

# Biosecurity farm walk

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Along with Boehringer (manufacturers of Metacam and Bovela), we are running another interactive farm walk on Monday 20th February focusing on farm biosecurity.

The emphasis will be on BVD and how to minimise the chances of letting it on your farm, but will be relevant to many other diseases such as Johne's, IBR and TB. The day will run from 10.30am until 2pm with lunch provided. Paul and Steven Heath of Hill Parks Farm, Belton, have kindly agreed to host the day at their impressive new 5-robot unit. Places will be limited so book early to avoid disappointment.



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Please note that telephone calls are recorded for quality and monitoring purposes.

# farm news



## Schmallenberg virus - an update

The APHA's horizon scanning surveillance work has identified the recrudescence of Schmallenberg virus (SBV) in the Netherlands, Belgium and France. This has been followed in October 2016 by the detection of SBV from a deformed calf in Cornwall, and by evidence of exposure and seroconversion as part of routine screening of cattle in the Midlands.

There were no diagnosed cases of SBV, or evidence of virus circulation, in the UK in 2015, and it is likely that there is an increasing proportion of sheep and cattle that are naive to SBV, as natural immunity wanes and as flocks and herds are replaced by younger, naive animals. This means that recrudescence of disease is not unexpected, since SBV is still present and circulating in the UK.

SBV is transmitted by biting midges. Clinical signs in cattle include fever, diarrhoea and milk drop, with recovery after about a week for individuals and after about three weeks for infected herds. Sheep do not tend to show these clinical signs. Foetal deformities can occur if pregnant cattle are infected during the third or fourth months of pregnancy, and sheep in the second month. There are two commercial SBV vaccines with marketing authorisations, but neither is currently in production.

The APHA is recommending that deformed foetuses are submitted for testing for SBV. Naive spring-calving suckler cows, dairy cows served through the late summer and ewes tupped in August or September are most at risk of foetal abnormalities. There is also a potential risk associated with the purchase of dairy heifer replacements from northern Europe.

**If you suspect your cattle are showing clinical signs, if you have any deformed lambs or calves to submit for testing, or if you would like to discuss SBV further, please don't hesitate to contact us.**

The information in this article was taken from the APHA Disease Surveillance Report, November 2016.



Facial abnormality in a lamb with Schmallenberg virus. Other deformities include bent limbs and fixed joints, brain damage and damage to the spinal cord.

## News in brief...

### Welcome back Carolyn!

Carolyn is delighted to be back at work after her maternity leave, and is looking forward to shaking off the last remnants of 'baby brain' and getting the bit back between her teeth again!

### Correction

Last month's article about TB testing showed Sandy as a TB tester. In fact, Sandy wrote the article and it is Yoli and Rodrigo who are our full-time TB testers. All the farm vets do their fair share of testing, though, and Sandy is looking forward to getting his boots back on when the doctor gives him the all-clear after his recent hip and knee replacements!



## LAMBING COURSES 2017

at the Scarsdale Vets Farm & Equine Practice  
on Markeaton Lane between 2pm and 5pm

**Upcoming Dates:**  
 Tuesday 7<sup>th</sup> Feb 2017  
 Monday 13<sup>th</sup> Feb 2017  
 Tuesday 28<sup>th</sup> Feb 2017

Course costs £55.00+VAT per person, call 01332 294929 to book your place.

# Mould matters

**Carolyn Baguley MA VetMB CertAVP (Cattle) MRCVS**



Moulds produce metabolites known as mycotoxins, often more so under stressful conditions (e.g. prolonged high humidity or drought). Mycotoxins are the most common contaminants in farm animal feeds. They impact on animal health and productivity, but are also of concern with regard to human health.

Mycotoxins are very stable in the environment, and are highly resistant to processing. Feed (whether silage,

straw, hay, straights or pellets) may be contaminated while still growing, after harvesting, or during storage in its final form or processing.

The many different mycotoxins cause a very diverse range of symptoms. Since mycotoxins will be distributed unevenly within feed, some animals may suffer high levels of exposure while others ingest very little. There's considerable uncertainty over what constitutes a safe level of intake for the different mycotoxins, especially following long-term exposure,

and for ruminants this is to some extent determined by the stability of the mycotoxin in the rumen.

Signs of mycotoxicosis are often vague, and include reduced productivity, reduced reproductive performance and impaired immune function. Signs can occur acutely, following a sudden high-level exposure, or more insidiously, following long-term exposure. Many mycotoxins are potent antibiotics and can kill off the normal bacterial 'flora' of the rumen, disrupting rumen function. Conversely, long-term use of antibiotics in an animal can allow some moulds to flourish in the rumen, causing mycotoxicosis from rumen mould overgrowth.

Specific signs from particular mycotoxins are far less common than the vague signs, but often more dramatic. Three examples are given in the table.

Mycotoxin	Source	Effects	Importance
<b>Aflatoxin</b>	<b>Aspergillus mould species</b>	High levels can cause acute liver damage, while lower levels ingested over the long-term can cause cancer, chronic liver disease and immunosuppression.	Aflatoxins are an emerging concern in European dairy production, due to an increase in the European corn borer - the damage the insect causes favours contamination of the corn with Aspergillus. Aflatoxins can also be found in maize, soya etc.  Human safety is a big concern - Aflatoxin B1 (AFB1), the most toxic form, is the strongest known human carcinogen, with liver cancer being a particular risk. AFB1 is converted in cows' livers to a slightly less toxic, but still carcinogenic, form, and is then actively excreted in milk. In high producing cows, levels in milk can exceed the EU maximum permissible levels.
<b>Ergot alkaloids</b>	<b>Ergot (Claviceps) fungi (Figure 1)</b>	Constriction of blood vessels, sometimes leading to gangrene and loss of extremities (e.g. ear tips, tail, feet). Can also cause seizures and reduced milk production.	Ergot infects the florets of flowering grasses or cereals, triticale being particularly vulnerable due to its long flowering period. Ergot alkaloids are among the oldest mycotoxins in Europe, and seem to be a re-emerging problem. Symptoms in humans include hallucinations and irrational behaviour (who knows whether this happens in animals too?!).
<b>Zearalenone</b>	<b>Fusarium mould species</b>	Mimics oestrogen, causing reproductive dysfunction and enlargement of the uterus, udder and vulva in cattle, sheep and pigs (Figure 2).	Fusarium spp. contaminate both growing plants and stored feeds. Zearalenone symptoms are usually temporary.



**Figure 1:** Two black 'sclerotia' of the ergot fungus replacing the grain in a barley head. Photo courtesy of University of Illinois Extension.

### In with a bad crowd

Conditions that support mould growth also allow other 'baddies' to flourish. Clostridial bacteria (e.g. those that cause blackleg) and listeria are 'followers' of moulds, especially in silage.

### What can I do?

Attempts to minimise mycotoxin exposure can be made at a number of levels. Pre-harvest control (e.g. use of fungicidal agents or crop rotation), control when ensiling or drying (e.g. using starter cultures for silage) and post-harvest control (using controlled conditions to reduce spoilage) can all have very variable results. While every effort should be made to grow and store feed well, thereby reducing the risks of mycotoxin contamination, the risks cannot be eliminated.

Control at the animal level can be more practical. Not all contamination can be seen, but visibly spoiled or mouldy feed should definitely be discarded (Figures 3 and 4; 5 and 6). Mouldy silage can be unpalatable, and a sign of this can be finding deep holes in silage as animals try to burrow into it to find better-tasting parts.

Mycotoxin binders, in the form of mineral clays, organic polymers, antioxidants or certain bacterial enzymes that break down specific toxins, are now fairly commonly used. Feeding them all the time is probably unnecessary, but they can be used as a diagnostic aid if mycotoxins are suspected of causing a problem in a herd - it can be hard to tell whether this is the case or not. Binders should be used for at least 6 weeks, but a response (e.g. increased feed intakes, increased milk yields) will often be seen within a few days or at least three to four weeks of starting to add them to the diet.

Analysing the diet, and making sure it is well-balanced and of good quality, with adequate levels of energy, macronutrients,



**Figure 2:** Cow with swollen, inflamed vulva due to zearalenone poisoning.

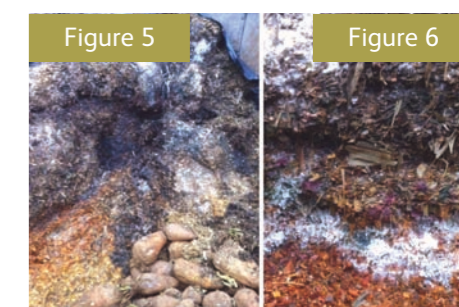
micronutrients and antioxidants (such as Vitamin E) can help animals cope better with any mycotoxins they do encounter. It is now possible to have a toxin analysis performed on feed to find out which mycotoxins are present, but sometimes the levels of toxin can't be quantified and, since mycotoxins will be unevenly distributed throughout feed, the analysis may give a false picture of the feed as a whole.

Because of the molecular structure of mycotoxins, it's very unlikely that any vaccine will ever be made. Neither are there any antidotes, and managing clinically-affected animals relies on supportive treatment, possibly with a mycotoxin binder, while waiting for the toxin to leave the body.

**One last thing - don't forget that feed contamination isn't the only way moulds can cause harm - inhaled mould spores in dust can result in severe lung disease.**



**Figure 3 & 4:** Visibly mouldy feed should be discarded to a depth of 30-40cm. Here the mouldy section of silage has been removed from the clamp and will be discarded, making sure only the silage that looks good is given to stock.



**Figure 5 & 6:** Mould growth on spoiled silage - aerobic stability of silage is a persistent problem where mould growth is concerned. The mycotoxin risk is greater if obviously mouldy silage like this is fed to animals. If there is no other option but to feed mouldy silage, the risk should be reduced by feeding less silage and more good straw or hay, and feeding mycotoxin binders.