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Milk fat as a source of bioactive isomers of linoleic (CLA) and oleic (VA) acids

Summary

In the research the usefulness of milk fat from Red-and-White cows, Polish White Improved goats and sheep of Friesian and Polish Mountain breed was assessed in aspect of its enrichment in bioactive isomers of linoleic (CLA) and oleic (VA) acids. Interspecies research have showed that the most effective was sheep milk fat. It was characterised by the highest content of CLA and VA isomers (2.2% and 5.2%, respectively) and the highest recovery coefficient (9c,11tC18:2/9cC18:1 ratio) – 9.25. The content of CLA and VA in cows' milk fat was 1.0% and 3.1%, respectively, and the recovery coefficient was 4.75. The lowest suitability for the enrichment was characteristic of goats' milk fat that had 0.8% of conjugated dienes of linoleic acid, 0.9% of vaccenic acid and the recovery coefficient of 4.5. The interbreed comparison within the sheep has showed that more isomers of linoleic (CLA) and oleic (VA) acid and the higher recovery coefficient had fat of Polish Mountain Sheep, respectively 2.4%, 5.3% and 10.7 compared to Friesian sheep: 2.0%, 5.1% and 8.0. The better suitability of milk fat, characterised by higher linoleic (CLA) and oleic (VA) acids isomers' content and higher recovery coefficient, for its enrichment in bioactive isomers was confirmed in the study, using crystallization method from urea and extraction with carbon dioxide in supercritical conditions.