

# SMOOTH TRANSITION

Steps to follow to ensure weaning is as stress free as possible

Weaning is one of the most stressful times for calves, and successful weaning management is essential to ensure a smooth transition from a liquid to solid diet. To avoid problems, such as reduced growth rates, weight loss and diarrhea at the time of weaning, you can follow various management strategies to combat these issues.

The key to a smooth transition at weaning lies with rumen development. As the calf begins to eat solid feed, the rumen starts to become populated with microbes. This allows for fermentation of the solid feed, which promotes development of the rumen wall. The more solid feed a calf eats, the more the rumen will develop to supply the calf with the necessary nutrients for growth and development. So getting calves to eat more grain before weaning is key to a smooth transition and reducing a post-weaning growth lag. However, calves should be fed about 20 per cent of their body weight in milk or milk replacer for the first month of life. Limiting milk intake to promote grain intake is not recommended since pre-weaning growth is associated with improved milk production in the first lactation.

To help promote grain intake, it is recommended calves have access to grain when they are more than two weeks old. Calves under three weeks old eat very little grain. Therefore, the weaning process should not begin before the calf is four weeks old since the rumen will not have a chance to develop. Research investigating weaning ages and rumen development found the concentration of short-chain fatty acids, a product of rumen fermentation, in the rumen fluid was very low at four weeks old suggesting the rumen is only just starting to develop<sup>1</sup>. Weaning earlier than four weeks can have some significant welfare and economic implications since calves will show signs of hunger, stress-related behaviours, such as vocalizations and cross sucking, and have reduced growth rates or even weight loss.

Water is another essential component that will help improve dry matter intake and facilitate a smooth transition at weaning. When a calf ingests water it ends up in the rumen, whereas the milk ends up directly in the abomasum. Water in the rumen and a bit of starter create the ideal environment for microbial fermentation. Offering water to calves helps




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promote starter intake and rumen development, and increases weight gain. Water is especially important in the summer months since it helps keep calves cool, but it should be provided year round. The proAction Initiative, which includes various components, such as milk quality, food safety, animal care, livestock traceability and environmental sustainability, requires ad libitum water be provided daily to all calves.

How you house your calves can also have a big impact on weaning. Research is now looking at the impact of group housing on feed intake, growth and animal welfare. The data show group housing calves from a young age is beneficial for promoting feed intake and growth, as well as reducing stress associated with weaning. When calves are paired or group-housed, it is believed they learn from each other to eat the starter. University of British Columbia research found calves housed in pairs starting at around one week old began eating grain sooner and ate more of it than individual-housed calves<sup>2</sup>. The pair-housed calves also had increased body weight and average daily gain throughout the weaning period.

When it comes to weaning calves, it is best to do so gradually. Gradually-weaned calves tend to have better feed intake, better weight gain, less weight loss, and reduced cross sucking and signs of hunger. It is better to gradually reduce the amount of milk at each feeding rather than reduce the number of meals. Based on the recommendations outlined in proAction, calves should be gradually weaned over a period of five to 14 days.

Calves are your herd's future. How calves are fed and managed can have a large impact on performance throughout the first lactation. Reducing illnesses and stress for calves is important for growing healthy calves for replacements. Since weaning is such a stressful time, implementing management strategies, such as gradual weaning, group housing and providing access to starter and water is essential for improving calves' overall health, welfare and economic potential. 

## References:

1. Eckert, E., Brown, H., Leslie, K., DeVries, T., Steele, M. 2014. Weaning age affects growth, feed intake, gastrointestinal development, and behavior in Holstein calves fed an elevated plane of nutrition during the preweaning stage. *J. Dairy Sci.* 98: 6315-6326.
2. Costa, J., Meagher, R., von Keyserlingk, M., Weary, D. 2015. Early pair housing increases solid feed intake and weight gains in dairy calves. *J. Dairy Sci.* 98: 1-6.



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