

At the 2001 Western Canadian Dairy Seminar, Dr. Mike Amburgh presented results of trials at Cornell University

Accelerated Calf Growth Revisited

designed to test the feasibility of feeding calves for accelerated growth on liquid diets. The objective of accelerated calf growth is to achieve liquid intakes and rates of gain typical of those achieved by calves allowed to suckle. A 45 kg Holstein calf suckling its dam will consume 1 to 1.5 kg of dry milk solids daily supporting an equivalent amount of growth.

There are several potential advantages of these higher growth rates:

- higher rates of frame and lean tissue growth early in life might promote reduced age at first calving;
- increased feed efficiency would result from higher growth rate, lowering cost per pound of gain;
- calf health might be improved, resulting in lower calf culling rates.

Producers who have tried to implement accelerated calf feeding programs based on the promising results of early experiments have often been disappointed with the results. Subsequent experiments at Cornell and the University of Illinois have refined some of the requirements for the successful application of these programs but many questions remain unanswered. Here are some recommendations, based on what has been learned to date:

- ✓ Reduced age at first calving will not be realized if subsequent heifer feeding and management fails to capitalize on accelerated calf growth.
- ✓ Colostrum management is critical. Calves must receive an adequate quantity (at least 3 litres) as quickly after birth as possible. Check quality with a colostrometer or feed only colostrum from older cows. It is a good idea to tube-feed 3.5 to 4 litres of high-quality colostrum immediately after birth.
- ✓ Select an appropriate milk replacer. The milk replacer should contain 28 to 30% protein and should contain only milk proteins. Whole milk is not recommended for this program because of its greater cost. Furthermore, studies in progress at Cornell and the University of Illinois suggest that a milk replacer lower in fat than whole milk will enhance lean growth rates. Merely feeding more of current standard (e.g., 20% protein, 20% fat)

milk replacers will *not* accomplish the goal of rapid lean growth. Feeding more provides more protein, but

also more energy which may be deposited as fat.

- ✓ Currently, there are very few commercial milk replacers formulated for accelerated growth. Ingredient quality and manufacturing process of accelerated growth milk replacers are critical to achieve high digestibility. Optimal vitamin and mineral content for accelerated growth milk replacers are not currently known.
- ✓ Supplemental water *must* be available to calves.
- ✓ Target a powder consumption of 1.5% of body weight during the first week and 2% thereafter. Milk replacer should be reconstituted to 15-17% solids. Calves should consume this much liquid (5 to 6 litres in week one, 8.5-9.5 litres in week two and after) in two feedings daily. Greater amounts will require a third feeding daily.
- ✓ Provide calf starter free-choice beginning at 2 weeks of age. The starter should contain 25 to 26% crude protein on a dry matter basis and must include ingredients that are easily fermented in the developing rumen and easily digested in the lower digestive tract.
- ✓ During week five, decrease milk replacer offered by 50% by eliminating the afternoon or evening feeding. Calf starter consumption should increase quickly. The calf can be weaned when eating at least 0.75 kg of starter for three consecutive days.

source: J.K. Drackley, Moorman's Feed Facts 11:3(2001)

