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Intensified Feeding Programs for Calves: Are They Worth the Cost?

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Introduction

Intensified feeding of calves for accelerated growth is a hot topic in calf management. These programs involve feeding of more milk replacer than in conventional programs, such that calves consume about twice as much dry milk replacer solids. One advantage of these programs is to enable heifers to grow to breeding size earlier. Disadvantages include increased costs for milk replacer and increased attention needed at the time of weaning to ensure adequate consumption of dry feed. Our research supports the idea that intensified feeding programs will not impair future milk production and will provide sufficient returns to pay for the additional investment in milk replacer.

Milk or milk replacer is the major nutrient source for calves for about the first 3 weeks after birth. Because the calf's digestive system is not yet mature enough to digest grain efficiently, growth and maintenance needs must be satisfied by milk intake. Traditional milk-feeding programs for heifer calves were designed to provide nutrients for limited body growth along with maintenance. Because of the cost and labor involved, the main goal of the pre-weaning period has been to facilitate transition of calves from milk to dry feed (calf starter). Traditional milk replacers contained 20% crude protein and 20% fat, and yielded body weight gains of less than 1.0 lb/day. Research in Israel in the 1990's demonstrated that calves consuming whole milk gained weight faster, and produced more milk as cows. This knowledge stimulated the development of new milk replacers that would promote growth similar to that possible with whole milk feeding.

Intensified Feeding Programs

Intensified feeding of calves involves feeding approximately twice as much milk replacer powder (2 to 2.5 lb/day) as traditional feeding programs (1 to 1.25 lb/day). The milk replacers contain 25 to 28% crude protein to support the potential of young calves for rapid lean growth, and 15 to 20% fat. Unlike traditional programs, milk replacer is fed in increasing amounts as calves grow older. Calves are fed about 1.25 lb of powdered milk starting with the first feeding after colostrum feeding, and amount fed increases to around 2 lb/day before weaning. Milk replacers also are fed at a higher concentration of the liquid mix (15 to 17% solids) than are traditional milk replacers (13%). Because calves are consuming more milk, gradual weaning is important to provide time for calves to gradually increase their consumption of calf starter to avoid a growth slump after weaning.

Calf Starter

Traditional calf starters contain about 18% crude protein on an as-fed basis. Starters used in accelerated growth programs may contain 22% crude protein, to help achieve optimal growth. As with traditional programs, calves should be consuming 2 lb of starter per day for at least 3 days before weaning.

After Weaning

Calves on accelerated programs should be fed calf starter with higher crude protein content for several weeks after weaning. By the time of weaning, Holstein calves on accelerated programs will be about 2

inches taller and 25 to 30 lb heavier than calves on traditional programs. If weaning is difficult and calves do not maintain their growth rates, the advantage in body size of the accelerated program will be lost in the first 1 to 2 months after weaning.

Potential Pitfalls

Intensified feeding programs are not for everyone. Excellent calf management is required to benefit from their use. Amount of milk replacer fed to calves must be increased with age, which requires additional management and communication with calf feeders. As with traditional programs, inconsistency in mixing and feeding can produce digestive upsets. Starter intake is important for rumen development and increased milk consumption reduces intake of starter. Careful attention to gradual weaning and maintenance of starter intake is essential to realize advantages of intensified feeding programs. One way to do this is to feed milk or milk replacer only once per day for several days to encourage greater intake of starter. Feces may be looser with calves on intensified programs, requiring greater attention to correctly identify sick and scouring calves. Additionally, more bedding may be required to maintain a clean, dry environment for the calf.

Costs and Returns

Intensified feeding programs cost about \$35 to \$55 more per calf in milk replacer and starter than traditional programs. Calves will grow faster and attain breeding size earlier, and may even produce slightly more milk. Results from our most recent study indicated that while feed costs were \$1.27 greater/calf per day than the traditional program, the decrease in age at first calving and a trend toward greater milk yield in first lactation resulted in no difference in total returns. If the sale price of milk is high, the return will likely be positive. In fact, our results support the idea that the economic advantage of accelerated growth programs could be almost 3 times the initial extra cost of milk replacer, and likely would not be negative. This suggests that the decision about whether or not to use accelerated programs should be based on other farm-specific factors.

Summary

Intensified feeding programs can produce larger calves at weaning and heifers that reach breeding size at a younger age. Calves may have looser stools during the pre-weaning period although health status is not affected. First-lactation milk yield tends to be higher for cows on intensified feeding programs as calves. Economically, intensified and traditional feeding programs were not significantly different in cost, indicating producers can consider other farm-specific factors in selecting a feeding program for their calves.