

Bronisław Borys, Urszula Kaczor, Henryk Pustkowiak

Effect of rapeseed cake, linseed and vitamin E on fatty acid profile of intramuscular and external fat of lambs

S u m m a r y

The effect of feeding rapeseed cake and linseed and supplementing fattened lambs with vitamin E on the fatty acid profile of external fat (OKR) and intramuscular fat of *m. longissimus lumborum* (SM) was studied. Ram lambs (of Kołuda Sheep and Ile de France x Kołuda Sheep commercial crossbreeds) were fattened to 32-37 kg body weight using compound feeds and supplemental grass hay. The control group (K) received a standard compound feed based on cereal components (50.5%) and rapeseed meal (20%). In the compound feeds for experimental groups, rapeseed meal was replaced with rapeseed cake (23.5%) and linseed (5%) (MRL group), while the MRL+E group was additionally supplemented with vitamin E (Polfamix E, 0.2%). The study showed that compared to external fat, intramuscular fat was characterized by a more beneficial composition of fatty acids and better health quality parameters, which was mainly due to the lower content of saturated acids (SFA) and the higher content of polyunsaturated acids (PUFA), including PUFA *n-3*. Feeding rapeseed cake and linseed to lambs did not affect the total SFA content of the analysed fats, with a favourably higher proportion of stearic acid (C 18:0), particularly in MRL lambs. Fats from MRL and MRL+E lambs contained about twice as much CLA, and supplementation of MRL diet with vitamin E caused a significant increase in total PUFA (by 36%), particularly PUFA *n-3* (by 110%). In relation to the MRL group, supplementation of the oil diet with vitamin E did not have a significant effect on the fatty acid composition of the analysed fats and on health quality parameters. Breed of lambs had no effect on the fatty acid profile of adipose tissue. The results obtained suggest that lamb fat quality can be favourably modified using oil components (rapeseed cake and linseed) in the compound feed and improved by supplementing the diet with vitamin E. When evaluating the results as a whole, it is necessary to account for differences in the fatty acid profile resulting from the location of adipose tissue in the carcass.