American crops and pigs suffer from waterlogged fields!

The warning bells are beginning to sound quite loudly about the current mould problems in the North American maize (corn) harvest. So, what is the situation and what can we do to minimise mould and mycotoxin related risks?

In essence, the problem has arisen because in parts of the Mid West of the USA wet conditions have impeded the ripening of the maize crop and delayed harvesting of the maize with the result that it has stood in the fields under conditions of moisture and temperature that have favoured ear mould growth.

In many fields, moulds have actually been seen growing on the maize ears – some of these might not look very nice but are of little consequence, whereas other moulds such as fusarium have the potential to produce mycotoxins such as fumonisin, zearalenone and vomitoxin. These mycotoxins can be harmful to animals and, since some of them can accumulate in meat or milk, are also potentially harmful to man.

Vague effects

The effects of mycotoxins in animals are often vague, such as loose faeces, slight depressions in dry matter intake and productivity, adverse effects on reproduction and negative effects on the animal's immune system. When the immune system is affected animals can become more prone to other diseases and, for example, as is well known in poultry, not respond to vaccinations as well as they should.

Recently, the American Feed Industry Association has expressed some concerns about mycotoxins and the 2009 maize crop and, in particular, high levels of fumonisins, aflatoxins and vomitoxin (DON or deoxynivalenol). Table 1 details the maximum tolerable levels of mycotoxins in pig feeds.

In addition, one should be aware that distillers grains can be contaminated and some American authorities are advising producers to screen distillers grains for mycotoxins prior to purchase.

However, mycotoxins are not uniformly distributed through an ingredient or a ration and so it is prudent to use ingredients and feeds that have given test results significantly below these levels to ensure that you do not inadvertently exceed these recommended levels for fumonisins, vomitoxin and aflatoxin in the feed given to your pigs.

International Pig Topics understands that various surveys of maize for mycotoxins are occurring in North America and these should clarify the magnitude and the distribution of the mycotoxin threats in this year's maize crop.

In one small survey 55% of corn samples tested positive for vomitoxin, 45% for zearalenone and 10% for aflatoxin. No T2-toxin was detected.

In another survey ,when moulds were specifically looked for, 20% of samples of maize silage yielded some level of fusarium and 11% yielded some level of aspergillus mould.

So, if we are aware of these facts, surely we should do what we can to either ensure that our animals do not consume mycotoxins or do what we can to minimise their consumption and impact?

In reality this year animals consuming US grain products and maize silage run the risk of also consuming mycotoxins. Control strategies will focus on two disciplines.

First, avoid contaminated products but obviously this may not be a practical proposition for the farmer who has already produced a contaminated product or silage although dilution strategies might be worthy of consideration. Secondly, the use of mycotoxin binders needs to be given serious consideration and here your nutritionists and veterinarians will be your best advisers.

Drying corn to <15% moisture stops further mycotoxin development, but this has an associated cost. In reality, there are merits in going for a moisture content closer to 13% to further reduce the risk of mould development in storage.

At greatest risk

Animals under stress such as high performing sows and gilts are likely to be the first to show symptoms of a mycotoxin problem and sows eating elevated amounts of dry matter will be at greater risk as they are likely to be eating more of the contaminated ingredient(s). Distillers grains from ethanol production can concentrate the levels of mycotoxins in the feed.

However, we should not be blinkered and think that this is just a US maize problem. Mycotoxins are not a problem of geography but one of the wrong climatic conditions occurring at the wrong time. So, if you have had a wet harvest of any cereal or feed ingredient it is always prudent to bring mycotoxins and the possibility of them contaminating your pigs' feed into your thinking and to give them and their possible consequences serious consideration.

Once mycotoxins are in the animal we have passed the point of effective control. Effective control depends on being aware of the problem early in the feed chain – either while the crop is in the field or in storage!

If you do nothing until you see the problem in your herd it might be the classic case of closing the door after the horse has bolted! ■

Table 1. The maximum tolerable levels of mycotoxins that can be found in pig feeds (www.knowmycotoxins.com).

Mycotoxin	Risk level
Deoxynivalenol (vomitoxin)	< 1ppm in finished feed
Ochratoxin	<<200ppb
T-2 toxin	<1ppm
Zearalenone	<1ppm for young growing pigs <2ppm for breeding pigs <3ppm for finishing pigs and young and old boars
Aflatoxins	<100ppb for breeding pigs <200ppb for finishers >120lb body weight