Nutrition in First Month Critical to Dairy Calf Success
Researchers create an information base for implementation of proper nutritional management to maximize calf health and productivity in a new review in Applied Animal Science

Philadelphia, PA, September 30, 2019 Raising healthy and productive calves is crucial for the long-term success of the dairy industry. The preweaning and weaning periods are considered the most challenging times in dairy production and are associated with the highest morbidity and mortality rates within the herd. Digestive diseases and disorders remain the most common reported cause of morbidity and mortality during these periods. Scientists at the University of Guelph and the University of Alberta recently reviewed the effects of common nutritional strategies during the first month of life.

Calves do not receive immunoglobulins from their dam in utero but through consumption of first milk (colostrum). Feeding a sufficient amount of colostrum during the first day of life is critical to reducing calf morbidity and mortality, and immunoglobulins are more easily absorbed immediately after birth. Feeding colostrum to calves also promotes a balanced gut microbial community, which helps prevent diarrhea during the first month of life. Most calves are switched directly from colostrum to whole milk or milk replacer, even though feeding transition milk (milk from milkings 2 through 6 after calving) likely has beneficial effects.

“Transition milk continues to be discarded on farms, mainly due to difficulties managing the feeding of it to calves and it being undesirable for human consumption,” lead author Mike Steele said. “It appears that calves may be missing out on an opportunity for increased development and maturation of the gut when they are not fed transition milk; however, research regarding the specific compounds responsible for these beneficial effects is lacking.”

Applied Animal Science Editor-in-Chief David K. Beede said, “This invited review centers on key nutritional strategies to maximize gut health and function of young dairy calves. Colostrum and transition milk contain bioactive molecules that can positively impact gut microbiota and development. The untapped potential to use novel feeding strategies and microbial-based products as alternatives to antibiotics also is explored.”

“Most calves develop digestive disorders at approximately 2 weeks of age; 23% of preweaning dairy calves are treated with antibiotics for diarrhea and 54% of cow-calf operations are administering antibiotics to prevent illness,” Steele added. “Unfortunately, antibiotic exposure has been linked to gut microbial imbalance in preweaned calves and can lead to a high number of antimicrobial-resistant bacterial phenotypes. Although their modes of action have not been elucidated, numerous studies report the ability of microbial-based products to reduce diarrhea incidence in calves.”

The review also recommends later weaning with a proper step-down feeding protocol to improve growth and minimize distress at weaning.

The article appears in the October issue of Applied Animal Science.

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NOTES FOR EDITORS


Full text of the article is available to credentialed journalists upon request; contact Brittany Morstatter at +1-217-356-3182 ext. 143 or arpas@assochq.org to obtain copies. To schedule an interview with the authors, please contact Mike Steele at masteele@uoguelph.ca.

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