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Maintenance of proper energy balance during transition period in dairy animals for improved performances

Amit Kumar Singh[1]* and Upali Kisku[2]

[1]Subject Matter Specialist (Animal Husbandry), ICAR- Krishi Vigyan Kendra, Amihit, Jaunpur 2, Uttar Pradesh, India

[2]PhD Scholar, Dairy Extension Section, ICAR- National Dairy Research Institute, Eastern Regional Station, Kalyani, India

Abstract

Transition period is a critical time for dairy cows, as they undergo physiological changes that lead to an increased risk of metabolic disorders. Proper energy balance during this period is essential to ensure optimal performance and health. This article reviews the importance of maintaining proper energy balance during the transition period and discusses strategies for achieving this, including feeding management and nutritional interventions. The role of monitoring and early detection of metabolic disorders in ensuring optimal performance is also discussed.

Introduction

Dairy cows must go through a number of physiological changes throughout the transition period in order to successfully produce milk. Cows go through a negative energy balance during this time, which implies that the energy they consume is not enough to meet their needs for milk production and maintenance. Certain metabolic abnormalities, such as ketosis, fatty liver, and displaced abomasum, can have a severe impact on the health and productivity of cows. So, it's crucial to maintain a good energy balance during the changeover time in order to maximise cow health and performance.

Feeding management and nutritional interventions are critical in maintaining proper energy balance during the transition period. Feed intake should be gradually increased before calving to help prepare the cow for lactation. Nutritional interventions such as the use of anionic salts can also help reduce the risk of metabolic disorders by maintaining the cow's calcium and magnesium balance. monitoring blood metabolites including beta-hydroxybutyrate (BHB) and non-esterified fatty acids, as well as the state of the cow's body, is also important (NEFA), can help detect and prevent metabolic disorders before they become severe.

In addition to feeding management and nutritional interventions, other strategies can also help maintain proper energy balance during the transition period. One such strategy is the use of rumen-protected choline supplements. An essential vitamin, choline is important for lipid metabolism and liver health.. Supplementing with rumen-protected choline during the transition period can help support liver function and reduce the risk of fatty liver.

Another important aspect of maintaining proper energy balance during the transition period is minimizing stress. Stress can increase cortisol levels, which can negatively impact cow health and performance. Stress reduction techniques, such as providing comfortable housing and minimizing herd disturbances, can help reduce cortisol levels and improve cow health and performance.

Early detection of metabolic disorders is also critical in maintaining proper energy balance during the transition period. Blood metabolite monitoring, such as measuring BHB and NEFA levels, can help detect metabolic disorders before they become severe. Regular veterinary check-ups can also help identify and treat metabolic disorders in their early stages.

In conclusion, maintaining proper energy balance during the transition period is essential for optimizing cow health and performance. Feeding management and nutritional interventions, including the use of anionic salts and rumen-protected choline, can help maintain proper energy balance and reduce the risk of metabolic disorders. Stress reduction techniques and early detection of metabolic disorders through blood metabolite monitoring and veterinary check-ups are also critical in ensuring optimal performance and health during the transition period.

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