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EFFECT OF DIFFERENT FORAGE SPECIES ON NUTRITIONAL AND HEALTH QUALITY OF GOAT CHEESE

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Fat in milk and dairy products represents an important source for assumption of essential fatty acids and vitamins in human diet. A study was carried out to evaluate the effect of herbage species on nutritional indexes (Health Promoting Index - HPI, Thrombogenic index - TI), single fatty acids (ALA, CLA) and Odd-and-Branched-Chain Fatty Acids (OBCFA) in cheese obtained from goats fed fresh *Avena sativa* (AF), *Lolium perenne* (LF), *Hordeum vulgare* (HF), *Medicago sativa* (MF), *Vicia sativa* (VF), *Trifolium incarnatum* (TF), *Lotus corniculatus* (LCF) and silage of *Triticum-secale* (TS). Forty Mediterranean Red goats were allotted into 8 groups, homogeneous for milk production, days of lactation and body condition score. Each trial lasted 15d, 10d for adaptation and 5d of experimental period, during which the goats received *ad libitum* the forage species. During the experimental period, the milk of each group was collected and cumulatively processed in Caciotta cheese (25d ripened) for three times. The Fatty Acids were converted in methyl esters, then separated and quantified by gas chromatography. The statistical analysis of data was carried out by ANOVA, and mean values, expressed in g/100g FA, were compared by Fisher's LSD. Forage species affected ($P < 0.01$) nutritional indexes, ALA, CLA and OBCFA. Cheese from legume groups showed significantly higher values of ALA compared to grass groups: the highest content was detected in the VF diet (1.54) and the lowest in the AF (0.61) and LF (0.51) diets. CLA values significantly decreased from TF to HF, AF and LCF (0.79, 0.70, 0.68 and 0.64 respectively) and reached the lowest value in cheese from goats fed VF diet (0.45). TS, LF and MF showed intermediate values. Significant differences ($P < 0.01$) were also observed for the nutritional indexes. The highest HPI values in grass- and legume groups were observed in cheese from goats fed HF (0.66) and LCF (0.55) diets, respectively. The TI ($P < 0.01$) showed an opposite trend compared to HPI, as expected. The highest and the lowest content of OBCFA ($P < 0.01$) was detected in cheese from goats fed VF(4.04) and AF diets, respectively. The forage species ingested by goats seems to characterize in different way the quality of lipid fraction of Caciotta cheese.

