Does slow and steady weaning win the race?

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What this research is about:
It is common practice in the dairy industry to wean calves around 6-8 weeks of age. This weaning process is when calves are transitioned off milk and onto solid feed. Weaning is a necessary, but stressful period in a calf's life, and if not done properly, can have negative impacts on performance and welfare. Therefore, it is important that producers provide good management and optimal nutritional programs to ease this dietary change and improve the weaning process for dairy calves.

Research Goal:
The goal of our research is to determine ways we can reduce the stress and improve performance and welfare during the weaning period through nutritional and management practices.

Main Findings:
- Weaning calves by a multi-step or a continuous gradual program may result in good behaviour and performance during weaning
- No differences between treatments for growth, feed intakes, rumen development or behaviour were found
- Placing solid feed next to the milk source can:
  - ↑ solid feed intake
  - ↑ water intake
  - ↑ growth prior to weaning
  - ↑ rumen development prior to weaning
- This research provides new information on ways we can improve our weaning management of dairy calves
  - This can help satisfy consumers' concerns about animal welfare
  - This can also improve weaning success for dairy calves

Take Home Messages:
The weaning period is a stressful time for a calf, and providing producers with the tools and recommendations to improve this period is essential to improve calf performance and welfare. Dairy producers should wean their calves using some type of gradual weaning program to improve performance and behaviour during this stressful dietary change. Also, placing the bucket of solid feed next to where calves consume their milk, can be a simple and effective way to increase feed intake, which may help improve weaning success.

Research Impact:
As consumers are becoming more aware and concerned about where their food products come from and the welfare of production animals, it is now even more important to ensure we are providing optimal care to dairy calves. By investigating nutritional and management practices that can influence the success of calves during the weaning period, we will be able to provide better recommendations to producers on how to successfully wean their calves. This research area is important so the welfare and performance of our dairy animals is maximized, satisfying the public's concern, while improving efficiency and production for dairy producers at the same time.

What we did:
- 60 calves were enrolled and housed in individual pens
- Calves were fed by an automated rail feeding system (CalfRail), which ran 5x/d offering the calves 2.5 L of milk per feeding
- Calves were offered ad libitum water and solid feed
- Calves were randomly assigned to one of two weaning programs and weaned over 14 days (d 43-56):  
  - Multi-Step Gradual Program: Larger, more noticeable reductions in milk during the weaning period  
  - Continuous Gradual Program: Small, equal reductions in milk daily during the weaning period  
- Calves were also randomly assigned to one of two solid feed location treatments:  
  - Adjacent: Solid feed was offered next to the milk source within the pen  
  - Opposite: Solid feed was offered opposite of the milk source within the pen  
- Outcomes measured were: growth, rumen development, behaviour and nutrient consumption

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