

Milk Feeding in an Accelerated Feeding Program

While rearing calves for a 1,200-cow dairy farm, I fed calves on an accelerated growth program for 2 years. I have a few observations about the milk feeding part of calf care.

SELECTING A FEEDING LEVEL

At first, I wasn't just certain what I wanted to achieve. Prior to adopting higher levels of feeding milk replacer, I was getting between 650g and 700g gain from birth to 56 days.

This rate of gain varied quite a bit from summer (lower) to winter (higher).

The treatment rate for in-hutch pneumonia was 10 to 15% in the summer and over 25% in the winter quarter.

The first year I tried feeding more than 450g of powder daily my primary goals were (1) to reduce the pneumonia morbidity rate to fewer than 10%, especially in the winter quarter, and (2) to increase the rate of gain to at least 800g per day.

I continued to feed both water and textured concentrate ad lib from the first day the calf was in the hutch. The ration continued to be both milk replacer and concentrate.

In order to increase the rate of gain in calves less than 4 weeks of age I increased the milk replacer feeding rate from 450g of powder to 850g daily.

During the first winter of this enhanced feeding program, the calves gained a bit over 800g a day by 56 days and the pneumonia treatment rate dropped to less than 5%.

The following year, as part of a feeding trial, I fed 75 calves at the rate of 1,300g of milk replacer daily. Compared to 800g/day the growth rates increased and the pneumonia treatment rate continued low.

FEEDING DIFFERENT AMOUNTS

I had to adopt a whole new attitude about “every calf gets the same” kind of feeding procedures. For the 850g ration, I fed half at 7:00 AM and the other half at 4:00 PM. Calves were started out at only 3.8L fed as 1.9L twice daily. By the end of two weeks all the calves were fed 2.8L of milk replacer at each feeding for a total of 5.6L.

For the 1,300g ration I fed at the same times. The calves were fed on a step-up program starting at 3.8L/day working up to 7.6L daily at the end of two weeks. The larger calves (43kg or larger at birth) just dug in and ate the full amount even before 7 days.

Smaller calves were another story. As I went along, I discovered that 27kg calves would eat about 1.9L AM and PM. This seemed to be true regardless of the concentration of the mix (that is, 150g/l to 175g/l).

Larger calves (36kg to 42kg) ate more; roughly 3.8L AM and PM by 10 to 14 days. If I fed too much in the AM the calves just drank less in the PM.

I tried feeding the full 3.8L in the AM to small calves. They drank all of it. But, they didn't drink at all in the PM. They were not hungry. Many, but not all, of these small calves drank between 0.9L to 2.8L quarts of water overnight.

I always checked on water consumption for any calf that didn't drink all her milk.

Sometimes I incorrectly estimated how much to feed. If I fed too much in the morning, the calf won't get up to eat in the afternoon.

I found that by 3 weeks of age, all of the calves on the 850g ration cleaned up all 2.8L AM and PM without any difficulty. The 1,300g ration required another week before the smallest calves came up to the full 3.8L AM and PM.

Different amounts need to be fed to achieve optimum growth. In order to keep track, I set up a feeding chart by hutch to show amount to be fed calves less than 3 weeks of age. Beyond 3 weeks, only one calf here and there needed special attention. With 100 calves on milk there were only about 30 of the youngest calves that needed extra attention.

MANURE PATROL

I had a lot to learn about manure. All the calf raisers I know with individual calf housing use consistency and color of feces as a way to diagnose diarrhea or scours.

But, when I started the higher rates of feeding I had to take into account the potential for overfeeding in addition to pathogens (parasites, bacteria, and viruses) as causes of diarrhea. I can't completely describe the difference in words but abnormal feces due to overfeeding have a different appearance than those due to pathogens.

By trial-and-error and overfeeding 40 or 50 calves I finally learned to pick out abnormal feces due to overfeeding. Once I had that skill, fixing the problem was easy.

Just feed less for a few days. Presto! Feces change back to normal. As long as they had ad lib water, I had very few calves that required special treatment for diarrhea.

At the highest feeding rate (1,300g of powder daily) the definition of "normal" changed, too. For the first 3 weeks or so, the feces were more loose or softer than I expected to see on calves at 450g to 850g of powder. The calves were healthy and gained weight rapidly in spite of the seemingly loose feces. And, remember that all these calves had ad lib water all the time.

WHAT TO FEED

Our goal was accelerated growth [more recently called "normal biological growth" rather than "restricted growth"]. We had to feed a highly digestible

Sam Leadley, Calf & Heifer Management Specialist

Shirley Macmillan, United Kingdom Editor

sleadley@yahoo.com www.atticacows.com

© Attica Vet. Assoc. 2017 All Rights Reserved

product. This meant either whole milk or an all-milk milk replacer. Our experience was with an all-milk milk replacer with all the fat from animal sources. Initially we used an off-the-shelf product (20% protein and 20% oil). We fed up to 850g of powder daily with no observable toxicity problems. [Looking back, these calves may have been somewhat on the chubby side, however.] That period of observation extended to nearly 2 years and nearly 1,000 calves.

But, at higher feeding levels we fed an all-milk milk replacer with all fat from animal sources specifically formulated for an accelerated feeding program for dairy heifer calves. It was 28% protein and 20% oil. A much wider array of products are available now in 2017 than in the late 1990's. Examples are (protein-oil): 26-16, 23-18, and 22-17.

The vitamin and mineral supplements were in proportion to the higher feeding levels (up to 1,300g daily). None of our milk replacers were medicated with antibiotics. A coccidiostat was added daily to the milk replacer ration.

We fed dry matter concentrations varying from 12.5% to 19%. No problems such as scours or calves refusing to eat the reconstituted milk replacer were seen.

All calves, however, had continuous ad lib water in the hutch. They were fed milk replacer with clean pails at every feeding.