

## Anatomical variation in quality traits of pork

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The anatomical variation in meat quality traits was studied in pigs from various types (Belgian Landrace, French Landrace and Pietrain females (N = 47) and Pietrain males (N = 10) slaughtered in standard conditions) by measuring pH, colour (C) and waterholding capacity (WHC) at different anatomical locations of six muscles (*Adductor*, *Biceps femoris*, *Longissimus dorsi*, *Rectus femoris*, *Semimembranosus*, *Semitendinosus*).

The average value of each trait was different from one muscle to another and the variation between muscles was different according to the trait (larger for C than for WHC or pH). Within each muscle, slight differences were also found between locations of measurement.

The results suggest that the variation of any meat quality trait at a given anatomical level is explained both by the metabolic and functional hierarchy existing among the different muscles and by a specific factor resulting from the animal type (sex and genotype).

The variation observed between the different muscle locations is very different from one animal to another, which suggests that the metabolic hierarchy is variable in pigs and depends upon the animal type.

In order to find out reliable indexes for measuring overall meat quality, the report emphasizes the importance of studying the variation of anatomical origin (along the different levels of each major muscle) using techniques of anatomical topography based on the examination of serial cross-sections of muscles.

## Detection of PSE meats by measurement of the dielectric loss factor

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Measurements of pH, light-scattering index (Mac Dougall's FOP (fibre optic probe)) and dielectric loss factor (MS-Tester) were carried out 40 min, 3 h and 24 h post-mortem on the *Semimembranosus* and *Longissimus dorsi* of 295 commercial pigs. The meat quality index and a subjective score attributed to the ham were also taken into account.

The validity of the dielectric loss factor was assessed by the number of detected PSE (Pale, Soft Exudative) samples characterized by a pH 40 ( $\leq 5.80$  in one or both muscles). These results confirm the interest of measuring the dielectric loss factor three hours post-mortem (60-70 p. 100 PSE cases detected by the MS-Tester). Measurements performed 40 min and 24 h post-mortem are far less reliable. The dielectric loss factor is not correlated with the meat quality index. Its purpose is to detect PSE meats and not to predict the technological quality of meats.

The *Longissimus dorsi* muscle seems to be the most appropriate for the light scatter measurements (FOP) 3 hours post-mortem. The subjective score is well correlated with the meat quality index ( $r = -0.69$ ) and better correlated than the latter to the other variables (except with pH 24). It involves an estimation of both the PSE status and the technological quality.