



# More milk for heifers and fewer dirty tails? It's possible!

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Maximizing heifer growth early in life leads to more vigorous, healthier and better developed heifers that breed earlier, thus leading to higher productivity and a more rapid return on investment. Because young heifers are unable to digest anything other than milk proteins for the first three or four weeks of life, it is crucial that they receive a sufficient amount of good-quality milk or milk replacer as soon as possible after birth. But how do you increase milk consumption rapidly while avoiding diarrhea?

## 1- The right QUANTITY of good-QUALITY colostrum, and not once but twice!

A recent study conducted on 827 cows (67 farms) in the United States revealed that immunoglobulin (IgG antibody) concentrations varied from 2 to 200 g/L in first-milking colostrum. Knowing that a newborn needs 200 g of IgG to ensure a successful immune transfer, a calf would need to ingest anywhere between 1 and 100 L of colostrum during its first feeding...

How does Quebec rate in terms of colostrum quality? In our most recent "Ready, Set, Grow!" workshops, we assessed the quality of colostrum samples taken from cows on different farms. The refractometer values we found varied between 13 and 32 per cent Brix (equivalent to about 3 to 111 g/L of antibodies). To ensure that 200 g of antibodies are transferred to the calf, the animal

would have to consume anywhere from 1.8 to 67 L in its first meal! It goes without saying that it is a good idea to test the quality of your colostrum to make sure you are only giving the best to your future milk producers.

Our recommendation: *Ad libitum* feeding of excellent quality colostrum ( $\geq 22$  per cent with a Brix refractometer) within one hour of birth and colostrum (from the first milking) again at the next feeding (See figure below).

## 2- A clean, dry, draft-free area

Newborn calves move from a sterile (the uterus) to a contaminated environment (the barn) in a matter of minutes. That environment has a huge influence on their susceptibility to pathogens. To maximize their absorption of antibodies, heifers need to be dried off thoroughly soon after birth and housed in a clean, well-ventilated (open pens) but draft-

free space set up with fresh bedding (thick straw). An additional source of heat is also beneficial during the first few hours after birth. The key to success is to ensure that the immunoglobulins from the colostrum penetrate the newborn's intestine before the bacteria from the environment do. This is why it is so important that heifers receive colostrum as soon as possible after birth (within one hour).

Our recommendation: Lots of straw bedding, good ventilation (max 0.3 m/s) at calf level, and a source of heat (e.g. heat lamp) during the first hours of life if the temperature is below 10-15°C.

## 3- Same milk, same concentration, same temperature, same schedule ... every day

Calves LOVE consistency! It is important to mix the milk replacer the same way every day and feed it at a constant temperature. If the calves are fed three times a day, it is more important that the schedule be consistent than that the feedings be exactly 8 hours apart. If the calves are consuming whole milk, then bulk tank milk or a mixture of milk from a number of cows will automatically be of more consistent composition than discarded milk or milk from a sick cow.

Our recommendation: Be consistent!

## 4- Let calves drink *ad libitum*

If you get your calves off to the best possible start and reduce the presence of pathogens in their environment, there is no reason to avoid giving them more milk earlier on. Ideally, the calf should continue to receive milk from its dam during the second and third days of life (transition milk) and then switch to whole milk or milk replacer.

Our recommendation: Offer heifers 6 L/d of transition milk on days 2 and 3 of life and then 8 L/d of milk or milk replacer on day 4.

All things considered, there are two basic principles to ensure your future milk producers get the best start in life:

1- a successful immune transfer at birth and environmental conditions that favour immunity

2- *ad libitum* milk intake during the first days of life.

Every little change aimed at improving newborn calf management that adheres to these two principles will help produce productive cows for your herd in the future.

**How do you know if your colostrum is of good quality? There are a number of tools available, but we strongly recommend the refractometer. It is more accurate and affordable, and the results are not dependant on temperature.**

CALF REQUIREMENTS: 200g OF ANTIBODIES (IgG)			
	REFRACTOMETER	COLOSTROMETER <small>Colostrum at 20 °C for test</small>	COLOSTROBALLS <small>Colostrum at 20 °C for test</small>
<b>CALF (4 L) + FROZEN</b>	26%: min. 2.5 L 24%: min. 3.0 L 22%: min. 3.5 L	GREEN $\geq 50$ g/L Will need $\leq 4$ L	IF AT LEAST 1 GREEN Will need $\leq 4$ L
<b>FEEDING ON DAY 2</b>	20%: min. 4.5 L	YELLOW 30-50 g/L Will need 4-6 L	IF AT LEAST 1 ORANGE Will need 4-7 L
<b>FEEDING ON DAYS 3-4</b>	18%: min. 6.5 L 16%: min. 9.5 L	RED $< 30$ g/L Will need $\geq 7$ L	IF ONLY RED Will need $\geq 8$ L