Hannah Dairy Research Foundation

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Research Paper Summary

Phosphorus feeding practices in UK dairy herds

Short title: **Feeding phosphorus**

Key words: **phosphorus, feeding, pollution**

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Headline

Most dairy farmers were not aware of how much phosphorus (P) they are feeding, or how much should be fed. Farmers were relying on consultants and/or feed company staff to decide on P levels. There is a need to improve education on the benefits of precision P feeding.

Background

There is a fixed amount of phosphorus available and there is concern about the pollution of water by phosphorus. Dairy cows excrete 60 – 80% of consumed phosphorus in faeces (Knowton and Ray 2013) . Feeding high levels of P in rations can lead to manures with an imbalance of nitrogen and phosphorus and if the application of manure is based on crop nitrogen requirements then excess P is applied and leached from the soil.

Work undertaken

This paper reports a survey of dairy farms in the UK, 139 responses were received from farms with a mean herd size of 257 (range 7 to 2500 cows). 72% of farmers did not know the dietary P concentrations in their milking cow diets, 83% used inorganic P supplements and 62% did not consider P when selecting feed ingredients. 89% of farmers were aware of P pollution issues. 68% did not analyse manure for P.

The paper also reports a survey of 31 feed advisers, the mean herd size of clients farms was 357 with a mean annual milk yield of 9560 kg/cow.

Many feed advisers stated that they used forage P analysis and used inorganic P supplements, 45% stated that they followed the NRC (2001) recommendations. However, more than half of the client farms formulated diets in excess of the NRC (2001) recommendations.

Conclusions

Feed professionals have an important influence on P feeding levels and two-thirds of the advisers were not satisfied with the P management training available to them. There is an opportunity to have precision P feeding which takes into account a cow's changes in P requirement with stage of lactation and the possibility of resorption from the bone in early lactation.

Concerns about fertility when lowering P concentrations are possibly based on out-dated research work with very low levels of P. Feeding within NRC (2001) recommendations has no adverse effects on fertility (Ferris et al., 2009)

Reference

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