CS showed higher percentage of fat cuts, except for jowl ($p>.68$) and lower of lean cuts (total fat cuts, 35.06 vs. 27.46% and total lean cuts, 59.43 vs. 66.36% for CS and CS×LW respectively). The greater adiposity of CS was also confirmed by sample cut dissection ($p<.05$) with exception of intermuscular fat ($p>.05$). The chemical traits recorded not significant differences both in Longissimus lumborum (LL) and in Psoas major muscles. As regard physical analysis, cooking loss (21.24 vs. 24.24 % for CS and CS × LW respectively) and WB on cooked meat (100.3 vs. 136.6 N for CS and CS × LW respectively) resulted different in Longissimus lumborum muscle. The fatty acid profile of backfat showed differences for total lipids, MUFA and PUFA content. CS group recorded the highest value of C18:1, influencing thus the whole MUFA family (46.29 vs. 44.98% for CS and CS×LW respectively). PUFA, both n3 and n6, resulted different between groups, with C18:2 ($p<.01$) and C18:3 ($p<.0001$) fatty acids higher in CSxLW group. Among saturated fatty acids, only C12:0, C14:0 and C16:0 resulted higher in CS group ($p<.05$). Crossbreeding is thus a reliable solution to produce meat with desired qualitative characteristics also for Cinta Senese sector.

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Use of FT- NIRS to estimate subcutaneous fatty acid groups in autochthonous European pig breeds

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The amount and proportions of fatty acids determine the degree of unsaturation of the backfat and represent a key factor in the technological quality of processed meat. Among the methods developed for a reliable determination of fatty acid content, near infra-red spectroscopy could provide a rapid and no-destructive characterisation. Nevertheless, the use of backfat of different origins (genotype, gender and live weights) can represent a challenge in the real application of spectroscopy techniques.
The aim of the present study is to evaluate the use of FT-NIRS for predicting the amount of total fat and fatty acid groups (MUFA; PUFA; PUFA 3, 4, 6; SFA) on pig grounded muscles. The research considered 152 fresh samples of backfat collected from 12 European local pig breeds.
For every sample, lipids were extracted from subcutaneous fat and fatty acid profile was determined by a gas chromatograph. Two aliquots of each sample were scanned using FT-NIRS Antaris II model (Thermo Fisher Scientific). Mathematical pre-treatments (MSC, smoothing, 1st and 2nd derivate) were applied and outliers' spectra were identified and removed. The entire set was randomly split into a calibration (80%) and a validation set (20%) in order to have an independent dataset. Partial least square regression on the average spectrum was applied and the chemometric results are evaluated in terms of coefficient of regression and root mean square errors in calibration (R^2-RMSE) and validation (Rp^2-RMSEP).
The best results in terms of accuracy (RMSE) and explained variability (R^2) were obtained for unsaturated fatty acid groups (MUFA, PUFA), their ratio (PUFA/SFA) and PUFA 6. These parameters achieved R^2 higher than 0.96 in calibration and higher than 0.94 in validation showing a high predictability capacity of FT-NIRS. PUFA3 and PUFA 4 appear more difficult to predict by NIRS; in fact, in their equations R^2 is between 0.89 and 0.76. SFA achieved a R^2 of 0.86 that is slightly lower than values reported in other studies probably because of the large variability of genotypes used.
Hence, FT-NIRS is a valid tool to rapidly estimate fatty acid groups in pigs' backfat, whereas single fatty acid content will require greater dataset before having reliable estimates.

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Predicted glycemic index in bakery/ confectionary former food products and in former food based pig diet

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This study evaluated the predicted glycemic index (pGI) in former food products (FFPs), and in two pig compound feeds formulated with or without the inclusion of FFPs. Six samples of FFPs and two pig compound feeds were used. Former food products were based on bakery and confectionary ex-food, while the pig compound feed was formulated by substituting 30% of cereals with