



CEDAR GROVE VETERINARY SERVICE NEWSLETTER



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MYCOTOXINS: THE FUNGI YOU DON'T WANT AT YOUR FARM

Do you ever find yourself looking at your cattle herd and thinking to yourself that you seem to be doing everything that the vet and nutritionist are recommending, but never get your milk production any higher? Or do you feel you should have more cows pregnant at herd health and no management changes have improved conception rates? Or do you just feel like you see the veterinarian too much for a wide variety of diseases in the herd with no apparent cause or link? While any of these situations could arise for many different reasons, one that you may not have considered are mycotoxins.

Molds, which are considered filamentous fungi, can be found in roughages and concentrates and are capable of producing a poison called mycotoxin. Mycotoxins can affect animals when they consume a feedstuff that is contaminated with the toxin. Mycotoxins are produced by a wide range of molds and are merely a byproduct of the mold's existence in the feed. They can be formed on crops while in the field, during harvest, or during storage, processing, or feedings. It is estimated that about 25% of

crops are affected annually with mycotoxins

Even though it seems like mycotoxins are a prevalent problem, they don't have to be. While it is very difficult to avoid molds since they are present throughout the environment; it takes a certain misstep in harvesting feedstuff to lead to mycotoxin production. Mold growth resulting in mycotoxin production is most often associated with extremes in weather conditions leading to plant stress or hydration of feedstuffs, poor storage practices, low quality feedstuff, and inadequate feeding conditions.

Moreover, not all mycotoxins are created equal. *Aspergillus*, *Fusarium*, and *Penicillium* are the most important molds in regards to cattle health. Aflatoxin, produced by *Aspergillus*, can cause reduced feed efficiency and milk production, liver disease, and decreased appetite. Problems with aflatoxins have also been shown to reduce an animal's ability to effectively produce an immune response to vaccines. Deoxynivalenol (DON/Vomitoxin) produced by *Fusarium* molds, is one of the most commonly

DO YOU KNOW YOUR VACCINES?

J-Vac (Pink)

Use: For the vaccination of healthy cattle as an aid in prevention of mastitis due to E. coli and the effects of endotoxemia caused by E. coli and Salmonella typhimurium.

Dose: 2 mL IM or SQ

Dosing: As an aid in the prevention of mastitis, inject one dose at 7 months of gestation or at dry off; revaccinate at 1 to 3 weeks before calving. Revaccinate annually as above.

As an aid in the prevention of the effects of endotoxemia, whole herd vaccination may be done at any time. Vaccinate with 1 dose followed by a second dose 2 to 4 weeks later. Revaccinate annually as above

Special Notes:

Calves vaccinated under 6 months of age should be revaccinated after 6 months

detected mycotoxins and can cause dairy cattle to show poor performance, including limiting milk yields. Zearalenone, also produced by *Fusarium* molds, can produce estrogenic responses in animals. This leads to abortions, poor reproductive performance and mammary gland enlargement of virgin heifers.

If you suspect that mycotoxins may be an issue on your farm, it is best to talk to your nutritionist and/or veterinarian. The first step they will most likely take is to test the feed for mycotoxins. Several commercial laboratories are available to screen feedstuff for a large array of mycotoxins. There is a cost associated with this type of testing, but it is often very reasonable especially considering the consequences that mycotoxins can inflict on herd health and production. One of the limits of testing is the amount of variability in mold distribution in feeds. It is for this reason that a representative sample be sent in from the entire feed source. Additionally, any feed sample sent in for testing should be preserved properly—dried, frozen, or treated. Molds and mycotoxins

can proliferate quickly during transport which may skew the results.

Based on the results of the testing, a strategy can be created to manage the mycotoxin situation. Prevention is always the first place to start with any herd management problem. Prevention of mycotoxins in silage includes following accepted silage making practices. These include quickly reducing the pH and eliminating oxygen from where the silage is stored. Some additives—such as ammonia, propionic acid, sorbic acid, and enzymes—are beneficial in reducing mold growth. Silo or bunk size should match herd size to insure daily removal of silage at a rate faster than deterioration. Grains or other dry feeds should be stored at a low moisture content (<14%). Aeration of grain bins is important to reduce moisture migration and to keep feedstuffs in good condition.

If mycotoxins are present or suspected, feeding out moldy feed should be avoided, if possible. In the case of unacceptably high levels of mycotoxins, dilution or removal of the contaminated

feeds is preferred action. It could be advantageous to also increase dietary levels of nutrients such as protein, energy and antioxidants to boost cow health and aid in reducing the effects of mycotoxins. Many producers that face a mycotoxin problem find adding binders or absorbent materials to also be beneficial. These feed ingredients bind to the mycotoxins and reduce intestinal absorption.

Mycotoxins are prevalent in feedstuffs and many types exist. They also affect cows in many different ways, which makes connecting the dots between the changes in production and health traits to a specific cause very hard. However, with proper management of crops and feeds, the impact of mycotoxins can be managed. Mycotoxins don't need to be a cause for panic, you just need to have a good plan in place to keep the fungi away.

Distribution of Foot Lesions: Does your farm match the data?

A recent study out of Alberta, Canada investigated the prevalence of foot lesions and the associated risk factors in dairy cows. The data incorporated information from 7 hoof trimmers, working on 156 dairy farms, with a total number of 28,607 cows. From the data, it was found that digital dermatitis was the most common lesion among all the farms with 15% of cows and 94% of herds being affected by the condition. Sole ulcers and white line disease were detected in 6 and 4 % of the cows respectively. Approximately 92% of the herds had at least one case of sole ulcers or white line disease. The research team also found that cows in mid lactation and late lactation had higher odds of sole ulcers and white line disease than cows at other stages of lactation. Digital dermatitis was 2x more prevalent in herds housed in barns with access to an exercise area. While the odds of sole ulcers and white line disease were higher in cows housed in freestalls as compared to bedded packs. Therefore, preventative measures for digital dermatitis, sole ulcers, and white line disease need to consider the housing environment and stage of lactation of the animal. How does your farm compare to what this study found?



