

The risks of boar taint in fresh pork being very high in the Pietrain, castration should be maintained in this breed. As the optimal slaughter weight may be related to differences in the precocity of tissue development, the application of castration or not depends essentially on the possibilities of using male pig meat.

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### **Influence of hypermuscularity and castration on the anatomical composition of ham in male pigs**

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The influence of both the genetic type (hypermuscularity) and castration on the anatomical composition of the hind limbs of male pigs was studied in Pietrain and Belgian Landrace breeds by considering 17 Pietrain (10 entire males and 7 castrated) and 16 Belgian Landrace pigs (8 entire males and 8 castrated). Statistical analysis of results was entirely based on multivariate analysis; two types of analysis were performed, the analysis of centred data and the  $D^2$  of Mahalanobis.

Both types of analysis gave concordant informations and showed a significant effect of breed and sex.

As regards the overall tissue composition the castrated males were characterized by a higher covering fat percentage. Differences in muscle distribution were small and concerned mainly the anterior crural part.

Within each sexual type there were differences between breeds as for the muscle/bone ratio (higher in Pietrain and thus the most hypermuscled of both types) and the muscle distribution (smaller development of *Rectus femoris* and *Gastrocnemius pars externa* muscles, higher development of *Adductor* muscle in Pietrain).

In male pigs, the muscular hypertrophy did not affect in the same way the Pietrain and Belgian Landrace breeds each one showing different muscle distributions.

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### **Distribution of the Longissimus dorsi muscle in the dorso-lumbar area of the pig**

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The distribution of the mass of Longissimus dorsi muscle (LD) along the backbone was studied in pigs of normal (Large-White and Danish type) and hypertrophied conformation (Pietrain breed). In each conformation group animals with different numbers of thoracic and lumbar vertebrae were considered, i.e. 20 (N = 6) and 21 (N = 7) vertebrae in hypertrophied animals and 21 (N = 9) and 22 (N = 10) vertebrae in normal animals.

At the same carcass weight (half carcass of 35-36 kg) there were highly significant differences in the average linear load of the backbone with LD muscle.

The load was higher in hypertrophied pigs ( $35.5 \text{ g}\cdot\text{cm}^{-1}$ ) than in normal ones ( $26.3 \text{ g}\cdot\text{cm}^{-1}$ ).