

The Canadian National Dairy Study – Heifer Calf Management

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Why is this important?

Producers know that heifer calves represent the future of their herds. In fact, the care provided to calves early in life can have major short- and long-term effects, from calf illness and death through to first-lactation milk production. Certain management practices, such as the use of pain control for dehorning, have become mandatory on Canadian dairy farms through proAction®. However, there is little data on whether farms have fully adopted these practices. Benchmarking calf management and performance can help to improve farmer confidence in their own management or provide incentive to adjust practices as needed. The objectives of this study were to determine calf management practices in early life and to document pre- and post-weaning heifer mortality rates on Canadian dairy farms.

What did we do?

The National Dairy Study (2015) was designed to gather dairy cattle health and management data from dairy farms across all provinces. Targeted data included information about herd demographics, biosecurity, animal care, lameness, calf health and management, reproductive management, and udder health. The project was conducted in 2 phases: Phase 1 involved a comprehensive questionnaire and Phase 2 consisted of farm visits to a subset of phase 1 participants.

The questions examined in this study included those related to biosecurity practices involving calving management and newborn calves, heifer calf health, disbudding or dehorning, and pre- and post-weaning heifer calf mortality. In total, 1,097 surveys were analyzed for this portion of the study.

What did we find?

Colostrum Feeding

Half of respondents reported that calves were never allowed to nurse their dams, but only 17% always removed calves within 30 minutes of birth. Only 67% of farms reported that they always fed 4 L of good-quality colostrum (>50g/L IgG) within the first 12 hours of life. Most producers did not do overnight feedings (between 9 pm and 5 am). Only 12% of producers heat-treated their colostrum. Producers with a dedicated calving pen (not a group calving pen or calving/illness pen) were less likely to allow calves to nurse their dams and more likely to be concerned with cow and pen cleanliness, provide overnight feedings, and feed a higher milk volume to



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Calf Housing

Most pre-weaned calves were housed individually (Table 1).

Table 1. Percentage of calves housed in various housing types.

Housing type	Percentage of calves
Individual pens	40
Individual hutches	21
Group pens	34
Group hutches	1

Of those housed in group pens or hutches, 31% were in pairs, 59% were in groups of 3 to 10 calves, and 10% had group sizes >10 calves.

Pre-weaning Calf Feeding

On average, the maximum volume of milk or milk replacer fed to calves per day was 8.2 L. Younger producers and those using group housing were more likely to feed higher amounts than older producers and those using individual housing.

Disbudding and Dehorning

Most producers used cautery for disbudding (86%), with 9% using caustic paste and 11% surgically amputating. The majority (60%) of producers disbudding at 3 to 8 wk of age, with 28% at <3 wk of age and 22% at 8 to 16 wk of age. In addition, 5% of producers dehorned at >16 wk of age. Overall, 34% of producers used sedation, while the use of a local anesthetic (72 to 64%) and nonsteroidal anti-inflammatory drug analgesia (NSAID; 30 to 21%) differed based on age of disbudding/dehorning. Percentage of producers using local anesthetic and NSAIDs decreased as calves got older.

What does it mean?

Appropriate feeding of colostrum (delivering clean, high quality colostrum quickly and in sufficient quantity) is an important factor in setting calves up for success. There has been a positive shift in this regard, with more producers adopting beneficial colostrum management protocols. However, this study indicated best management practices (BMPs) are not universal and some producers may benefit from extension and education efforts. Research shows that early life nutrition (i.e. milk volume) affects calf survival and that pre-weaning nutritional stress affects cortisol (stress hormone) levels and calf behaviour. Although the average milk volume fed was 8.2 L/d, there were still one-third of producers that fed ≤ 6 L/d, which results in chronic hunger and, in the winter, may not be adequate to maintain health, growth, and vigour. Of note, the Code of Practice recommends providing 20% of body weight in milk volume.

There has been an increase in uptake of use of local anesthetic and analgesia when disbudding, which is encouraging. Interestingly, producers using social media were more likely to adopt these practices, suggesting that connection to information through online access can enable producers to become aware of and more willing to adopt BMPs. This study found that, in general, BMPs to avoid disease and improve health in early life were often associated with each other and that producers adopting one BMP were more likely to adopt others. For instance, producers that fed a higher milk volume were also more likely to clean calf pens between uses and disbud calves at an earlier age.

Summary Points

- The majority of producers had adequate colostrum management; however, there is room for improvement, particularly considering the importance of early nutrition in calf rearing success.
- As the current Code of Practice is under review, many producers may need to consider whether milk volumes provided to calves are sufficient to meet their needs and/or animal care requirements.
- Encouragingly, many producers are now using anesthetic, sedation, and/or analgesia when disbudding calves.