

COMPARISON OF FATTY ACID COMPOSITION IN DIFFERENT PIG TISSUES

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Abstract. The aim of this study was to characterize the tissue-associated differences in the fatty acid profiles of intramuscular, subcutaneous and hepatic lipids and their quality indices from Lithuanian indigenous wattle pig and wild boar backcross to lean breed. The samples from hybrid pigs (1/4 Lithuanian indigenous wattle, 1/4 wild boar and 1/2 Landrace) were used in the experiment. There was little evidence that the lipids of longissimus muscle from hybrid pigs had a lower content of saturated fatty acids (SFA) and a higher content of monounsaturated fatty acids (MUFA) compared to subcutaneous fat. Hepatic lipids had the highest content of SFA and even 3.4 times higher content of polyunsaturated fatty acids (PUFA) and about treble lower content of MUFA compared to intramuscular and subcutaneous lipids. The principal component analysis (PCA) also unravelled clear differences of fatty acid composition among tissues. Having predominant polyunsaturated fatty acids and favourable PUFA/SFA ratio and superior n-6/n-3 PUFA ratio to that in muscle and subcutaneous tissues, liver could be the PUFA, including n-3 PUFA-rich food in human diets. Atherogenic index (AI) and thrombogenicity index (TI) of liver are lower, and hypocholesterolemic/Hypercholesterolemic ratio (h/H) is desirably higher compared to muscle and subcutaneous fat. The lipid quality indices in the muscle and subcutaneous tissue showed the similar risks and benefits associated with the tissue accordingly to recommended lower fats consumption, as a part of a balanced diet.

Keywords: fatty acids, intramuscular, subcutaneous, hepatic, lipids, pigs.