

Rearing Healthy Calves

Replacement heifer rearing systems must minimize calf mortality and morbidity, and ensure that heifers attain target weights at key time points. Halving mortality rates on dairy farms would be worth >€3 million to the Irish dairy industry. High levels of morbidity reduce the likelihood that target weights will be achieved. Failure to achieve target weights can reduce farm profitability by over €7,000 (for a 100 cow herd).

A recent Teagasc Moorepark study revealed that colostrum management practices were poorer on farms with higher mortality rates. Good hygiene is an important factor in the control of calf morbidity and mortality. Regular cleaning of calf pens is associated with lower incidences of persistent illnesses (e.g. scour) and lower mortality rates. Regular disinfection of calf pens will minimise cross contamination and disease risk.

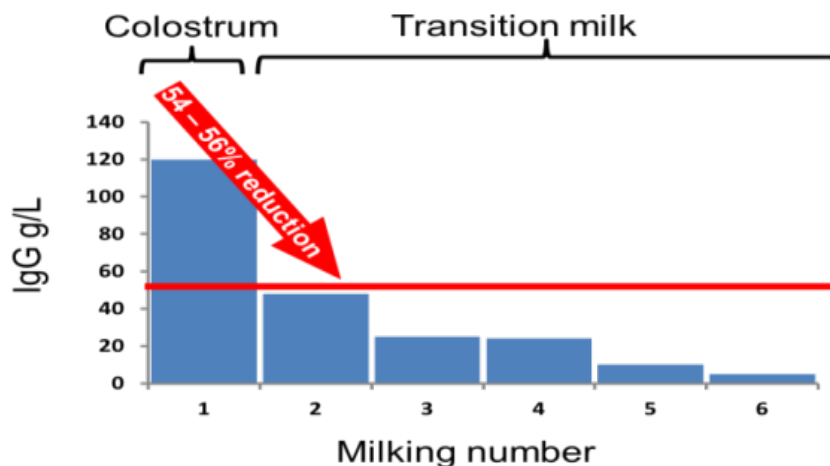
Pre-calving management

- Ensure heifers and cows are in adequate (3-3.25) but not excessive (>3.5) body condition before calving
- Feed a balanced diet pre-calving and include trace elements at least 8-weeks before calving
- Control infectious diseases that impact calf health (i.e., hygienic accommodation and equipment, appropriate vaccination policy, disease eradication, biosecurity).
- Provide facilities suitable for cow examination during calving, calving assistance and new-born calf care.

What is colostrum?

- It is the **first** and only the first milk produced by the cow (the next 4 – 6 milkings are called transition milk)
- It contains many vitally important substances for calf health such as immunoglobulins (antibodies), energy, growth factors, vitamins, and minerals
- Colostrum quality is measured by the amount of immunoglobulin G (IgG) it contains. IgG concentration must be greater than 50 g/L
- Colostrum quality is highest when collected immediately after the cow calves
- The immunoglobulin content is halved by the second milking. This is not suitable to feed to calves as their first feed
- Do not pool colostrum and ensure it is stored in a refrigerator (lasts for 48 hours)

Figure 1: The reduction in immunoglobulin G (antibodies) over the first six milkings. The red line indicates the cut off for good quality colostrum (50 mg/ml).



How much colostrum does a calf need?

- Calves are born without a developed immune system and depend entirely on colostrum to develop immunity
- Calves should be removed from the cow and fed with a stomach tube or nipple feeder
- When a calf is left with a cow, you are unsure how much colostrum they have consumed – they **may not** have had enough!
- Calf birth weight varies depending on breed and gestation length. As a rule, all calves should be fed 8.5% of their birth bodyweight for their first feed (e.g., 35 kg calf requires 3 litres)
- This needs to be fed within two hours of birth to ensure maximum absorption of antibodies
- The ability of the calf to absorb antibodies reduces over time; it is halved by 6 hours after birth and has ceased completely after 24 hours
- An easy way to remember your best practise colostrum management rules is:

Colostrum 1, 2, 3

1st milking only

Within **2** hours of birth

Feed at least **3** litres

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How much milk does a calf need?

- Four feeds of transition milk can improve calf health
- Calves need 10 – 13 % of their birth bodyweight (BW) in milk for the first week, and this rises to 13 – 15% of their birth BW in milk thereafter (e.g., 6 litres for a 40 kg calf).
- Calves will have the same weight gain with good quality milk replacer (25% crude protein) as with whole milk.
- Waste milk (antibiotic residues, high cell count etc.) should not be fed to calves.
- Milk can be fed once-a-day from 4 weeks old, with no difference in weight gain or incidence of scour, but calves must be checked thoroughly twice a day.
- Calves should be offered water and concentrate from a week old to encourage rumen development and ensure target weight gains are achieved.

Dealing with the scouring calf

- Antibiotics do not work against scour, and may instead contribute to antibiotic resistance
- Electrolyte powder solutions do not contain sufficient energy to help sick calves recover from scour.
- Continue milk feeding during an episode of scour, but also feed electrolytes 2 – 3 times daily.
- Maintain excellent hygiene status, and ensure pens are disinfected between calf movements.

Weaning

- Wean based on weight (100 kg for Holstein Friesian; 85 kg Jersey x Holstein Friesian).
- Ensure calves are eating grass or concentrate (1 kg) before they are weaned.
- Wean gradually over a period of a week.
- After weaning, weigh regularly and implement a parasite control regime.