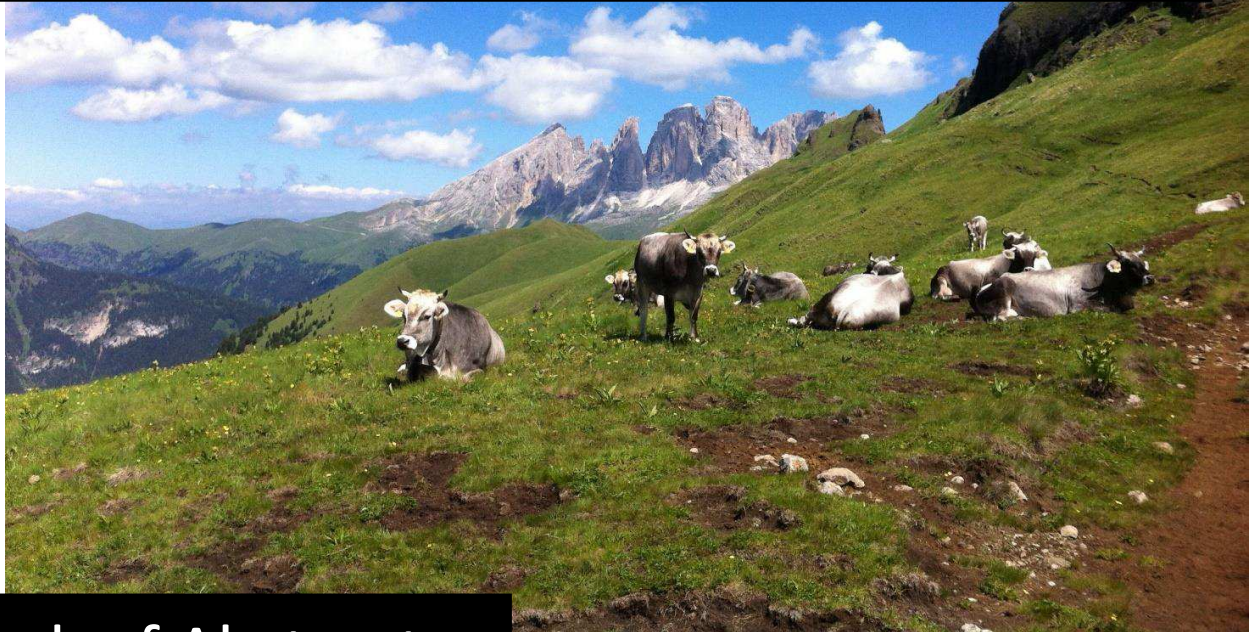


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## **Effects of summer transhumance of dairy cows to alpine pastures on milk composition and cheese yield**

**Saha Sudeb<sup>1</sup>, Amalfitano Nicolò<sup>2</sup>, Franciosi Elena<sup>3</sup>, Carafa Ilaria<sup>4</sup>, Tagliapietra Franco<sup>5</sup>, Bittante Giovanni<sup>6</sup>, Gallo Luigi<sup>7</sup>**

**DAFNAE, University of Padova, Italy, Legnaro, Padova, Italy<sup>1,2,5,6,7</sup>, Research and Innovation Centre, Edmund Mach Foundation, San Michele all'Adige, Trento, Italy<sup>3,4</sup>**

This study aimed to investigate the effects of summer pasture transhumance of dairy cows on milk composition and cheese yield. The study involved 12 multiparous Brown Swiss cows kept in a mountain herd (permanent farm, PF) allotted in two groups of 6 cows each. Cows of a group remained in the PF, the others were moved (July to September) to a temporary summer farm (TF, 1860 m asl). Daily milk yield (MY), BCS and individual milk sample (2000 mL per cow) were collected monthly from June to October. Milk samples were assessed for fat and protein (PRT) content, milk coagulation properties (rennet coagulation time, curd firming rate and firmness) and cheese yield through individual model cheese-making. Model of analysis included the month x group combination as fixed and the animal as random effect, to examine the pattern of traits across months in PF group and the difference of TF vs PF group by month. Cows kept in PF evidenced from June to October a decrease in MY, an increase of fat and PRT content of milk, an improvement of milk coagulation properties and an increase of cheese yield traits, mostly according to a curvilinear (quadratic or cubic) pattern of change consistent with that expected considering the advancement of the stage of lactation. When compared to cows kept in PF, those moved to TF evidenced a greater depression of MY ( $P < 0.01$ ) and BCS, retained also at the return to PF in October, a greater fat and a smaller PRT content in the first two months of summer pasture ( $P < 0.05$ ). Conversely, neither milk coagulation properties nor cheese yield and milk nutrient recovery in curd were affected by temporary summer transhumance, and their pattern of change during the study was very similar for both groups of cows. In conclusion, summer transhumance affected milk yield and composition, but not the cheese making efficiency of milk produced.