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Managing Mycotoxins in a La Nina year

Finally, a better season with more rain to come...but is there a risk to your feed and animal health? As we welcome increased rainfall across much of Australia following years of relentless drought, we also see significant increases in the risk of mycotoxin contamination in grains, pasture, hay and silage. The increase in moisture and slightly cooler daytime temperatures, resulting from the higher rainfall, provide the perfect conditions for mycotoxicity.

Mycotoxins are produced by a wide range of fungi. These fungi can produce mycotoxins that are potentially toxic to animals. Fungi can infect more than just **grains** and they may produce mycotoxins in the stems and leaves of **maize, small cereals** and **grasses**. Other fungi within the plants, such as wild endophytes in the shoots of some grass species (for example Lolitrem arising from endophytes in perennial ryegrass - ryegrass staggers), ergots in the seed head (for example affecting perennial ryegrass and paspalum) and *Alternaria* fungi on the forage also contribute to the field mycotoxin load.

Always keep an eye out for any moulds present in any of the fodder and grain you feed your animals. Inspect every batch of grain prior to unloading for blackened grains or grains that may have other discoloration such as pink/purple tinges. This year, many of silages, hay and grains will potentially have some level of risk if weather damaged.

Various aspects of herd health can be impacted, with mycotoxins causing issues with animal performance, reproduction and animal health. These often impact at a “sub-clinical” level and may be seen on farm as:

- Reduced reproductive performance (influenced by both female and bull/ram performance)
- Reduced calving/lambing percentages
- Elevated Somatic Cell Count and increased clinical mastitis in dairy herds

- Facial Eczema; signs of skin damage such as photosensitization
- Unsettled behaviour mostly in the yards and milking shed
- Reduced Milk Yield
- Reduced feed intake and feed refusal
- Increased lameness incidence
- Ill thrift and reduced growth rates in young and finishing stock

What are the solutions?

Despite the best planning around harvest this season, the risk of mycotoxins from the field, ensiling and feeding out can easily pass unnoticed. Inspection of all purchased grain prior at receipt and testing prior to locking in on single source contracts with growers where damage is suspected, is recommended.

Where mycotoxins are suspected, detected or are unlikely to be avoided, using a broad-spectrum mycotoxin binder is a sensible approach. When choosing a mycotoxin binder, look for one that's specific—which means it only binds mycotoxins. A non-specific binder will adsorb other nutrients, such as vitamins and minerals, reducing the nutritional value of your feed.

Below are 3 mycotoxin binders listed, that have good data to support their use. For your specific use, discuss further with your Scibus consultant.

Mycofix®

Mycofix from Biomin use a three-complimentary strategy of: **adsorption** (effective on aflatoxins, ergot alkaloids, and some of the frequent silage mould mycotoxins); **biotransformation** (necessary for some of the most common mycotoxins that are not easily bound); and **bioprotection** to safeguard the vulnerable cells of the gut wall, liver and immune system.

Mycofix specifically targets **non-adsorbable** mycotoxins like zearalenone, fumonisins, and trichothecenes (e.g. deoxynivalenol, T-2 Toxin) and detoxifies them in the animals' gastrointestinal tracts safely and effectively. Mycofix also efficiently binds polar mycotoxins (aflatoxins, ergot alkaloids) and endotoxins.

Cost is around 15-20 cents/cow/day (depending on dosage rate and challenge load).

Mycosorb A+

Mycosorb from Alltech can be used to manage impact of mycotoxins. It controls mycotoxins, reduces mycotoxin absorption within the animal and reduce risk factors associated with the damaging effects of mycotoxins on its health.

Mycosorb binds a broad range of toxins and has proven efficacy in a number of situations.

Cost is around 15-20 cents/cow/day (depending on dosage rate and challenge load).

Celmanax

CELMANAX delivers a full dose of yeast culture plus the extra power of MOS and beta-glucans to help bind mycotoxins, improve health and maximize performance. From mycotoxin binding (beta-glucans), Celmanax improves production and gut health. Celmanax has proven efficacy in effectively binding Aflatoxin, Fumonisin B1 and T-2.

Cost is around 30 cents/cow/day for 10 g dose rate (if heavy mycotoxin risk is likely). A lower dose rate may be an option depending on challenge load.

Elitox

Elitox from Feedworks is a mycotoxin binder for use in ruminant diets. Elitox also combats mycotoxins produced by fungi that are toxic to animals in 3 ways. Absorption of polar mycotoxins (Aflatoxins, Ochratoxins, Fumonisins), Enzymatic detoxification of non-polar mycotoxins (DON, T2, Zearalenone), and supports the natural defence mechanisms of the animal.

Elitox is not as broad spectrum as the 2 binders listed above but has good data to demonstrate an effect on Perennial Ryegrass Toxicosis.

Cost is around 10 cents/cow/day (depending on dosage rate and challenge load).

Testing options

There are rapid test kits available that can give some guidance along with test samples that can be tested for a total mould count which can determine the level of risk a product can have. These are relatively cheap. More extensive tests can be

conducted to determine the level of problem mycotoxins; however, it is a much more expensive and timely exercise.

Forage Labs also offer a mould and fungus testing service that doesn't directly measure and characterize specific mycotoxins but does test for moulds and fungus levels that may correlate with risk of mycotoxin spoilage.

Biomin, as part of their "Global mycotoxin survey", offer to have samples submitted for testing FREE through your consultant or alternatively contacting your local BIOMIN rep. Worldwide data on mycotoxin occurrence including local data can be found through Biomin's "Mycotoxin Risk Management App" available on your smart phone to download".

Disclaimer: This information is privileged between Scibus and our clients. The advice pertains to your farm and the accuracy depends on advice received from the client and reasonable assumptions made by Scibus. Our advice is often interdependent, that is often several aspects of management need to be changed for advice to be truly effective. This advice should not be extended or applied to other circumstances.