Real Costs of Byproduct Feeds?

The dairy industry has long been a primary user of byproduct feeds resulting from wet- and dry-milling processes, corn syrup production, and distillery and brewery fermentations. Increases in ethanol production in Michigan and the Midwest from corn and other fermentable substrates doubtless will make even more distiller's byproduct feed available. Distiller's grain has few other uses except as livestock feed. Traditionally, byproduct feeds have been considered somewhat of a windfall as valuable sources of protein and energy in relation to their market price. Ration formulation programs (least-cost or best-cost formulations) often call for byproducts to be used in rations.

However, it is time to re-think how some byproduct feeds are used in dairy rations. As indicated in the previous article, many of these byproduct feeds contribute significant amounts of phosphorus (P) to rations, sometimes in excess of cows' needs. Often Michigan dairy rations with significant amounts of byproduct feeds, with no P from mineral supplements/packs, have P levels well in excess of cows' needs. Excess ration P results in excess manure P.

There are costs associated with this excess manure P—more land needed to spread extra manure P, more processing to sequester and remove excess manure P (see next article), or other costs associated with handling and exporting excess P from the farm.

For sound economics and environmental management, these additional costs, which are the real costs of extra manure P handling and disposal, associated with some byproduct feeds containing considerable P should be reflected in the feeds' prices in ration formulations. That is their real cost in whole-farm P balancing. What that real price should be is a difficult question to answer. Doubtless, the true extra cost of excess manure P likely is very farm-dependent. For example, if more land had to be purchased to spread that excess manure P associated with feeding byproducts, then the extra cost associated with that excess P somehow should be computed considering cost of the extra land needed to deal with the excess P. Another approach if land is not available might be to determine the actual costs associated with export (disposal) of excess manure P and appropriately increase the price of the byproduct feed in ration formulation. Then one would know when it is not cost-effective to include a particular byproduct feed in the ration; or, at least one would understand that there was going to be an extra cost associated with disposing of excess manure P associated with feeding of that byproduct to maintain P balance in the whole farm.

For many years the livestock industry and especially the dairy industry has been the "dumping ground" for excess P generated by the food, beverage, and fermentation industries through their byproducts. In effect, the dairy industry has been given the responsibility (environmental and financial) of managing someone else's excess P. One way to see that this is done equitably in the future is to put the appropriate higher price on each ton of high-P feed byproduct used in dairy ration formulations. When there are extra costs to dairy farmers associated with managing the excess P, it should be reflected in the price of that feed ingredient in ration formulation. Ultimately, dairy producers should set the real demand for each particular high-P feed byproduct based on real costs. If ration P is in excess of that absolutely needed by cows, manure P increases and extra costs will be incurred. To use the ingredient in rations ultimately increases costs. The real costs of high-P byproducts are greater than we have traditionally thought as "good value" feeds.

Feed for thought and action — ***Dave Beede.***

Chemical Separation of Phosphorus from Liquid Dairy Manure

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Michigan sits at the heart of the Great Lakes region, which contains approximately 20% of the world's fresh water supply. The cool climate and large urban centers of the region combined with an ample supply of forages and fresh water have fueled a recent boom in the dairy industry of the region. The five state region—Michigan, Wisconsin, Illinois, Indiana, and Ohio—accounts for 22.4% of the annual national fluid milk production according to 2001 USDA statistics. The combination of environmental sensitivity and increasing dairy farm productivity have brought the topic of nutrient management to the forefront.

Objectives

Dairy cows produce large quantities of two fluid products, milk and manure. The ratio of manure to milk production is typically on the order of 2 to 1 on a volume basis. MidWest Plan Service (2000) states that a lactating cow produces