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The preliminary determination of conjugated linoleic acid isomers in milk of Polish sheep breeds by silver ion liquid chromatography (Ag⁺-HPLC)

Summary

The purpose of the presented study was to determine the content of different CLA isomers' groups including *c9,t11* in sheep milk. The experiment was carried out on three domestic sheep breeds: Polish Merino (MP), Pomeranian Sheep (OP) and Polish Mountain Sheep (POG). The milk samples were collected from 30 ewes (10 for each breed), which were at the age of 3-4 years and at the 4th week of lactation. CLA isomers were detected using silver ion liquid chromatography (Ag⁺-HPLC). The highest content of *c9,t11* CLA isomer was recorded in milk of POG ewes. Milk from MP was characterized by considerable level of the mentioned isomer as well ($P \leq 0.01$) in comparison with OP sheep. In milk fat of POG the total CLA isomers content was the highest ($P \leq 0.01$), but proportion of the main isomer *c9,t11* was higher in MP milk (79% vs. 67,5%). The *tt* and *cc* CLA isomers were higher ($P \leq 0.01$) in POG milk, while *ct/tc* isomers showed the highest value in MP milk. The lowest proportion of all groups of CLA isomers (*cc*, *tt*, *ct/tc*) has been found in OP milk. All groups of CLA isomers, as well as *c9,t11* isomer were positively ($P \leq 0.01$) correlated with fat content in milk. Positive correlations ($P \leq 0.05$) with protein content were determined for *ct/tc* CLA group, *c9,t11* and total CLA isomers.

KEY WORDS: sheep / milk / CLA isomers