Recognising the warning signs of mycotoxins in pigs

By recognising mycotoxin issues early it is possible to reduce the impact of mycotoxins on pigs. An outline of ten common warning signs will help pig producers to detect a mycotoxin problem as soon as possible.

BY DR RADKA BORUTOVA, DVM, PHD, EUROPEAN TECHNICAL SUPPORT MANAGER, ALLTECH MYCOTOXIN MANAGEMENT

Mycotoxins are not unique to specific moulds, i.e., various species can produce the same mycotoxins. There are also single species that produce numerous mycotoxin types. While the significant presence of just one mycotoxin can impact the well-being of pigs, smaller levels of multiple toxins often lead to more serious issues. Most regulatory guidelines advise on the safe levels of individual mycotoxins. However, these do not consider the cumulative effects of having multiple mycotoxins present in feed. This multi–mycotoxin challenge was repeatedly demonstrated during mycotoxin testing. In Alltech's 2020 European Summer Harvest Survey, the average number of mycotoxins in corn samples was 6.4.

PHOTO: BERT JANSEN

Mould infections may be visible in feed, but because mycotoxins are not visible to the naked eye, specialised detection techniques will be required.

What impact do mycotoxins have on pigs?

Pigs are particularly susceptible to the risk posed by mycotoxins. Ingestion of contaminated feed may impair a pig's cellular and tissue integrity, leading to an unhealthy imbalance of physiological systems. These cause organ malfunction that results in lower pig performance, decreased immunity and reduced health status. Zearalenone is an oestrogenic toxin (i.e., it mimics the action of the hormone) and therefore adversely affects reproduction. Most mycotoxins can cause acute, but more often chronic, toxicosis in pigs. To the pig producer, these subclinical losses often pose greater economic shortfalls than those resulting from acute effects but tend to be more difficult to diagnose.

How to manage mycotoxins in pig production?

Due to the invisible nature of these toxic compounds, even without signs of mould, there can still be a threat of contamination, making detection more complex. Applying a continuous and well-prepared preventative strategy will help to reduce adverse effects. Equally, by spotting issues early, you can take steps to mitigate the impact of mycotoxins on your pigs' health and performance. Here are ten common warning signs that all pig producers should watch out for when it comes to detecting a mycotoxin problem:

1 Visible moulds in pig feedstuffs

Moulds can grow either before or after harvest, during storage, and contaminate almost all pig feed ingredients. Producers must monitor potential contamination in feed production, transportation and distribution. Sometimes, the mould infection is visible, making it possible to identify the potential risk and take preventative action. However, mycotoxins are not visible to the naked eye and therefore require specialised detection techniques.

2 Measurement and data recording

We often miss the signs of mycotoxins in animals until they are causing performance losses. Detailed and accurate measurement-based data recording provides a good basis for surveying the situation correctly and developing an effective prevention strategy. A slight shift in feed conversion efficiency can easily cause serious economic losses and is just one example of the different performance parameters that can draw your attention to the potential presence of mycotoxins.

3 Reduced feed intake in pigs

Sometimes, the simple presence of moulds can cause unfavourable changes in feed taste and/or smell, but in many other cases, their toxic by-products directly affect the appetite of pigs. In extreme cases, total feed refusal or intensive feed rooting is visible. More often, a slight drop in daily feed intake leads to notable performance losses, especially in average daily weight gain.

PHOTO: ANNE VAN DER WOUDE

By spotting issues early, it is possible to take steps to mitigate the impact of mycotoxins on pigs' health and performance.

4 Inconsistent faeces

Increased visible signs of enteral disorders in a bigger swine group and even irregular faeces consistency — including changing from slightly softer manure to a highly watery texture containing blood or undigested feed — may indicate a multi-mycotoxin challenge. The severity of some pathogens (e.g., *E. coli, Salmonella, Lawsonia* and *Serpulina* species) could also be increased.

5 Reproduction challenges

Multi-toxin-contaminated feed can lead to unexpected reductions in reproduction performance. Breeding gilts, boars and sows can all be impacted, while piglets can also show signs of intrauterine mycotoxin exposure, such as enlarged vulvas or necrotic teats. Boars may exhibit reduced libido and decreased sperm quantity. Irregular heats in sows or longer weaning to oestrus interval should be seen as a potential issue. Equally, increased stillbirths, lower than normal litter size or reduced piglet vitality can be among mycotoxin-contamination symptoms. Reduced milk let-down from the sow may also lead to inadequate piglet growth performance.

6 General pig health status

This is one of the most difficult impacts of mycotoxin ingestion to determine. However, increased culling and higher mortality can point us toward potential mycotoxin issues in swine herds. Reduced success with vaccination programs, increasing infection outbreaks due to pathogens or simply higher medicine costs can also indicate toxicosis-related issues.

7 Increased incidence of prolapses

Increased rectal and/or urogenital prolapses can quickly point to a mycotoxin issue. While there could be different reasons for these symptoms, it is one of the clinical signs most frequently connected to pigs ingesting mycotoxins. Changes to organ ligaments are a direct effect, while frequent diarrhoea from abdominal pressure is one of the most likely indirect symptoms.

8 Altered pig behaviour — vomiting

Lethargy or even overexcited visible stress in bigger animal groups can be connected to mycotoxin contamination. Munching, foaming of saliva around the mouth and, more often, increased vomiting can draw attention to a potential mycotoxin situation.

9 Increased skin sensitivity

Increased skin sensitivity, leading to skin lesions at the tops of the ears or on tails, can have several contributing factors. Nevertheless, mycotoxin contamination should not be ruled out as a potential cause.

10 Reduction in pig performance parameters

Research continually demonstrates the negative impacts of mycotoxins on animal performance. However, impacts may not always be obvious in swine herds. Loss of homogeneity in same-aged groups, slight changes in daily feed intake and growth parameters or reduced feed efficiency can all indicate a subtle mycotoxin issue and lead to significant economic losses. More severe sudden changes, such as increased mortality, could indicate acute contamination and should be investigated immediately.