

BEWARE MYCOTOXIN THREAT FROM SILAGE

Dairy farmers in Scotland need to plan for an on-going struggle with feed-borne mycotoxins and the associated threat to animal health and performance, according to a leading veterinary scientist.

According to Dr Johanna Fink-Gremmels – Professor of Veterinary Pharmacology and Toxicology at Utrecht University – vets and livestock farmers alike need to take the threat of mycotoxins seriously in Scotland.

“The mycotoxin threat to cattle is increasing in Northern Europe, yet farmers and vets often under-estimate the impact on animal health and performance,” she says.

Dr Fink-Gremmels explains that natural toxins produced by diverse fungal species are proliferating worldwide, partly as a result of global climate change, but also because of changing agronomic practices in developed countries.

“Total mixed rations often now contain more than one fungal species, contributing to a complex mycotoxin picture and unresolved health issues in a herd as a result. Cow signals such as reduced feed intake, reproductive disorders, laminitis, mastitis, impaired liver function, a poor response to vaccination programmes and even increased susceptibility to bacterial and viral diseases can all be attributed to ingesting mycotoxin contaminated feed.”

According to Dr Fink-Gremmels, the biggest challenge for dairy farms is now multiple mycotoxin contamination of grass and maize silage.

“Cattle health problems with feeding obviously mouldy silage are relatively well understood. But new harder to detect fusarium toxins – such as, for example, Enniatins and Beauvericin contaminating cereal grains – are also now being found in pasture grass in Northern Europe. These will also adversely affect the efficiency and function of the rumen,” she says.

“The rumen determines the health and productivity of the cow. When rumen bacteria are suffering the liver does not function correctly initiating a cascade of adverse events; and often a generalised inflammatory response is triggered, which leads to a loss of production.”

One Scottish milk producer to experience firsthand the impact mycotoxin contamination of grass silage can have on herd production performance is Alex Douglas from 600 acre Easterhouse Farm, Bonkle in North Lanarkshire. He saw a sudden drop in yield last winter after feeding some silage that was ensiled wet and had subsequently heated up in the clamp.

Mr Douglas robot milks 175 high yielding Holstein Friesians that calve all year round. Milking cows are housed 365 days a year and fed a TMR of grass silage, draff and a wagon blend, plus compound feed to yield through the robots, which were installed in 2011.

“We lost two litres of milk per cow per day pretty much overnight. Cows that were happily yielding 38-42 litres a day dropped suddenly to 36 litres per day. I just think we hit a bad patch of silage. I’d been worried about it because we had had to make it in the wet during the early summer of 2015; it had been really hard to find a clear, dry week to get on the grass.” Mr Douglas says.

Excessive moisture in a clamp can lead to mould growth, particularly if the winter months are mild. This also means associated multiple mycotoxin production, which can depress the nutritional value of the silage.

Global mycotoxin management specialist Alltech is currently helping dairy farmers in the UK take more of a hands on management approach to mitigating the threat of mycotoxins.

Results from Alltech 37+™ harvest surveys in the UK and across Europe over the last four years – of both forages and other common winter ration ingredients – confirm that cows are being fed diets containing multiple mycotoxins.

“We can test for more than 37 different mycotoxins in feed ingredients,” points out Bob Kendal from Alltech. “The most prevalent are Type A and B trichothecenes, fusaric acid, fumonisins and those produced by *Penicillium*, such as mycophenolic acid, but it is the simultaneous presence of these different mycotoxins that increases the potential toxicity to the cow. Cows ingest their feed as a combination of multiple ingredients, so it is important to assess the risks associated with the whole diet.”

Working with Alltech, Harbro suggested Mr Douglas include Mycosorb A+ in the TMR to mitigate the threat from the mouldy silage. “This mycotoxin binder is an exclusive formulation of glucans extracted from the cell wall of the yeast *Saccharomyces cerevisiae* 1026. Cell wall products have been shown to have useful mycotoxin-adsorbing properties. Yeast cell wall binders have a detoxifying effect against a

variety of mycotoxins both in vivo and in vitro, without adverse effects on nutrient availability,” Bob Kendal says

Fortunately, this did the trick and within a few days the cows were back averaging 38-42 litres a day. “It was a classic response and convinced me that it was mycotoxin contamination that had been causing the problem. Fortunately, we managed to make much drier silage this year, but that may not necessarily mean no mould growth so we will remain vigilant next winter when we come to feed out,” Mr Douglas says.

Scottish dairy farmers interested in their own mycotoxin risk assessment can contact Harbro on 01888 545200 Alltech on 01780 764512.

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