ETH publication series on animal nutrition

45th Swiss Animal Nutrition Conference 2025

- Animal Nutrition in Changing Times -

Conference proceedings

May 27th, 2025

ETH-Zurich

Institute of Agricultural Sciences

45th Swiss Animal Nutrition Conference 2025

Conference proceedings
May 27th, 2025

Publisher:
M. Niu, E. Broxham, M. Terranova, M. Heuel, J. Bérard, A. Liesegang, J. Gross
ETH publication series on animal nutrition

Band 45
ETH publication series on animal nutrition
ISBN 978-3-906466-45-0

Address:
Institute of Agricultural Sciences
Animal Nutrition
Eschikon 27
8315 Lindau
May 2025

Performance of male dairy calves of different breeds raised on various types of grasslands for veal production

Jessica Werner
Research Center for Organic Agriculture (FiBL)
Contact: jessica.werner@fibl.org
Geoffrey Mesbahi,Amaranthe Vitra, Florian Leiber, Research Center for Organic Agriculture (FiBL)

Pasture-based veal production offers potential benefits in terms of animal welfare and resource efficiency compared to conventional indoor systems. This study evaluated the performance of 72 male veal calves from three breeds: Brown Swiss, Brown Swiss × Limousin, and Swiss Fleckvieh, raised across four environments: a control group housed indoors and three grazing systems typical from the Swiss landscapes—intensive grasslands, permanent grasslands, and alpine grasslands. All calves on pasture were fed with similar quantities of maize and alfalfa pellets, as well as soy-free concentrate in limited amounts, while the control group had a slightly different feeding plan. Hay was provided ad libitum across all systems. Intensive grasslands were characterized by a higher portion of grasses, compared to permanent and alpine grasslands. Energy content of alpine grassland was higher compared to intensive and permanent grasslands in this study, whereas the protein content was higher at the intensive grasslands compared to the alpine grasslands. Significant differences were observed in performance metrics based on farm type, breed, and carcass traits. Carcass weights differed significantly among systems, with the indoor housed calves yielding the heaviest carcasses. Average Daily Gain (ADG) also varied significantly by systems, with indoor calves achieving the highest ADG and calves at permanent grasslands the lowest, while calves on alpine and intensive grasslands exhibited similar ADG levels. Breed did not affect carcass weights nor ADG, but it showed significant effects on mean maximum Warner-Bratzler Shear Force with Swiss Fleckvieh having lower values than Brown Swiss. These findings underscore the influence of management and environmental factors on growth and meat quality traits in veal production. However, additional data on meat quality after 8 days of maturation and economic calculations are needed to fully assess the feasibility of grass-based veal production.