

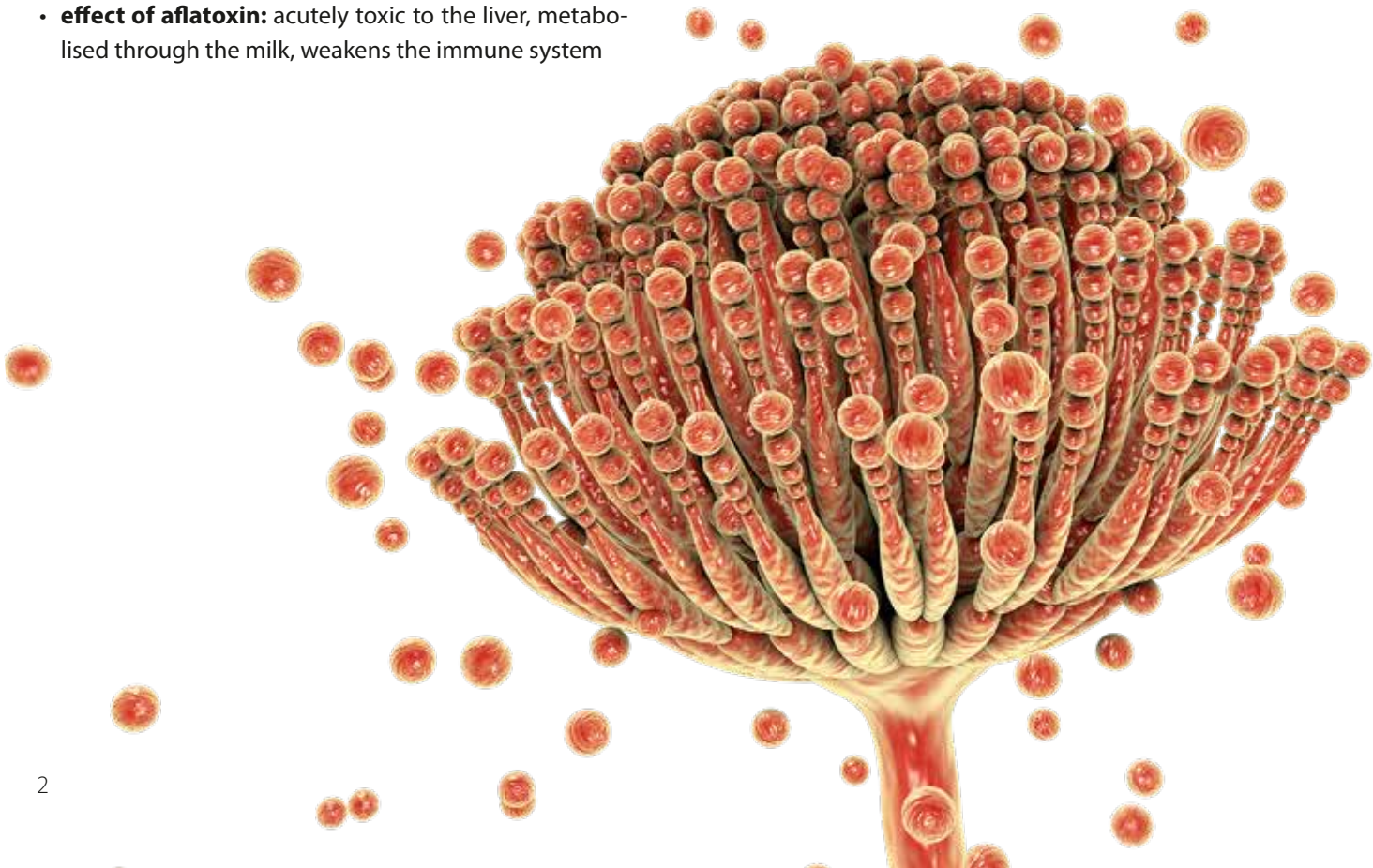
# MiaBond product line



# Mycotoxins

## Facts

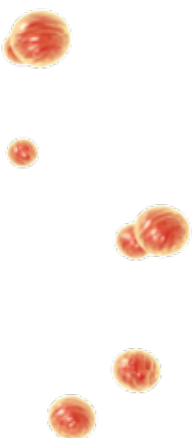
- mycotoxins are secondary and toxic metabolites produced by fungi
- depending on the weather conditions, they can contaminate plants either on the field (field fungi) or occur after harvest due to storage fungi as a result of insufficient preservation and poor storage conditions
- mycotoxins are resistant to extreme temperatures, chemicals and acids
- they are toxic even in small quantities, weaken the immune system and lead to impaired performance
- in addition to the storage toxin aflatoxin, the field mycotoxins deoxynivalenol (DON), zearalenone (ZEN) and fumonisin have a major effect on animal nutrition around the world
- **effect of aflatoxin:** acutely toxic to the liver, metabolised through the milk, weakens the immune system
- **effect of DON:** it mainly affects intestinal health and can lead to reduced effectiveness of vaccine titre
- **effect of ZEN:** has oestrogenic effect and can, in some cases, cause changes to menstrual cycle, abortions and changes to the uterus
- **effect of fumonisin:** fumonisin is frequently found in corn. It damages the kidneys and the liver as well as affects the function of the immune system
- typical disease patterns are rarely seen, as chronic performance and health disorders dominate
- **one thing is certain:** mycotoxins mean economic losses in livestock farming



# Endotoxins

## Facts

- endotoxins, also called lipopolysaccharides, can be found wherever there is bacterial activity (feed, water, air, etc.)
- they are part of the outer membrane of gram-negative bacteria, such as *E. coli* and *Salmonella*
- lipopolysaccharides are released when bacteria die, e. g. by using antibiotics
- endotoxins can enter into the bloodstream to a certain extent, where proteins can bind them in the blood (complex formation)
- this complex binds to a part of the body's own immune system, prompts an immune response and sets off an inflammation cascade
- even small quantities of endotoxins can lead to considerable immune reactions, ranging from the loss of performance to endotoxic shock



## MiaBond

- EU-registered and approved bentonite (1m558)
- highly efficient in binding aflatoxin (feed safety)
- Reduced AFM1 secretion in milk (food safety)

**Packaging:**  
20 kg bag



## MiaBond BP

- EU-registered and approved bentonite (1m558)
- contains a mixture of 100 % natural phenols

**Packaging:**  
20 kg bag



## MiaBond 360

- product approved for a wide spectrum of mycotoxins
- proven biotransformation of deoxynivalenol, T-2 and fumonisin into non-toxic metabolites

**Packaging:**  
20 kg bag



	aflatoxin	ZEN	fumonisin	DON	T-2	ochratoxin A	ergotalkaloide	endotoxine	mode of action
MiaBond	✓	✓					✓	✓	⌋
MiaBond BP	✓	✓					✓	✓	⌋ ⌋
MiaBond 360	✓	✓	✓	✓	✓	✓	✓	✓	⌋ ⌋ ⌋

# The art of mixture.



## Why is it so important to take correct samples before the mycotoxin analysis?

- An effective mycotoxin risk management should begin by checking the quality of the feed.
- The two methods routinely used in practice and performed by laboratories currently are: the antibody detection method ELISA (Enzyme-Linked Immunosorbent Assay) and the physiochemical analysis method, HPLC (High-Performance Liquid Chromatography).
- The most important step is taking a correct sample of the feed because around 80 % of errors in the mycotoxin analysis are due to the sample and only 2 % due to the analysis.
- Mycotoxins are unevenly distributed. They can be found in so-called hot spots. This means that various parts of the batch contain various concentrations of mycotoxins.

