

# **Milk Feeding in an Intensive Feeding Program**

While at Noblehurst Farms, I fed calves on an intensive 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 was not just certain what I wanted to achieve. Prior to adopting higher levels of feeding milk replacer, I was getting about 1.5 pounds 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 percent in the summer and over 25 percent in the winter quarter.

The first year I tried feeding more than 1 pound of powder daily my primary goals were (1) to reduce the pneumonia morbidity rate to fewer than 10 percent, especially in the winter quarter, and (2) to increase the rate of gain to 1.8 pounds per day.

I continued to feed both water and textured starter grain free choice from the first day the calf was in the hutch. The ration continued to be both milk replacer and starter grain.

In order to increase the rate of gain in calves less than 4 weeks of age I increased the milk replacer feeding rate from 16 ounces of powder to 30 ounces daily. During the first winter of this enhanced feeding program, the calves gained 1.8 pounds a day by 56 days and the pneumonia treatment rate dropped to less than 5 percent.

The following year, as part of a feeding trial, I fed 75 calves at the rate of 46 ounces of milk replacer daily.

## **FEEDING DIFFERENT AMOUNTS**

I had to adopt a whole new attitude about “every calf gets the same” kind of feeding procedures. For the 30-ounce ration, I fed half at 7:00 AM and the

other half at 4:00 PM. It was fed as 3 quarts of milk replacer at each feeding.

For the 46-ounce ration I fed at the same times. It was fed as 4 quarts of milk replacer mix each feeding. The larger calves (95 pounds 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 60-pound calves would eat about 2 quarts AM and PM. This seemed to be true regardless of the concentration of the mix.

Larger calves (75 to 80 pounds) ate more; roughly 3 quarts 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 4 quarts 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 1 to 4 quarts of water overnight. I always checked on water consumption for any calf that did not drink all her milk.

Sometimes I incorrectly estimated how much to feed. If I fed too much in the morning, the calf would not get up to eat in the afternoon. I had tether-style hutches so it was easy to do a health check for individual calves when this happened.

I am not sure what to suggest for hands-on health checks at farms with wire cages in front of the hutches. I know it is a lot of work to get inside those hutches to check every calf that does not come running out to eat at feeding time.

I found that by 3 weeks of age, all of the calves on the 30-ounce ration cleaned up all 3 quarts AM and PM without any difficulty. The 46-ounce ration required another week before the smallest calves came up to the full 4 quarts 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

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less than 3 weeks of age. Beyond 3 weeks, only 1 calf here and there needed special attention.

### **MANURE (or poop) PATROL**

I had a lot to learn about manure. All the calf raisers I know 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 cannot 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 change the feeding chart and feed less for a few days. Presto! Feces change back to normal. As long as they had free choice water, I had very few calves that required special treatment for diarrhea.

At the highest feeding rate (46 ounces 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 20 or 30 ounces of powder. The calves were healthy and gained weight rapidly in spite of the seemingly loose feces. And, remember that all these calves had free choice 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 product. This meant either whole milk or an all-milk protein 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% fat). We fed up to 30 ounces of powder daily with no observable toxicity problems. [Looking back, these calves may have been somewhat on

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the chubby side, however.] That period of observation extended to about 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 intensive feeding program for dairy heifer calves. It was 28% protein and 20% fat. [More recently we have seen lower fat alternative formulations on the market such as 27-16 and 28-15.]

The vitamin and mineral supplements were in proportion to the higher feeding levels (up to 3 pounds of powder 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 free choice water in the hutch. They were fed milk replacer in **clean** pails at every feeding.