The effect of Ultrabond on mycotoxin contamination and the subsequent impact on somatic cell count and milk yield
NortonsôDairy, Norfolk, South East England, UK, March 2014 ïî May 2014

The Situation

NortonsôDairy is a producer of premium milk, butter and cheese based in Norfolk in the south east of England. All of their products are made using milk exclusively from their own dairy herd. The farm was experiencing problems with elevated somatic cell counts, suppressed milk yields and looseness.

The Solution

The farmer suspected mycotoxins as being the root cause of his poor herd performance. His nutritionist recommended using Ultrabond, a broad spectrum, low inclusion mycotoxin control system. Ultrabond was fed at the standard recommended inclusion rate of 20g/head/day.

The Result (as of May 2014)

Fig.1

<table>
<thead>
<tr>
<th>Month</th>
<th>Somatic Cell Count (000 cells/ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>274</td>
</tr>
<tr>
<td>April</td>
<td>233</td>
</tr>
<tr>
<td>May</td>
<td>137</td>
</tr>
</tbody>
</table>

Fig.1 shows that there were dramatic improvements in somatic cell counts (SCC) over a three month period with the use of Ultrabond. A SCC level of 137,000 would qualify for reward pricing with many milk processors across the UK, subject to contract.

Fig.2

<table>
<thead>
<tr>
<th>Cell Count Band</th>
<th>3 Month Mean of Bulk Somatic Cell Count (000 cells/ml)</th>
<th>Bonus/ Penalty (ppl)</th>
<th>Financial Gain/Loss in 9500 Litre Lactation (Nortons’ Dairy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+</td>
<td>0-150</td>
<td>+0.2</td>
<td>+£19</td>
</tr>
<tr>
<td>1</td>
<td>151-250</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>251-400</td>
<td>-0.5</td>
<td>-£47.50</td>
</tr>
</tbody>
</table>

Fig.2 highlights the financial cost that NortonsôDairy would have been subject to should they have sold their milk to processors in the UK.

The calculation below highlights the ROI (Return on Investment) achieved by NortonsôDairy by using Ultrabond:

Reducing SCC from 274,000 to 137,000 improves the milk price by 0.7 pence per litre. Assuming an average milk yield of 30 litres/h/d, the additional contribution per cow is 21p/h/d. Using Ultrabond at 20g/h/d at a cost of £4.50/kg costs 9p/h/d. This gives a ROI of 2.3:1.

The farmer also observed an increase in milk yield of 300 litres over the first three days of using Ultrabond. He also observed that the cows’ excretions were much firmer with the incidence of mastitis amongst the herd greatly improved.
UK Commercial Dairy Farm Trial

Ultrabond

The effect of Ultrabond on mycotoxin levels and the subsequent impact on somatic cell count in a commercial dairy herd
Conrick Farm, Dumfriesshire, Scotland, UK, 25th February 2014 ñ 4th April 2014

OBJECTIVES
To review the use of Ultrabond to control a potentially broad spectrum of mycotoxins present in feed and to assess the subsequent effect on the somatic cell count of a commercial dairy herd in Dumfriesshire, Scotland.

Somatic cell count is a key indicator of milk quality and udder health for the dairy industry (Ma et al 2000).

METHOD
Ultrabond was added to the feed at 20g/head/day of a 170 cow dairy herd between 25th February 2014 and 4th April 2014. After this time, Ultrabond was removed from the ration. Average milk somatic cell counts were taken one month prior, during and one month post trial.

RESULTS
Average milk somatic cell count (SCC) for one month before, during and after Ultrabond addition to the ration.

Fig.1

Following the introduction of Ultrabond in to the ration somatic cell counts (SCC) in the herd were reduced compared to one month before and one month after supplementation (see figure 1). SCC was 17% lower for the month with Ultrabond compared to the previous month without. Similarly, upon removal of Ultrabond from the feed, average herd SCC levels rose by 31%.

It is also important to note that the farmer reported an increase in mastitis in the herd within just one week of Ultrabond removal from the ration (Mr. David Smith, Conrick Farm, personal communication).

CONCLUSION
On a herd basis, Ultrabond controlled mycotoxin contamination in feed resulting in a reduced somatic cell count (see figure 1). Cows with high SCCs display reductions in fertility and general health, and are therefore less able to turn feed into saleable product (Morris et al 2013). In addition, milk processors can impose financial penalties for high SCC milk or premiums for low SCC milk (Hand 2012), thus the inclusion of Ultrabond in the ration can lead to reduced penalties or increased premiums for the farmer, resulting in improved profitability.

References

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