

Calf health and welfare on commercial farms; what's the current situation?

John Barry and Emer Kennedy

Teagasc, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork

Summary

- Good standards of calf health and welfare are achieved on Irish dairy farms.
- Results indicate calves in this study, regardless of gender or breed, were managed in a way which facilitated achievement of passive immunity.
- Areas for improvement include hygiene of feeding equipment and providing correct health treatments to calves, particularly during the first four weeks of life.

Introduction

Herd expansion has created challenges at farm level, and particularly for the management of young calves which are born in large numbers in a relatively short period of time. Achieving good health and welfare standards for calves is important to reduce mortality rates, as well as the time requirement for nursing sick calves and the number of veterinary visits/treatments required. A Teagasc Moorepark study was conducted in 2017 which investigated calf health and welfare on 47 commercial Irish dairy farms. This study provided information on current risk factors to calf health, and allowed for welfare improvement options to be identified.

To ensure the herds visited were representative of dairy herds nationally a number of criteria were set;

- operating spring-calving, pasture based production systems.
- minimum herd size of 70 cows.
- subscribed to the HerdPlus® (50.3% subscription rate nationally).

Each herd was visited twice during the calving season. The initial visit occurred in the first six weeks of the calving season, while the second visit took place during the final six weeks of calving. During each visit an interview was conducted with the principal calf manager to assess management practices, and where possible differentiate between management of male and female calves, but also dairy and beef calves. Environmental measurements were also taken to assess the conditions in which calves were accommodated, while animal-based measurements were taken to directly assess calf health.

Management Practices

From the interviews it was found that on 32% of farms, calves were removed from the cow immediately after birth, and the majority (over 55% farms) feed calves 2–3 L of colostrum for their first feed. On 37% of farms, calves received colostrum from a pooled source. On approx. 28% of farms, calves received colostrum by sucking the cow, while colostrum quality was measured on fewer than 15% of farms. Lower rates of mortality were experienced in herds which treated scour cases by administering electrolytes, while continuing to offer milk as normal, compared to herds which deviated from this, for example by reducing the volume of milk offered, or withholding milk from calves identified as having scour.

Environmental conditions

Hygiene of feeding implements (e.g. teat feeders, stomach tubes) was assessed using swab test kits. These kits measure levels of milk residues and biological contaminants (bacteria and fungi) present. Hygiene results indicate that hygiene practices for feeding implements can be improved, and particularly in the latter half of the calving season. Results also showed that particular attention should be given to cleaning stomach tubes and feeding bottles — the first implements used to feed new-born calves. Space allowances per calf was also measured and mean values of 2.9 (range 1.00–9.02) and 3.1 (range 0.70–9.74) m²/calf identified in visit one and two, which are almost twice that of the minimum legal requirement of 1.5 m²/calf.

Animal measurements

Colostrum samples were collected to determine quality of colostrum. Mean colostrum IgG concentration was 85 (range 4.3–324.7) mg/ml; however, approximately 21% of the total samples collected had IgG concentrations below the 50 mg/ml threshold. Blood samples were collected from calves during both visits to assess level of passive immunity achieved. Mean serum IgG concentration in visit one was 30.9 mg/ml and 27.1 mg/ml in visit two, which greatly exceeds the minimum value for adequate passive immunity (10 mg/ml). No difference was found between the serum IgG concentration of male and female calves, or dairy and beef breed calves. No relationship existed between herd size (which varied between 73 and 373 calves) and calf mortality rate (which varied between 2.3 and 26.7% in the first 12 months of life). Of heifers which died within 12 months of birth, over 60% did so before four weeks of age. This highlights the importance of calf management during the early stages of life, as this is when calves are most vulnerable and losses are most likely to occur.

Conclusions

Colostrum quality is generally high on Irish dairy farms; however, large variation exists, which highlights the need for quality assessment prior to feeding. High rates of passive immunity are achieved among dairy and beef calves, both male and female. This indicates that calves are managed in a way which facilitates the achievement of passive immunity. While scour remains one of the most common causes of calf health issues, by providing the correct treatment in a timely manner, improved outcomes can be achieved.

