Influence of a mixture of conjugated linoleic acid on dairy performance, and milk fatty acids composition in mid-lactation goats

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The aims of this work were to study the effects of CLA supplementation (45 g/d) on milk performance and milk fatty acid (FA) composition in diary goats with a diet based on corn silage (35%) and riche on concentrate (30%). The CLA consisted of 2 isomers in equal quantity; 4.5g of C18:2 *cis*-9, *trans*-11 and 4.5g of C18:2*trans*-10, *cis*-12. 12 cannulated and 12 intact multiparous dairy goats in early to mid-lactation were used in a 9 weeks trial with the first 2 weeks for adaptation period and 7 weeks for experimental period. Throughout the experiment, goats were fed corn silage (35%), beet pulp (20%), barley (15%), and the commercial concentrate (30%) and 45g/d of a lipid supplement either CLA or Ca salts of palm oil (Control).

Individual milk production and composition (fat, protein and lactose) was recorded weekly (from week 0 to week9), and milk FA composition was analysed in weeks 1, 5 and 6. All data were evaluated using the MIXED procedure of SAS for repeated measurements. The CLA supplementation with a diet based on corn silage and rich on concentrate had no effect on dry matter intake (DMI), body weight (BW), milk yield, milk protein, and lactose (yield and content). However, it improved the energy balance. In contrast, CLA supplementation decreased significantly milk fat yield and content by 8.4% and 11.8%, respectively. CLA treatment changed milk FA profile such as, the proportion of C16:0-C16:1 decreased by CLA treatment, but the proportion of long-chain FA (>C16:0) increased by this treatment and the sum of cis 18:1 also increased. CLA treatment tended to increase the proportion of t11, t13+t14and t16 isomers of C18:1. The ratios of the FA representing product/substrate for Δ9-desaturase were affected by this treatment in our study.