

Dairymen Should Consider Liquid Protein Supplements

Sharp advances in grain and protein supplement costs have combined to make liquid protein supplements (LPS) more economical than they have been in the past. This means that more dairymen should determine whether or not they should use LPS under their conditions, says Richard S. Adams, Extension

dairy specialist at The Pennsylvania State University. In addition to being an economical source of nutrients in some cases, liquid protein supplements afford some convenience in the feeding of heifers and dry cows. LPS generally contains 30-60 percent crude protein equivalent with almost all

of it furnished by urea or some other non-protein nitrogen source. The material is carried in a mixture of molasses, water and added minerals.

Liquid protein supplements often are self-fed in paddle-wheel feeders to float tanks. Generally, they are formulated with sufficient palatability to provide an average daily intake of 1.5-2.5 pounds per head daily by dairy cows. Some cows will not eat any while a few may consume 12-20 pounds or more, says Adams.

A preferred method of providing LPS to milk cows is to meter it onto silage or possibly hay. This allows for somewhat greater control of intake. In some cases it is used in a grain mixture as a substitute for regular molasses.

As opposed to fattening cattle, dairy cows cannot adequately balance their protein or mineral needs solely through free-choice feeding of a liquid protein supplement. Intake is largely a function of palatability of the formula as well as meeting energy and dry matter needs. Thus dairymen using LPS must still feed a balanced ration through the forced-feeding portion of the diet. The average intake of LPS must be considered in balancing the ration.

Similar to the use of non-protein nitrogen (NPN) -corn silage, feeding LPS enables intake of non-protein nitrogen over a more prolonged period of time. This reduces risk of toxicity and enables a greater use of NPN in the total ration. It is difficult to include over 1.0-1.5 percent urea

equivalent in the grain mixture if it is only fed twice daily. Such a level also may be used in combination with LPS or silage to which an NPN source was added at ensiling. It is important, however, not to use all three sources of added NPN simultaneously. Usually two sources will not result in an excessive NPN intake, which may reduce appetite and performance, explains Adams.

Often heifers may be satisfactorily raised on forage alone plus 1.0-2.0 pounds of liquid protein supplement per head daily, depending upon the legume content of the forage fed. Make certain, however, that they have adequate amounts of forage before them most of the time, or they may eat more LPS than one can afford.

Few problems have been associated with the feeding of LPS. Some toxicity has been noted when half-starved animals not pre-conditioned to NPN additives were allowed access to LPS. Some individual animals not pre-conditioned to NPN additives also may be adversely affected if they "hog" the material in a short period of time. It appears best to use self-feeders only when the animals will have access to them for at least four to six hours daily, says Adams.

Some dry supplements containing urea or another NPN source might be mixed with silage at feeding time at a rate to provide one to two pounds per head daily. Usually supplements to be used in this manner should not contain much over 10-12 percent urea equivalent or 26-34 percent crude protein equivalent from NPN. The use of a dry supplement in this manner may be considered when they provide nutrients at a more reasonable

cost than liquid supplements. A third alternative would be to limit NPN additives to the grain mixture. A level of 2.0-2.5 percent urea equivalent may be used in grain mixtures if it is fed in 3-5 feedings daily or mixed with the silage, adds Adams.

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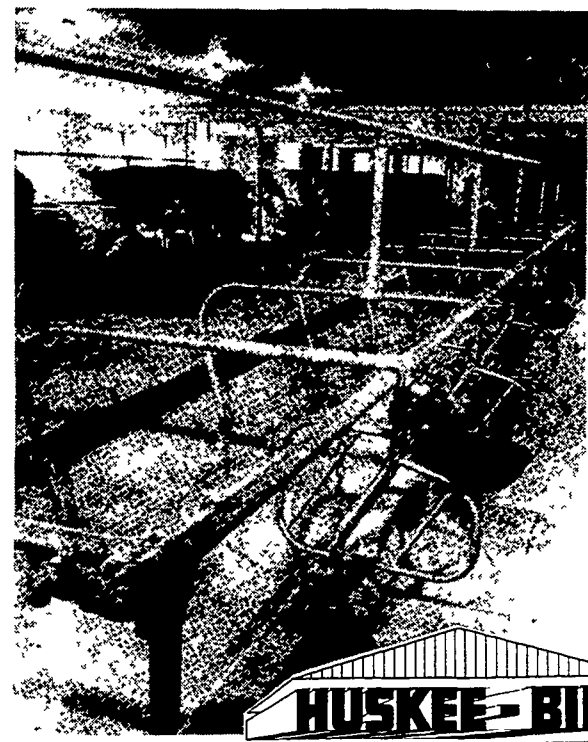
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