Influence of slaughter season and muscle type on fatty acid composition, conjugated linoleic acid isomeric distribution and nutritional quality of intramuscular fat in Arouquesa-PDO veal

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Abstract

The effects of the slaughter season and muscle type on lipid and conjugated linoleic acid (CLA) contents, fatty acid composition and isomeric profile of CLA in Arouquesa veal, from calves reared according to the specifications of the protected designation of origin (PDO), were assessed. Arouquesa purebreds calves (n = 31) were raised in a traditional production system, slaughtered in early autumn (October) or late spring (June), and the longissimus dorsi and semimembranosus muscles were sampled for analysis. Arouquesa-PDO veal only showed seasonal differences in the levels of some minor fatty acids (16:1c9, 17:1c9, 18:1t11, 18:3n-3, 20:4n-6 and 22:4n-6) and CLA isomers (11,14, 10,11 and c11,13). Furthermore, significant interactions between the slaughter season and muscle type were obtained for several fatty acids and CLA isomers, total lipids and CLA, and the PUFA/SFA ratio. In both seasons, veal-PDO depicts values of pasture-fed cattle. From a human nutritional perspective, veal-PDO in both slaughter seasons has relatively high CLA contents and percentages of the c9,11 CLA isomer, which is favorable, while the n-6/n-3 ratios are within the recommended values for the human diet. In conclusion, the results suggest that intramuscular fat in Arouquesa-PDO veal has high nutritional value throughout the year.

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