
Feeding Colostrum to Calves

Colostrum is essential for calves because they are born without any appreciable immunity. Unlike us, calves can only obtain immunity from colostrum. At birth the calf's small intestine is referred to as "open." This means that nutrients and possibly pathogens can be transferred from the gut to the blood-stream. Therefore, it is essential that calves be born in a clean environment and be fed colostrum as soon as possible after birth. Colostrum provides the immunoglobulins (antibodies) necessary for health and growth.

How can I tell if the colostrum is good or not?

Obtain a colostrometer from farm supply houses. These are fairly inexpensive (around \$40.00). The colostrometer works in a similar fashion as a maple syrup hydrometer. To get an accurate reading the colostrum needs to be at room temperature. If the colostrum is warm you will get an underestimate of colostrum quality; if the colostrum is cold you will get an overestimate of colostrum quality. Therefore, measure colostrum quality when it is about room temperature. Good-quality colostrum is indicated by a green band on the colostrometer and is greater than 50mg/mL of immunoglobulin G (IgG). Less than 50 mg/mL is considered poor quality. If your cows are producing poor-quality colostrum, you will need to feed more (half again as much—see below) or feed colostrum replacer, following manufacturer's directions, to obtain adequate immunity.

How much should I give?

Typically provide at least 4 quarts of colostrum within the first 12 hours of life. Typically one feeding (2 qt) is given immediately and the additional 2 qt is given later. It is better to get the second feeding at 6-8 hours. Some producers feed 1 gallon at birth to get optimal absorption of the immunoglobulins.

Also, colostrum is a great source of energy. Dairy calves only have enough fat to sustain them for about 18 hours. Getting colostrum into them provides them with high-quality fat which will help maintain their body temperature.

How can colostrum be stored?

Colostrum should be milked from the cow into a clean pail. The colostrum should then be allowed to cool to room temperature and tested with a colostrometer as described above. The colostrum can then be poured into bottles or bags for storage. Mark each container with the cow's number, date and immunoglobulin G concentration. As noted earlier, only good-quality colostrum should be fed (>50 mg/mL). Poorer-quality colostrum can be fed to older calves. Colostrum should be frozen, preferably in a frost-free freezer, and thawed in warm (not hot) water. Frozen colostrum should keep for one year.

Pasteurizing colostrum

Pasteurization is a means of destroying pathogenic bacteria through heating. If you attempt to pasteurize colostrum, the pasteurizer must be the type that doesn't fluctuate in temperature, because when the temperature gets above 140° F, the colostrum begins to gelatinize. The optimum temperature and time for pasteurizing colostrum appears to be at 140° F for one hour.

How long should I feed the colostrum?

At least two feedings if you feed 2 quarts at a time, a gallon if you feed it all at once. However, data from Switzerland indicate that the longer you feed colostrum the healthier your calf will be.

Colostrum replacer

Recently, colostrum replacers have improved. Originally they were whey- or blood- based products used more as supplements than replacers. Currently, actual colostrum- based replacers are available. According to a recent study conducted at UNH using UNH calves and calves from Ath-Mor Holsteins in Lee, the product works well and provides adequate passive transfer (protection).

Why use a replacer?

Feed a replacer if colostrum quality is poor, or when you suspect a disease such as Johne's.

How much IgG is present in the colostrum replacer?

Various amounts are available, from 60 g of IgG/dose to 100 g/dose. Our data indicates that a minimum of 100 g at birth will provide enough IgG for most calves to attain passive transfer. However, up to 200 g and provides better insurance to protect the calf.

How should you feed it?

Feed at least 1 dose at birth and, depending on the IgG concentration, feed another dose at 6 hours or 12 hours later. Some producers feed 2 doses at birth without any problems.

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