

No 166: Impact of Mould in Ewe Diets

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Reducing the prevalence of moulds in ewe concentrates is an important consideration, particularly when bagged feeds are put into stores to meet periods of sudden high demand. As mould counts increase, the nutrient value and palatability deteriorate. This is of particular importance in the late stages of ewe pregnancy, when her energy demand is rapidly increasing but appetite is depressed. Any loss of nutrients or feed intake can trigger the onset of twin lamb disease (pregnancy toxæmia) and hypocalcaemia at this critical time.

Furthermore, dependent on the environmental conditions during feed storage, moulds may produce mycotoxins which can be very pervasive and pose a serious threat to ewe health. Initially, the impact of mycotoxins can go unnoticed but when clinical symptoms occur, the infection may already be significant.

Including a mould inhibitor into ewe compound feeds can reduce mould development and help to maintain the feed quality. Fylax Forte HC is a very effective mould inhibitor with a high concentration blend of buffered organic acids with a strong anti-microbial effect at low dosage levels. It is an ideal option for bagged ewe compound feeds.

The practical impact of moulds in ewe feeds

At Topping

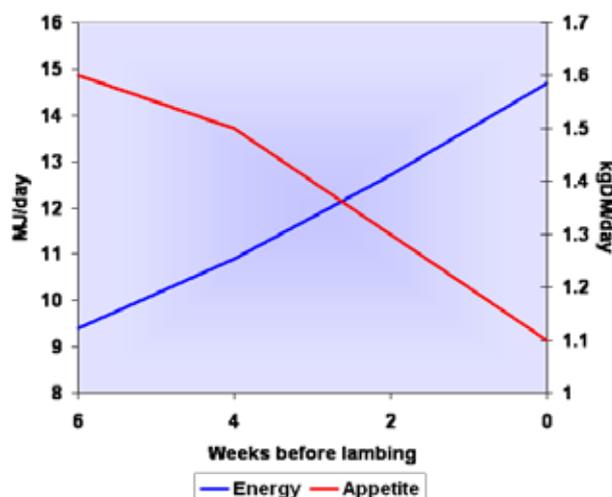
At topping, the mycotoxins produced by moulds are particularly dangerous. For example, zearalenone (a *Fusarium* toxin) can produce some properties of the female sex hormone, oestrogen. If the oestrogenic properties are absorbed they can cause changes in oestrus behaviour and consequently reduce ovulation

and fertilisation rates which can decrease lambing percentage via an increased number of barren ewes and fewer multiple births. It has been estimated that lambing percentage can fall by approximately 5% for every mg of zearalenone ingested per day. Clearly, exposure to moulds and mycotoxins over a prolonged period of time can seriously reduce lambing percentage.

Late Stages of Pregnancy

In the late stages of pregnancy, as appetite is limited by the developing foetus and energy demand significantly increases (see Figure 1), it is crucial to maximise the energy density of the diet using a high quality concentrate. The energy requirement in the total diet of a 60kg ewe with twins immediately prior to lambing is 12.9 MJ ME/kg DMI. Failure to come close to meeting this energy demand not only increases the risk of pregnancy toxæmia (twin lamb disease) or hypocalcaemia, but also reduces the ability of the new born lamb to stand and suckle after birth therefore increases the risk of lamb mortality.

Figure 1. Energy requirements and appetite pre-lambing of a 60 kg ewe with twins



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Ewe concentrates are often manufactured and put into store to meet peak demand. When manufactured well and stored in ideal conditions of dry and well ventilated areas, in most cases there is limited concern for mould development. However, feed exposed to damp conditions can quickly suffer from mould development. As mould counts increase, the nutrient levels and feeding quality of the feed decrease. In these cases a mould inhibitor included in the concentrate is an important preventative measure against potential mould development.

Prevent Mould Development with Fylax Forte HC

What is Fylax Forte HC?

Fylax Forte HC is a highly concentrated mould inhibitor, combining a range of powerful organic acids and their salts with added surfactants to maximise efficacy. New production technology is used in the manufacturing process to activate propionates to form micelles (Figure 2) which effectively destabilise the mould cell membrane (Figure 3). This is a crucial mechanism to allow the organic acids to enter through the cell wall, reducing the internal cell pH which effectively kills the mould cell.

Figure 2. The micelles effectively break through the mould cell wall

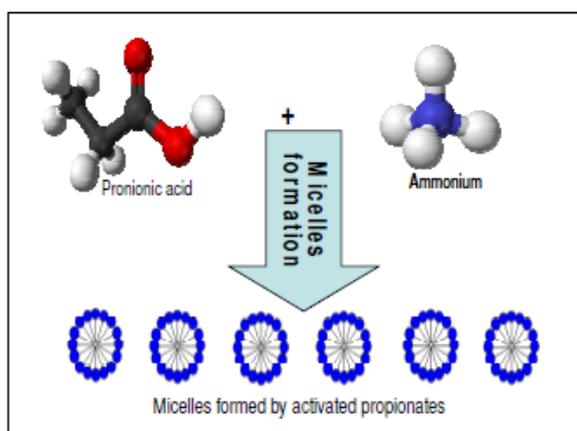
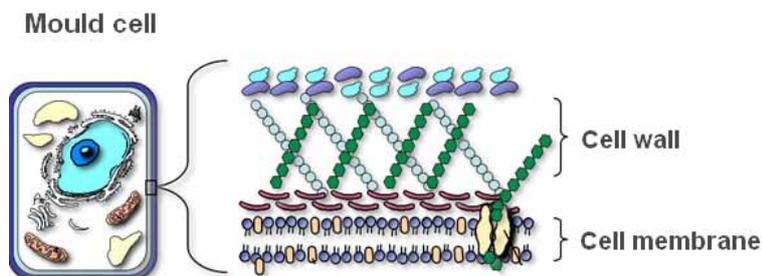


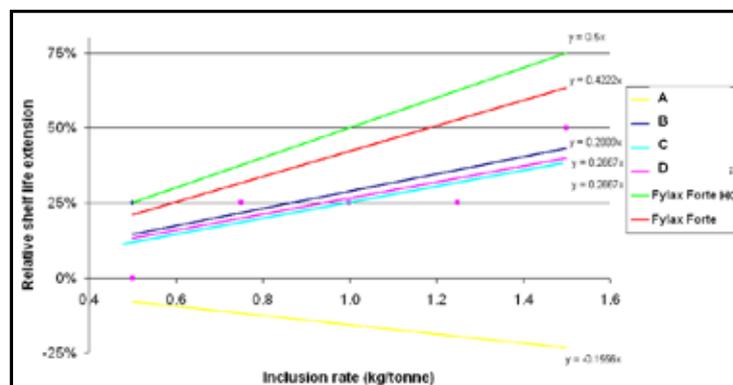
Figure 3. The structure of mould cell wall.



Efficacy for Shelf Life Extension

As Fylax Forte HC has a high mould inhibitor effect at low application levels. A comparison has been made between application levels and the relative shelf life extension of Fylax Forte HC with four competitor products (Figure 4).

Figure 4. The effect of Fylax Forte HC dose level on shelf life extension, a comparison between commercially available products.



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A new production process has improved the efficacy of Fylax Forte by a further 13% compared to the equivalent Fylax liquid (the previous generation of Fylax Forte HC). The trial showed that the most effective product was Fylax Forte HC. The application level can be 50% lower than other mould inhibitor products to achieve the same shelf life extension, making it the cost effective alternative.

Table 1. Typical application levels to extend shelf life for up to 6 months.

Feed material and moisture content	Fylax Forte HC SP (dry) kg / T	Fylax Forte HC Liquid L / T
Compound feed and raw materials up to 13% moisture	0.5 – 1	0.35 – 0.75
Raw materials, moisture content 13 – 16%	1 – 2.5	0.75 – 1.9
Raw materials, moisture content 16 – 20%	2.5 – 4	1.9 – 3.75

Fylax Forte HC SP can be included into vitamin and mineral premixes.

Further information can be obtained from the Frank Wright Trouw technical department on 01335 341102. Receive these technical publications directly via e-mail link.

Contact Sarah Brandrick to register your interest on 01335 341128 or at sarah.brandrick@frankwright.com. You can also access this and past CONTACT and URGENT NEWS publications by registering on our website: www.frankwrighttrouw.com

