Kite update
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Phosphorus - how low can you go?

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Phosphorus is a vital mineral element required by the cow for healthy body function. It is an important structural component of bones with 80-85% of the animal's phosphorus found in teeth and bones. It also has several other essential functions, including its role in energy metabolism and microbial protein synthesis. Phosphorus is part of the structural framework of DNA and RNA making it essential for cell growth and multiplication in all species and it also has a role in the activation of several B vitamins. In ruminants it helps maintain rumen fermentation as large amounts of inorganic phosphorus are secreted into the gastro intestinal tract via saliva.

How much phosphorus does a cow need?

First let us take a look at the effect of too little phosphorous. Cattle deficient in phosphorus will have reduced overall productivity, appear gaunt and lethargic and have rough coats. Feed intake may also be significantly reduced as the mineral plays a part in controlling appetite. Deficiency can also result in osteomalacia (rickets) due to its close association with calcium and bone formation. Reduced conception rates can occur but this is primarily linked to the reduced energy availability, not a direct link to too little phosphorus. Most importantly there is no evidence that feeding dietary phosphorus in excess of requirements improves reproductive performance.

There is much confusion as to the level of phosphorus needed for a lactating cow largely linked to the general belief that feeding high amounts will improve fertility, but this simply is not the case. The amount required depends on the sum of the amounts needed for maintenance, growth, pregnancy and milk production. The maintenance requirement is largely linked to dry matter intake and the requirement for growth is equivalent to the amount of phosphorus deposited in the bones. For pregnancy very little is required until the last few weeks when demand increases rapidly. The amount required for milk production is equivalent to the amount of phosphorus excreted in the milk, slightly more is needed in higher protein milk due to a link with casein.

The consensus is that overall requirements for a lactating animal should be met with diets containing 0.33-0.39 grams P/kg diet dry matter. Research suggests that farmers are often feeding at between 0.45-0.50 grams P/kg DM and that unsupplemented diets typically contain between 0.33-0.4grams P/kg diet dry matter. Surplus phosphorus in the diet is excreted in the manure and thus becomes a serious environmental pollutant.

The recent surge in the cost of phosphorus has led to mineral manufacturers lowering levels, however, we believe there is still scope to reduce inclusion rates further and recent evidence suggests that there is no need to feed high phosphorus minerals. In addition, depending on your feeding system and range of ingredients, supplementation within the mineral may be unnecessary and costly. In particular if the diet contains feeds such as brewers grains, rapeseed meal and molasses products it is likely that the cow's requirements for phosphorous can be met without extra supplementation.

In summary, feed phosphates have recently seen a massive increase in price, helping to significantly increase the cost of feed minerals. Although the current price is easing, many dairy cows are potentially over fed phosphorus to no economic benefit. It is important to review your phosphorus supplementation, consider doing several TMR samples to check the background level of phosphorus as in some situations it should be possible to reduce the phosphorus supplementation without affecting animal performance.

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Consultants visit the US

In January eight Kite consultants visited the USA for a one week training course based in Minneapolis.

The true picture of the global volatility in milk prices was already hitting home for US producers who had not contracted any forward milk sales. From peaks in excess of $20/cwt last year some spot milk was being quoted at under $10/cwt, which for some units is not even enough to cover the cost of feed. One very efficient 500 cow producer we visited was averaging 43 litres/day but needed to reach 61 litres to break even at current price levels.

The dairy industry in Wisconsin and Minnesota is still relatively traditional, with an average herd size of around100, compared to the feed lot type dairies seen further South and West. The feeling is that this structure will allow them to survive better than some of the larger agribusinesses with higher cost bases. There is a general acceptance that there will be business casualties and the fact that the US is now forecasting a slight reduction in milk production for the coming year as significant numbers of cows are culled is testament to this.

Of the main messages that were picked up, many were related to cow behaviour and how conditions and hence performance can be improved by understanding how cows react and ensuring they lead as stress free a life as possible. Particular attention was paid to dry cow and transition management, but also to the fresh cow management, which was particularly impressive on the bigger units visited. It is obviously easier to implement these protocols when there are larger numbers in groups, but the principles are still the same.

Dry cow management

Management during the true dry period is becoming more focused as it is the time when overfeeding is more likely, particularly under UK conditions when cows are dried off and turned out to grass. The way that Holsteins lay down fat means that by the time we see excess body condition scores it is already too late. Targeting a minimum intake of 3kg of well chopped straw is essential to avoid this. We were particularly impressed with the uniformity of the rations with all the straw chopped down to 2-3” thus preventing the cows from sorting it.

Another important aspect was to minimise the mixing of groups of cattle during the dry period. Moving cows from the true dry group to the transition group should be done on a weekly basis to allow for more stable social groups. There was a view that the amount of retained cleansings and subsequent incidence of metritis could be managed by reducing stress levels. The detachment of the cotyledons from the placenta is a function of the immune system and it is known that this is seriously compromised by stress and raised cortisol levels, one of the main causes of which is continually altering the social dynamics of a group. One unit actually had separate pens for weekly groups of calving cows so that once they were in the transition phase no new cows were ever added to the group.

Time budgets

Although not a new concept the importance of time budgets was reinforced. We need to be giving the cow the option to spend at least 12 hours a day to lie down and ruminate. If we are expecting her to be away from the feeding/lying area for several hours a day for milking the amount of time available to fulfil all the other requirements (eating/drinking/socialising) will result in lying time being reduced. Reducing the number of animals in a group so that they are not in the collecting yard or parlour any longer than necessary is crucial, especially where 3X milking is practiced.

By Paul Macer
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Lame cows

There has been some good research looking at different surfaces and bedding materials for cubicles. Sand consistently comes out as being the best in terms of cow comfort, but it is not without its problems when mixed with slurry. One very clear message that came out of the investigation was that unless the cubicles had sand beds it was crucial to get lame cows onto a straw yard as soon as possible to aid recovery.

We were very fortunate to have a preview of the "First Step" programme, an extremely detailed tool to assist in the investigation of lameness problems. There are 20 different areas that the programme reviews and a comprehensive report is provided to the farm. Areas covered range from footbath design and foot trimming through to nutrition and building design.

Nutrition issues

The level of acid loading on the cows seemed to be much less than seen in the UK, some of which was due to the nature of the silages that were fed. Maize silage was of higher dry matter (32% +) and the use of lucerne was widespread. There is more lucerne being produced in the UK now, but where it is not grown, we should be looking to increase the dry matter of grass silages to reduce the acid loading. The consistency of the muck on all the units visited was excellent, but there was a heavy use of buffers in all the diets and a much greater appreciation of the problems caused by mycotoxins with over 70% of farms feeding a mycotoxin binder of some description.

Feed was pushed up to the cows frequently and the attention paid to the correct positioning of the feed barrier, the height and smoothness of the feed trough were all considered extremely important.



Ventilation and lighting

The range of temperatures was staggering with over 100ºF between summer maximums and winter minimums. It was the heat rather than the cold that was regarded as the main enemy. Fans and misting systems were common place with the majority of sheds having drop down sides. We even saw two sheds with forced ventilation where air was sucked over cooling "radiators" and an average air speed of 6mph maintained throughout the building.

There was also a good deal of emphasis on lighting and there is a new technical note on the website outlining the benefits of having distinct light and dark phases within the day including the importance of the duration and intensity of the light period.

Minerals

We looked at the benefits of having trace elements rumen protected, but still readily available to the cow further down the intestine and learnt that not all protected elements are in the same form to allow for the optimum balance between protection and availability. There are clear benefits in terms of improved fertility, cell counts and foot health to be had from using these better sources of minerals and we are in the process of upgrading some of the mineral specifications to include these protected sources of Zinc, Copper, Manganese and Cobalt.

Everyone who went on the trip learnt a great deal. We also established some excellent contacts with some of the leading researchers in the world whose expertise we will be able to use to help with specific on farm issues back here in the UK.

Employment law update

By Sue Whitmore
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There have been a number of changes to employment law that have taken effect recently and you need to be aware of these if you employ people. If your workers are covered by the Agricultural Wages Board ('AWB'), the AWB terms take precedence over statutory employment legislation. You must also comply with all other employment legislation.

Minimum statutory holiday entitlement (not AWB) increased to 28 days (5.6 weeks) from April 2009. The 28 days can include Bank Holidays. From April 2009 payment in lieu (for statutory, as opposed to contractual holiday) will only be allowed on termination of employment. Workers will be able to carry over the 1.6 weeks into a new holiday year provided there is a relevant agreement in place, e.g. contract of employment.

Statutory maternity, paternity and adoption leave pay

This increased to £123.06 from 05.04.09.

Statutory Sick Pay

This increased to £79.15 from 05.04.09.

Flexible working

From April 2009 the right to request flexible working was extended to parents of children up to the age of 16 years.

Disciplinary and grievance procedures

The new statutory disciplinary and grievance procedures came into effect on 06.04.09 via the new ACAS code. Although the ACAS code is not mandatory, employment tribunals will expect employers and employees to follow it. The ACAS code and the accompanying guide are available on their website – www.acas.org.uk

Long-term sick and holidays

The European Court of Justice ('ECJ') has ruled that workers on long-term sick leave do not lose their entitlement to "working time" holiday at the end of the holiday year if they have not been able to take that holiday because they have been on sick leave.

European age discrimination ruling

The ECJ has ruled that the UK can have legislation that permits forced retirement, but only if the UK government is able to justify having such an exemption from age discrimination laws. The ruling does not resolve the question of whether the default retirement age is lawful. This is for the High Court to decide when the case returns for another hearing, probably later this year.

Agricultural minimum wage

Any agricultural worker underpaid would be entitled to have those arrears repaid at the current rate given in the AWO for the whole of the period he/she has been underpaid, up to a maximum of 6 years. Where it is established that there has been an underpayment of wages, a Notice of Underpayment may be issued requiring employers to repay arrears and to pay a financial penalty to the Secretary of State. The penalty is set at 50% of the total underpayment but there is a minimum penalty of £100 and a maximum of £5,000. The penalty will be charged in respect of underpayments in pay reference periods starting on or after 06.04.09.

This list is not fully comprehensive so if you require further information or have any queries, please contact Sue on 01989 750694 or Sue.Whitmore@star-hr.co.uk

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