-products 	<ul style="list-style-type: none"> • Reduced milk production • Dry, peeling skin on the muzzle • Liver damage • Hair loss • Overall appearance of ill-health
<p>Deoxynivalenol</p> <p>Deoxynivalenol (DON) is a relatively common in the northern half of the U.S. and in Canada. DON is one of the most immunosuppressive mycotoxins, causing increased risk from other stressors.</p>	<ul style="list-style-type: none"> • Corn • Wheat • Barley • Oats • Sorghum • Rye • Grain silages • Corn by-products 	<ul style="list-style-type: none"> • Lowered milk & milk fat production • Higher somatic cell counts • Decreased rumen function • Damaged mucous membranes • Diarrhea
<p>Zearalenone</p> <p>Also known as the reproductive mycotoxin, zearalenone and related compounds are most harmful for the breeding herd.</p>	<ul style="list-style-type: none"> • Corn silage • High-moisture corn • Barley • Sorghum 	<ul style="list-style-type: none"> • Irregular or missed estrous cycles • Reduced conception rates • Increased embryonic losses • Early reproductive maturity • Reduced fetal development • Lower viability of newborns
<p>Fumonisin</p> <p>Fumonisin are common in the southern half of the U.S. Ruminants tend to be less susceptible to fumonisin than monogastric species.</p>	<ul style="list-style-type: none"> • Grains • Corn • Corn by-products • Corn silage • Some grain silages 	<ul style="list-style-type: none"> • Decreased feed intake • Reduced immune response • Lowered liver & kidney function

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Different mycotoxins will call for different approaches. Once you and your nutritionist understand the mold testing results, there are multiple modes of action.

- 1. Limit feeding to higher risk ingredients to most vulnerable animals.** Based on your test results and the mycotoxin risk, carefully observe animals getting the known higher risk feeds and manage formulation of feeds. Stressed animals, youngstock, and reproducing animals are most at risk. For ingredients that may be at risk you can include separating and discarding fines, use clean feedstuffs to reduce concentration, and piling silage after defacing and before adding to a mixer wagon.
- 2. Support for the immune system.** Mycotoxins, once consumed, often trigger an immune response, and suppress a cow's ability to fight off infection and disease. The digestive tract and gut play a significant role in mitigating mycotoxins once in the body. Gut health additives such as a yeast and antioxidants (vitamin E, [AOX™](#), selenium) can boost the immune system.
- 3. Use an additive in formulation.** Feed additives can be an efficient tool in managing risk associated with presence of mycotoxins. Peer reviewed studies have shown certain substances can minimize the impact of mycotoxins through either binding or through detoxification.
- 4. Include organic acids in total mixed rations that inhibit yeast and mold.** A [three-acid blend](#) of acetic, benzoic, and propionic acids can help to control yeast populations and protect your rations against mold and mildew growth. This tactic benefits the feed in front of your cows by reducing nutrient loss due to yeast and mold growth and enhancing dry matter intake by lactating cows during heat stress.
- 5. Prevention can be worth more than a cure.** The most common route of mycotoxin exposure is through the consumption of contaminated feeds, making crop quality a critical factor in the development of mycotoxicosis in animals. Prevention starts in the field where molds are always present. It is as simple as understanding your crop and its environment. What is the proper soil nutrient profile for your plant? Is there an opportunity to plant a hybrid that offers disease resistance? What management practices, like till or no-till and crop rotation, are being implemented?

Proactively working with your nutrition team by gathering knowledge and finding a strategy for prevention and management can prove to be positive for cow health and feed cost.

Contact your local nutritionist or feed mill to learn more, or visit feedpromote.com/dairy.