

FUNCTIONAL FATTY ACID COMPOSITION IN FOUR TYPES OF FAT DEPOSITS IN BEEF CARCASSES

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The objective of this study was to determine the functional fatty acid profile in four types of fat deposits in beef carcasses. The experimental materials comprised fat samples collected from the carcasses of 50 crossbred beef bulls produced by mating Polish Holstein Friesian Black-and-White (PHF) cows to Limousine (LM) bulls. The percentage share of 31 fatty acids was determined in fat samples by gas chromatography. The fatty acids were divided into the following categories: SFAs, UFAs, MUFAs, PUFAs, DFAs, OFAs, n-3 and n-6 PUFAs. The following ratios were calculated: UFA/SFA, MUFA/SFA, PUFA/SFA and n-6/n-3 PUFA. It was found that the concentrations of functional fatty acids were determined by the type of fat deposits ($P \leq 0.01$). The lowest CLA levels were found in intramuscular fat, whose content is an important determinant of beef quality. The highest CLA concentrations were reported for subcutaneous fat, and the difference in CLA content between subcutaneous fat and the other three types of fat deposits was statistically significant ($P \leq 0.01$). Subcutaneous fat had the lowest SFA content and the highest concentrations of UFAs, MUFAs and hypercholesterolemic OFAs. Internal fat was characterized by the highest SFA concentrations, and subcutaneous fat had the highest MUFA content. Intramuscular fat was marked by a high percentage share of PUFAs and the highest PUFA/SFA ratio and a desirable n-6/n-3 PUFA ratio.

CONCENTRATION OF FATTY ACIDS IN MILK DEPENDING ON RACE AND LACTATION STAGE

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The last years have provided many results of scientific research on functional food ingredients. These research showed a number of biologically active substances (such as: proteins, peptides, aminoacids, vitamins, enzymes, sterols, phospholipids, fatty acids) that make an effect on transformations inside human body. Among them there are polyunsaturated fatty acids, which deserve more attention because of the documented anticancer, antioxidative and antiatherosclerotic properties. Moreover they have an anti-inflammatory and antibacterial properties, they have beneficial impact on the lowering of blood pressure and growth of organism's immunity.