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Effects of previous diet and duration of soybean oil supplementation on light lambs carcass composition, meat quality and fatty acid composition

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ABSTRACT

Forty Merino Branco ram lambs were used to study the effects of initial diet and duration of supplementation with a conjugated linoleic acid (CLA) promoting diet, on carcass composition, meat quality and fatty acid composition of intramuscular fat. The experimental period was 6 weeks. The experimental design involved 2 initial diets (commercial concentrate (C); dehydrated lucerne (L)), and 2 finishing periods (2 and 4 weeks) on dehydrated lucerne plus 10% soybean oil (O). Data were analysed as a 2 × 2 factorial arrangement with initial diet and time on finishing (CLA promoting) diet as the main factors. The lambs were randomly assigned to four groups: CCO; COO; LLO; LOO according to the lamb's diet fed in each period.

Lambs initially fed with concentrate showed higher hot carcass weights (11.2 vs 9.6 kg) than lambs fed initially with lucerne. The increase of the duration of finishing period reduced the carcass muscle percentage (57.4% vs 55.5%) and increased the subcutaneous fat percentage (5.67% vs 7.03%). Meat colour was affected by initial diet. Lambs initially fed with concentrate showed a lower proportion of CLA (18:2*cis*-9, *trans*-11 isomer) (0.98% vs 1.38% of total fatty acids) and most of n−3 polyunsaturated fatty acids than lambs initially fed with lucerne. Initial diet did not compromise the response to the CLA-promoting diet and the proportion of 18:2*cis*-9, *trans*-11 in intramuscular fat increased with the duration of time on the CLA-promoting diet (1.02% vs 1.34% of total fatty acids).

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