



Colostrum Quality

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In cows, antibody transfer does not occur in utero, as it does in humans, so the calf needs to absorb enough antibodies from colostrum as soon as possible after birth. If this does not happen, calves are at a significantly higher risk of illness and death and those calves that survive illness, have reduced growth rates subsequently.

‘Use colostrum from the **FIRST** milking for the **FIRST** feed, within **TWO** hours of the calf’s birth and give at least **THREE** litres’.

This practice has seen a significant improvement in calf health on Irish dairy farms. However, there is still room for further improvement both in terms of feeding colostrum to the new-born calf in the correct timeframe and the quality of the colostrum offered.

COLOSTRUM
1 → 2 → 3

1

Use colostrum from the **FIRST** milking for the **FIRST** feed

2

Give colostrum within **TWO** hours from the calf’s birth

3

Give at least **THREE** litres

Factors Influencing Colostrum Quality

Colostrum contains high levels of energy compared to normal milk, which is important, as new-born calves have limited amounts of fat reserves. These reserves are quickly used up to maintain body temperature in the absence of colostrum feeding.

At farm level, colostrum quality can be measured with a colostrometer or a brix refractometer with values above 22% indicating suitability to be fed as a first feed for new-born calves.

Colostrum quality can be influenced by several factors namely:

Nutrition of the cow

Cows that are within target BCS at calving (3-3.5 – Target 3.25) and on a good plane of nutrition should have a plentiful supply of high quality colostrum. Provision of a high quality dry cow mineral is also important in producing high quality colostrum. Where silage quality is poor, supplemental feeding will help to improve colostrum quality.

Colostrum collection - Timing and hygiene at collection

Timing of colostrum collection is very important as it influences the antibody levels in colostrum. Antibody levels are highest when collected immediately post calving (within 8 hours) and drop dramatically thereafter, as the antibody levels get diluted within the udder as more milk is produced. The longer the interval between birth and feeding of colostrum to the new-born calf, the lower the absorption of antibodies. While maximum absorption of antibodies occurs within 2 hours of birth, absorption capacity is reduced to 50% within 6 hours of birth.

Collection of colostrum needs to take place in as clean a manner as possible. Cleaning the cow's teats prior to first milking and collecting colostrum into clean buckets are essential. A recent study at Moorepark found that fresh colostrum had almost 400,000 total bacteria count (TBC) which exceeds the suggested max level of 100,000 TBC. When this colostrum was fed immediately or stored at 4°C (fridge) for a maximum of 48 hours it did not impact on passive transfer of immunity to calves. However, when the colostrum was not stored in a fridge, bacterial growth increased and consequently the absorption of antibodies was reduced. Colostrum quality measured on a Brix refractometer reflects the amount of antibodies present, but it does not tell us about bacterial contamination.

Colostrum storage

If the colostrum is not harvested cleanly or stored correctly, any bacteria present will multiply. Then even if there are plenty of antibodies, they will not be absorbed. The Moorepark study highlights the importance of clean collection and correct storage of colostrum which can be challenging in commercial farm scenarios. Use a gentle heat, less than 50°C, to reheat stored colostrum, to avoid destroying the antibodies within.

