

# MYCOSORB<sup>®</sup>

The Natural Solution to Mycotoxins

## Moulds, Feed & Mycotoxin Synergy



Mycotoxins are toxic metabolites produced by moulds in stored grains, forages, silage and in some pasture grasses. Most exert toxic effects by organ damage, causing poor feed conversion, reduced milk production and fertility problems. Production stress amplifies toxicity, making high producing dairy cows and rapidly growing beef cattle more susceptible to mycotoxins. With increasing production demands and reliance on stored feeds, mycotoxin control is critical.

### Major Mycotoxins Affecting Dairy Cows

#### *Aspergillus sp.* - Aflatoxin

- Reduced growth, feed efficiency and liver damage. Metabolites (M<sub>1</sub>) appear in milk and meat.

#### *Penicillium sp.* - Ochratoxin

- Diarrhoea
- Decreased milk yield.

#### *Fusarium sp.* - Zearalenone

- Infertility, oestrogenic effects reported with heifers.
- Decreased feed intake and milk production.

#### T-2 Toxin

- Gastroenteritis, intestinal haemorrhage and death.
- Significantly reduces immune response in calves.

### The Mycotoxin Dilemma

Mycotoxins are difficult to measure

- Many different mycotoxins can be present simultaneously, making analysis difficult and expensive.
- Visible mould or spore counts are not definitive.
- Sampling of bulk feeds is difficult.

Mycotoxicosis is hard to diagnose

- Symptoms are often non-specific such as lost performance/FCR, higher disease incidence.

Mycotoxin synergism

- Mould species coexist; and most can produce more than one mycotoxin. Mycotoxins are synergistic, meaning combinations have a greater impact than single toxins. As a result, seemingly low levels of individual mycotoxins become important.

Economic impact of feed mycotoxins

- Poor performance, lost efficiency.
- Increased downgrades.
- Higher disease incidence.

## Mycotoxins in Pasture and Forages

Mycotoxin-producing fungi associated with pasture grasses expose grazing ruminants to occasional or cumulative toxin effects. Endophyte mycotoxins can cause ryegrass staggers and heat stress. Other pasture mycotoxins can affect fertility and feed intake; moulds in hay and silage can also cause problems.

#### Endophyte toxins

- Lolitrem B and ergot alkaloids in perennial ryegrass
- Ergot alkaloids in fescue

#### *Fusarium* toxins

- Zearalenone
- Tricothecenes

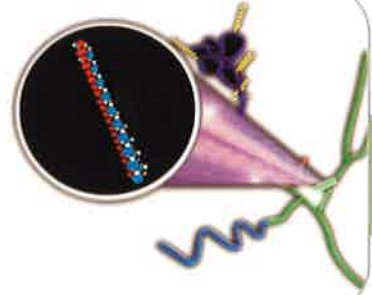
# The Natural Solution

In over 30 *in-vivo* trials conducted throughout the world it has been demonstrated that the feeding of yeast cell wall derived modified glucomannan (Mycosorb) can be used as part of a strategy to reduce the effects of mycotoxins in ruminants.

The inner portion of the yeast cell wall of a specific strain of yeast was identified for its ability to adsorb mycotoxins.



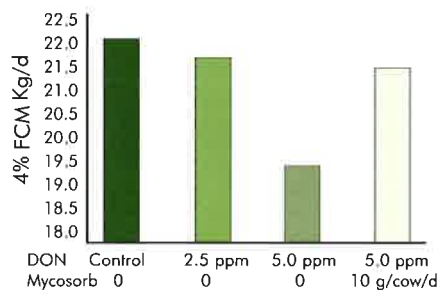
The active component in the cell wall, glucan, is modified to increase its already naturally high affinity and capacity for mycotoxins.



## Performance Responses

### REDUCING DON TOXICITY

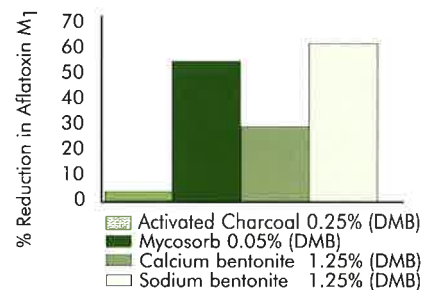
Mycosorb reduced the toxicity of deoxynivalenol (DON) in dairy cattle. Fat corrected milk production increased accordingly.



Acosta et al., 2003

### REDUCING AFLATOXIN M<sub>1</sub> RESIDUES

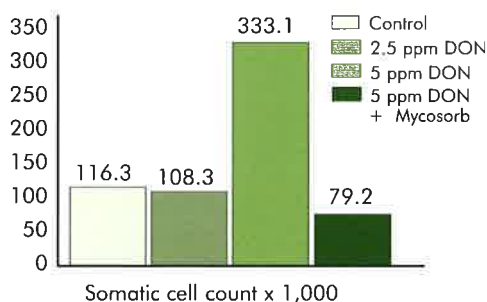
Mycosorb used at 0.05% of the diet reduced Aflatoxin residues to the same extent as a bentonite used at 1.25% of the diet (25 times higher inclusion rate).



Whitlow et al., 1999

### EFFECTS ON SCC

In this trial the use of Mycosorb showed a significant reduction in the somatic cell count during early lactation.



Acosta et al., 2003

Strategic use of Mycosorb

**Heavy mycotoxin intake situations**  
10g/head/day

**Mild cases or for suspect feed situations**  
5 g/head/day

**Step-down situations**  
(first 2-3 weeks) 10-15g/head/day  
(after 2-3 weeks) 5-10g/head/day

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