Book of Abstracts

of the 3nd Mountain Livestock Farming Systems Meeting of the European Federation of Animal Science

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Scientific programme

Session 1. Adaptation of mountain livestock farming to climate change

Date: Wednesday 5 June 2024; 10:00 - 13:15
Chair: Cozzi / Martin / Blanc

Theatre Session 1

Poster Session 1

Session 2. Interaction between farming systems and wildlife

Date: Wednesday 5 June 2024; 15:00 - 17:00
Chair: Holand / Brunschwig

Theatre Session 2

Poster Session 2

Session 3. Product quality and mountain farming

Date: Wednesday 5 June 2024; 17:00 - 19:35
Chair: Coppa / Silacci

Theatre Session 3

Poster Session 3

Session 4. Local breeds

Date: Thursday 6 June 2024; 8:30 - 10:00
Chair: Pauler / Zanon

Theatre Session 4

Poster Session 4

Session 5. Transhumance in European mountains – challenges and perspective

Date: Thursday 6 June 2024; 10:30 - 12:30
Chair: Holand / Zanon

Theatre Session 5

Session 7. Sustainability and ecosystem services of mountain farming

Date: Friday 7 June 2024; 8:30 - 11:00
Chair: Cozzi / Gauly

Theatre Session 7

Poster Session 7

Session 8. New technologies for mountain livestock

Date: Friday 7 June 2024; 11:00 - 13:30
Chair: Morgan-Davies / Schneider

Theatre Session 8

Poster Session 8

Mountain forage production for sustainable ruminant systems in a context of climate change

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Mountain ruminant production systems are based on grassland, especially permanent grassland. Long winter periods require important indoor feeding of conserved grass as hay or silage. Climate change is already affecting grass production and the distribution of available forage resources throughout the year. Grass growth may often be reduced in spring and summer, but new opportunities for grass use may arise in autumn and even winter. Plant phenology is advanced in spring, with earlier heading dates, meaning that harvesting must be brought forward, which can be difficult in periods of frequent rainfall. Faced with these challenges, there are several levers to adapt existing resources or develop new ones. They are based on the adaptation of grassland management, taking advantage of the diversity of grasslands between plots that are more or less early, especially if they are at different altitudes. The introduction of climate-resilient species (resource-conserving grasses, Mediterranean legumes, diverse plants such as chicory, etc.), cereal-legume intercrops, summer catch crops and C4 photosynthetic plants can be considered on cultivated grasslands and plots. The development of agroforestry is also a way of providing additional forage resources during periods of low grass growth, as well as providing shaded areas for animals during heat waves. At the level of the forage and livestock system, the current and future climate means that more forage stocks will have to be built up to get through dry summer periods, or even structural changes will have to be made to reduce stocking rates.

Hay rich in water-soluble carbohydrates increases performance of dairy cows, irrespective of starch degradability supplementation

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Water-soluble carbohydrate (WSC)-rich forages can increase the voluntary dry matter intake (DMI) of dairy cows and diet digestibility, often resulting in higher dairy performance. Most studies have been conducted at pasture or with alfalfa hay and little is known on natural grasslands hay and on the interactions between forage WSC and concentrate starch degradability on dairy performance. We aimed testing the effect on dairy cow performance of botanically diversified grasslands hay (rich or poor in WSC) and its possible interactions with concentrate starch degradation rate (low or high). Four equivalent groups of 14 Holstein and Montbéliarde cows, were fed for 9 week 4.8 kg DM/day of concentrate, 3 kg DM/day of 2nd cut hay and a high (WSC+) or low (WSC-) WSC content1st cut hay (ad libitum). One group per 1st cut hay type received a barley meal based (D+) and the other group received a corn meal based (D-) concentrate. The WSC+ cows ingested more WSC (+551 g/day) and had a higher WSC/crude protein ratio (+0.24) than WSC- cows. The resulting higher OM total tract apparent digestibility (+2.1%) of ingested diet improved milk (+1.4 kg/day) and fat (+58 g/day) yields and feed conversion efficiency (+0.05 g milk/kg DMI) of WSC+ compared to WSC- cows. The WSC+ hay diet induced lower milk urea (-91 mg/kg) and higher milk protein content (+1.1 g/kg) and yield (+59 g/day) compared to WSC-. The effect of concentrate starch degradation rate on dairy performance was not significant for either the WSC+ or WSC- diet.