

REARING CALVES ON MILK SUBSTITUTES



In New Zealand the use of pasture as a milk substitute has been exploited more than in perhaps any other dairying country. Pasture can be substituted entirely for milk for well grown calves between eight and ten weeks of age.

tory results. At Massey Agricultural College last spring satisfactory growth rates were obtained with the use of this feeding schedule, but feeding once a day from three days of age onward. While this was successful in this trial it is probably a more hazardous procedure. Delaying once-a-day feeding to one month would be safer.

Early Replacement of Milk

How far can we go in replacing whole milk with substitutes? The more we cut the whole milk the greater the nutritional hazard will be; the better adapted the milk replacer must be to the requirements of the pre-ruminant calf; the better the rest of the management must be to give the calf the best chance of taking any nutritional hurdles.

Points such as providing shelter, reducing the danger of infection, making sure each calf gets its rightful share of the food, and watching for the onset of scours and applying early remedial measures become even more than normally important. Experience at Massey College has shown that breed differences exist. It has been easier to cut the whole milk to a minimum with Friesians than with Jerseys.

Milk by-products offer the best hope for very early replacement of whole milk, and of these, buttermilk powder has been used with moderate success in trials over the last few years.

Friesian calves have been successfully reared when changed to buttermilk powder after colostrum. It is essential to feed the colostrum because of the protection it gives a calf against infection. As the milk from newly

calved cows should not be sold for four days post calving, all milk of this type should be used for calf feeding anyway. Newly born calves need it. For older calves it can replace normal whole milk quite safely. It should be used diluted with 50 per cent of its volume of water, 1 gallon of the mixture replacing 1 gallon of normal milk.

After colostrum feeding for four days, the calves may be changed from whole milk to a buttermilk powder mixture of 2 lb of buttermilk powder per gallon of warm water. (This gives a liquid which has approximately the same energy value as whole milk.)

The change-over is better made over several days. In the second week the calf can be entirely on buttermilk powder plus pasture, the mixture of buttermilk powder and water being fed in the same quantities as you would use with whole milk, except that with buttermilk powder it is more important not to overfeed.

If good pasture can be made available, the calf can be weaned early when it reaches the appropriate size (for example, girth 33½ in. for Jerseys), or the buttermilk powder feeding can be carried on for an extended period at reduced quantities after the eight to 10 weeks stage.

In our experience Friesians can be successfully reared on this system with milk reduced to something like 12 gallons, including the colostrum. In trials at the Dairy Research Institute Jersey calves were reared by changing to buttermilk powder straight after the colostrum feeding in the first week. At eight weeks the calves were healthy, but their growth rate had

been slower than normal, especially over the first three weeks. It would seem safer with Jerseys, when endeavouring to reduce calf milk to a minimum by using buttermilk powder not to change over completely to powder until after the second week.

There was a suggestion in some of the work at Massey College and the Dairy Research Institute that calves changed to buttermilk powder entirely during their first week might be vitamin A deficient. The calves would be eating very little pasture at this stage. Until this point is cleared up by further work, it would seem good insurance to add a vitamin A concentrate to the diet in such cases for the first month.

I would like to emphasise again that the earlier whole milk is replaced by buttermilk powder the greater the hazard. Normally it is quite safe at five to six weeks. How much earlier to make the change is a decision which depends mainly on:

1. The value of the whole milk replaced.
2. The value of the calves.
3. The skill of the feeder and the time and care that can be given to calf rearing.
4. The suitability of the conditions for calf rearing.

One final point on the use of buttermilk powder: We have found it a very valuable food to give to calves which have had any very bad check, say through disease or nutrition, fed either as a gruel or as a dry feed mixed with a small amount of bran or crushed grain to help palatability.