



Mycotoxins in Ruminants

Mycotoxins are chemical compounds produced by moulds as a defensive mechanism to stress or competition with other microorganisms. These compounds are toxic to animals and humans and can impact health and production. Mycotoxins can be produced in the field during plant growth (mostly *Fusarium* type moulds) or after harvest during storage (mostly *Aspergillus* or *Penicillium* type moulds).

Negative effects resulting from the ingestion of mycotoxins can be caused by:

- An acute/ high dose of mycotoxins being consumed.
- Moderate doses of mycotoxins consumed over prolonged periods resulting in chronic effects.
- Rate at which mycotoxins are metabolized and excreted.
- Interactions resulting from multiple mycotoxin contamination.
- Interactions between mycotoxins and gut pathogens.

Factors affecting impact of mycotoxins:

- Health and stress level of the animal.
- Age and production stage of the animal.
- Rumen function and passage rate of feed.
- Duration – for how long are mycotoxins consumed?

Type of Mycotoxin	Impacts		
Aflatoxins	<ul style="list-style-type: none"> • Liver function and abscesses • Immune function 	<ul style="list-style-type: none"> • Membrane integrity • Carcinogenic 	<ul style="list-style-type: none"> • Aflatoxins in milk • Mastitis • Poor intake & production
Ochratoxin	<ul style="list-style-type: none"> • Kidney and liver function • Poor energy metabolism 	<ul style="list-style-type: none"> • Impaired immunity • Carcinogenic 	
Deoxynivalenol (DON)	<ul style="list-style-type: none"> • Rumen fermentation & enzyme function • Intestinal inflammation & diarrhea 	<ul style="list-style-type: none"> • Nutrient absorption • Intake and production 	<ul style="list-style-type: none"> • Mastitis • Fertility
Trichothecenes (T-2/HT-2)	<ul style="list-style-type: none"> • Lining of digestive tract • Poor intake 	<ul style="list-style-type: none"> • Diarrhea • Low immunity 	
Zearalenone	<ul style="list-style-type: none"> • Low conception • Abnormal oestrus 	<ul style="list-style-type: none"> • Abortions • Prolapses 	
Fumonisin	<ul style="list-style-type: none"> • Poor digestion and intake • Lethargy 	<ul style="list-style-type: none"> • Nervousness • Paralysis 	<ul style="list-style-type: none"> • Liver and kidney function

Managing mycotoxins

- Preventing mould growth and mycotoxin development.
- Formulating to dilute mycotoxin concentrations.
- Strategic and preventative use of mycotoxin binders.
- Supporting rumen, intestinal health and immunity.

Please consult with your Kemin Account Manager, Kemin Technical Manager, veterinarian or nutritionist for any further information/ assistance.

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