

How can any possible toxins in feed be managed?

# Airborne anarchists



With 75% of feed crops testing positive for naturally occurring moulds, mycotoxin contamination is an issue for every dairy producer in the UK. We spoke to two industry specialists and a producer to find out how they're tackling the problem.

text **Allison Matthews**

**M**ycotoxins have a direct impact on cow performance. By attacking the cow's immune system, the ability to fight problems, such as mastitis, becomes almost impossible. When you add digestive and reproductive issues to the situation, it is no surprise that producers are becoming more aware of what this airborne trouble maker is capable of.

And, as AB Vistas' technical director Derek McIlmoyle points out, there have been changes in herd management that have compounded the issue. "Higher yields tend to put cows under more stress, which can reduce the animal's ability to deal with mycotoxins," he says.

The rumen can usually deal with these efficiently but if the pH drops below 5.8, with the onset of sub-acute-ruminal acidosis (SARA), there is a negative impact on how well mycotoxins are managed.

### Core health

He adds that where cow health is affected by SARA, the presence of toxins can be extremely detrimental. Reduced body condition, poor milk yields, higher mastitis and elevated cell counts are all symptoms of mycotoxin ingestion. Other key indicators include rough coats, variable manure consistency, the presence of mucus tags (pieces of gut wall) in manure, and foot lesions that won't heal. "SARA reduces the populations of microbes in the rumen that are able to break down the toxins, but it also damages the rumen wall, making the passage of mycotoxins into the blood much easier. This serves to compounding the problem even further."

So good rumen function is, therefore, the

*Derek McIlmoyle: "Stress can reduce cows' ability to deal with mycotoxins"*



first line of defence. "It's important to avoid overloading the rumen with too much rapidly fermentable energy and to include both digestible and structural fibre in the diet," says Dr McIlmoyle.

Certain rumen microbes ingest, transform or degrade mycotoxins and render them less harmful. "It's important to reduce the lactic acid build up with a balanced diet and a rumen enhancement product," says Thompsons' nutritionist Richard Moore. "With variable weather conditions, the turn-out of cows during the summer cannot be taken for granted and rumen health must be an all-year round priority.

"When pH falls below 5.8, the active fungi and protozoa that are responsible for fibre digestion and the breakdown of mycotoxins, are greatly reduced."

He adds that a well-balanced diet with starch, sugars and neutral detergent fibre (NDF) is recognised as crucial in minimising SARA with physically effective fibre (PENDF) becoming a more popular means of control. "Chopped hay or straw, to a length of 5cm, provides a source of PENDF in the diet that creates a mat of fibre in the rumen and enhances optimal conditions."

### Grass contamination

The amount and type of problematic mycotoxins can vary according to which moulds are present and whether conditions are favourable for them. Temperature, humidity, insect damage and the weather all have a part to play, with the biggest load of mycotoxins coming from the field. "Unwelcome moulds can appear in the clamp when sward cutting is delayed due to poor weather conditions," explains Mr Moore. "Contaminated material at the base of the shoot is the culprit when grass is difficult to cut cleanly. Grass should ideally be cut when it's dry and then wilted rapidly. The faster the pH falls in the clamp the more efficient the fermentation process. This means that there is a lower risk of moulds developing."

Even without visible clues, such as mould on forage, there is still a good chance



*Richard Moore: "It's important to reduce lactic acid build up by feeding a balanced ration"*

toxins are an issue and action should be taken to guard against their effects. "The past winter's feeding season was particularly bad for contamination and it was common to see yields improve by up to three litres per cow per day when a high quality mycotoxin de-activator was added to the ration," explains Dr McIlmoyle, adding that the cost is relatively low, when you consider that a 0.5 litre per cow per day improvement would give an easy 3:1 return on investment.

### New challenges

The nature of this toxic compound means that the cow has no opportunity to build up any immunity to it, so every year poses new challenges. Mycotoxins rarely travel alone and, in practice, it is the presence of the combination of different strains that exacerbates the problem.

Producers George and Irene McKnight, based at Loughbrickland in County Down, started feeding a toxin de-activator to their 143-cow pedigree herd when their high dry matter silage showed signs of mould and heating. "Our cows are currently averaging 28.5 litres and, when milk price was favourable, we wanted to ensure we were achieving this. There were signs of oedema and the consistency of manure was also variable, so the decision was made to feed Ultrasorb – a mycotoxin binder," explains Mr McKnight. "The herd is now milking exceptionally well, with an improvement in both components and yield, which have made the economic decision worthwhile."

So tackling the moulds and their toxic results can reduce the severity of their effect. Where cow health is already an issue, there is an opportunity for the toxins to add to the problem.

"Good rumen function should always be a priority and many producers now include a mycotoxin binding product as low-cost insurance against potential lost production. Compared to the possible loss in income, it's a small price to pay to protect milk output," concludes Dr McIlmoyle. |