

Preliminary results of a comparison between 4 pig breeds in chemical composition of fatty tissue and intramuscular fat content

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The purpose of this study was to evaluate the main breeds used in France regarding chemical composition of fatty tissue (leaf fat and backfat) and intramuscular fat content (*Longissimus dorsi*). The study involved 205 pigs from 4 breeds, i.e. two « dual-purpose » breeds (Large-White and French Landrace) and two « heavily-muscled » breeds (Pietrain and Belgian Landrace).

The heavily-muscled pigs, exhibiting low carcass fatness and relatively slow growth rate, gave a fatty tissue with higher water content, and the lipids of this tissue contained more unsaturated fatty acids. This feature was particularly evident in Pietrain pigs whose water content of backfat was on average 16 p. 100 (and even up to 30 p. 100 in some pigs), whereas the average water content did not exceed 12 p. 100 in the other breeds. Backfat with so much water was not suitable for processing. In addition, the *Longissimus dorsi* muscle from lean pigs, especially the Pietrain ones, contained more intramuscular fat than that from the « dual-purpose » breeds : 1.67 and 1.35 p. 100 in Pietrain and Belgian Landrace vs 1.24 and 1.19 in Large-White and French Landrace, respectively. This result can be explained by the lower growth rate exhibited by Pietrain and, to a lesser extent, by Belgian Landrace.

Correlations were calculated between the above chemical characteristics of fatty and muscle tissues on the one hand, carcass fatness and growth rate on the other hand. Water content and degree of unsaturation of fatty tissues in backfat and leaf fat appeared to be negatively correlated with growth rate and carcass fatness, whereas the two latter traits and lipid content of the *Longissimus dorsi* muscle were not correlated to a significant extent.

Influence of cereal feeding (maize, wheat, barley) on backfat composition and organoleptic qualities of dry ham

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Bacon pigs between 25 and 100 kg live weight were fed maize-soyabean, wheat-soyabean or barley-soyabean according to a feeding scheme different for castrated males and females. After slaughter, the fatty acid composition of backfat and subcutaneous fat of hams was analysed. The quality of hams intended to be cooked was tested before processing into dry hams. After a 8-week or 6-month storage they were subjected to a taste panel.

The fatty acid composition of backfat depended on the diet, but was not affected by the sex of the animals. The linoleic acid content of backfat was 10.9 on an average with the maize-based diet versus 6.3 with diets based on wheat and barley. The pH 24 h, the water holding capacity and the reflectance of the adductor muscle were not modified by the diet.

During storage, the weight loss of hams from pigs fed maize diets was lower than that of hams from pigs fed wheat or barley (3.08 - 3.16 and 3.19 kg for fresh hams weighing 8.8 kg).