

# Don't underestimate potential mycotoxin risk

Several factors are combining to raise the risk of mycotoxins and a negative impact on milk yields, fertility and cow health. We spoke to a leading nutritionist to find out more.

TEXT ROLY MARKS

*Mycotoxin risk: drier silages and poorer quality straw mean that some producers should remain vigilant*

**D**rier grass silages, greater reliance on third and fourth cuts and reduced availability of good quality straw are all increasing the threat posed by mycotoxins this winter.

And, according to AB Vista's Derek McIlmoyle, the scale of the problem continues to be overlooked by many producers despite the substantial negative impact on cow performance, health and fertility. "Forage and straw shortages mean that most dairy

units are having to feed the milking herd more late-cut grass silages than usual and, in some cases, straw that would more typically be used for bedding," he says. "These lower quality forages are more prone to mould growth and the build-up of mycotoxins." Drier silages are also at risk of aerobic moulds. Grass silage samples (2018) analysed so far by Scotland's Rural College show that average dry matters could be as much as 4% higher than 2017.



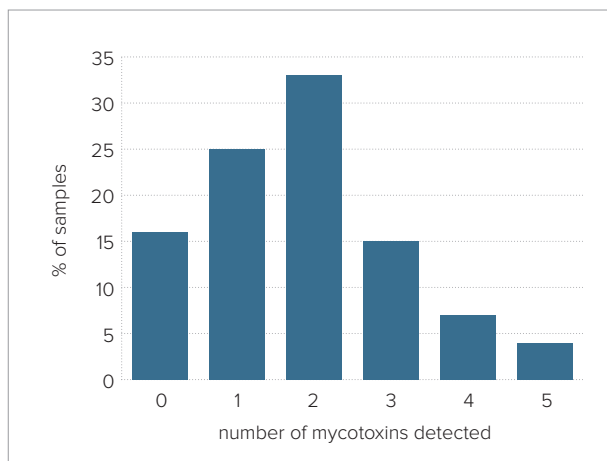


Figure 1: Number of mycotoxins detected in 2017/2018 European maize samples (source: Micron Bio-Systems)

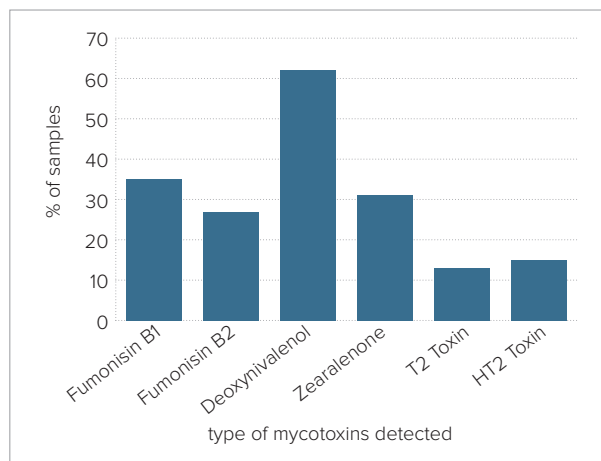


Figure 2: Level of individual mycotoxins detected in 2017/2018 European maize samples (source: Micron Bio-Systems)

Mycotoxin testing of maize samples (grain and silage) from across Europe carried out by Micron Bio-Systems in 2017 confirm the scale of the ongoing challenge posed by in-feed mycotoxins. Of the samples tested, 84% contained one or more mycotoxins, 58% contained at least two and 26% were contaminated with three or more mycotoxins (see Figures 1 and 2).

### Most prevalent

The most prevalent mycotoxin was deoxynivalenol (DON), which was present in 62% of the maize samples (see Figure 2) and is highly damaging to ruminants. “DON is also unaffected by simple clay-based mycotoxin binders, and has to be physically transformed using specific active ingredients before it can be neutralised,” explains Dr McIlmoyle.

There is currently little data available to show the full extent to which UK feedstuffs are contaminated with mycotoxins, but he says that it’s an issue that affects more than just forages. Any feed that is grown outdoors, exposed to humidity or stored for any length of time is at risk, with mould growth likely to be accelerated by insect or mechanical damage, contamination with soil or bird faeces, or poor storage conditions.

Previous testing carried out in 2014, for example, found that 92% of all TMRs tested contained mycotoxins, along with 82% of maize silages, 80% of barley samples and 75% of wheat samples. Many of the most damaging mycotoxins – DON, zearalenone (ZON) and T2 toxin – are produced by the Fusarium moulds that commonly affect growing feed crops. Others, such as aflatoxin B1 (AFB1), are generated by the Aspergillus moulds, which are typically seen in stored feeds.

### ‘Masked’ mycotoxins

“Some of the mycotoxins produced when crops are growing actually get combined with sugars within the plant,” explains Dr McIlmoyle. “Although these ‘masked’ mycotoxins aren’t detected by standard mycotoxin testing, there’s evidence to suggest they can be released during digestion and add to the overall mycotoxin load on the animal.”

Common symptoms of mycotoxin ingestion are a reduction in milk yields, lower butterfat levels, worsening body condition and infertility. Other

indicators include rough coats, listless activity, variable manure consistency and the presence of mucus tags – pieces of gut wall – in the manure. “Research has shown that dairy heifer conception rates fell from 87% to 62% where ZON was present in the ration,” he says. “Even chronic lameness, foot lesions that won’t heal, or an increase in somatic cell counts, mastitis and cystic ovaries, can indicate a mycotoxin problem. The risk is also much greater when cows are suffering from sub-acute ruminal acidosis, which reduces the ability of rumen microbes to deactivate certain mycotoxins. And SARA also causes damage to the rumen wall and this eases the passage of those mycotoxins into the blood.”

### Managing risk

So it’s important to minimise the incidence of SARA when facing a mycotoxin threat. Avoid overloading the rumen with excess rapidly fermentable starch, consider adding a slow-release rumen conditioner to buffer rumen pH and take steps to reduce stress, such as caused overcrowding, competition for feed and aggression. Paying close attention to feed storage, silage clamp management and feed hygiene is also critical to limit additional mould growth. Visibly spoiled or mouldy material should always be discarded and feed-out areas should also be cleaned daily to remove refusals.

“If the ration is heating in front of the cows – a sure sign aerobic fungal growth is taking place – consider feeding less, but more often, to reduce the time available for spoilage,” advises Dr McIlmoyle. “Many top herds are also now routinely including a high-quality mycotoxin de-activator to protect cow health and production.”

A clear performance response within two to three weeks of adding a de-activator to the ration is indicative that mycotoxins are present at significant levels. An additional yield of between two and three litres per cow per day is not unusual.

“Just make sure it’s a broad spectrum, multi-component de-activator that’s been developed for use in ruminants, and can act to ‘open up’ important mycotoxins such as DON for de-activation,” says Dr McIlmoyle.

“And avoid the basic clay-based binders. They’re not only ineffective against the likes of DON, but they can also bind with minerals and vitamins in the ration, making them less available.” |