The Effect of Hemp Seed Oil Supplementation on Fatty Acid Profile in Milk Fat from Dairy Goats

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The aim of the present study was to analyze changes in fatty acid (FA) profile in goat milk as affected by dietary supplementation of hemp seed oil. A total of 12 Carpathian dairy goats was used in the experiment with a 31-d experimental period and 6 goats per treatment. The basal diet comprised 60% alfalfa hay and 40% concentrate. Experimental treatments were control (basal diet without oil supplementation) (C) and the basal diet supplemented with 93 g/d hemp seed oil (HSO). Milk FA profile was determined by gas chromatography. Milk fat content was higher (+32%) in HSO treatment than in C treatment ($P<0.001$). Compared to C treatment, the HSO treatment increased the concentrations of 18:0 ($P<0.10$), *cis*-9,*trans*-11-conjugated linoleic acid (CLA) ($P<0.001$), total polyunsaturated FA (PUFA) ($P<0.001$) and total *cis*-18:1 ($P<0.001$) in milk fat, but decreased 4:0 ($P<0.01$), 12:0 ($P<0.10$), 14:0 ($P<0.10$), 16:0 ($P<0.05$) and total saturated FA (SFA) ($P<0.10$) milk fat levels. These results showed that the supplementation of goats diets with HSO has favorable effects on milk FA profile from the human consumer point of view, by increasing milk nutritional quality.