

Planned update of dairy cow nutritional requirements in Switzerland

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Nutritional requirements for dairy cows include recommendations for estimating feed intake and energy, protein, mineral and vitamin requirements and are crucial for the sustainable, nutrient-efficient use of resources in practical rationing. A working group comprising members from Agridea, Agroscope, ETH, FiBL and HAFL has recently decided to align the Swiss feeding recommendations (Green Book; Agroscope, 2021) with the revised German feeding recommendations for dairy cows (GFR; GfE, 2023). This update aims to incorporate recent findings on maintenance, milk production and amino acids into requirements recommendations. In the GFR, energy requirements for maintenance, milk production, gestation, growth, mobilisation and physical activity are newly estimated on the basis of metabolisable energy (ME). This allows the same energy unit (ME) to be used for dairy cows and beef cattle. The protein requirements of dairy cows include endogenous faecal and urinary protein losses, scurf, milk protein, growth and conceptus growth. In the GFR, these are expressed on the basis of protein digestible in the small intestine (sidP). The requirements for 10 amino acids digestible in the small intestine (sidAA) may also be predicted. Adequate nitrogen supply to rumen microbes is assessed based on the difference between the rumen-degraded protein and the microbial crude protein. A validation of the dry matter intake (DMI) prediction by Agroscope showed that German recommendations underestimate winter rations' DMI. Over the next 5 years, existing gaps in the GFR for use in Switzerland should be addressed, and implementation with herbage-based rations tested. Examples of gaps include the estimation of DMI for grazing cows, experience with ration formulation using ME, sidP, and sidAA, and the potential for N-reduced rations when formulated on sidAA. Necessary updates on feed and ration evaluations are summarised in a separate paper.

References

Agroscope (2021): Fütterungsempfehlungen für Wiederkäuer (Grünes Buch). Agroscope, Posieux. Zugang: www.agroscope.ch/gruenes-buch (Konsultationsdatum 23.01.2025). DLG-Verlag, Frankfurt am Main.