

considered, for ADG, as a consequence of group-feeding the two sibs in a common pen and, for meat quality traits, as an effect of the « common slaughter-day environment », as the two sibs were usually slaughtered on the same day. Phenotypic and genetic correlations between ADG and FCR were lower than the usual estimates under individual feeding. The genetic correlations between meat quality and the other traits were low, the highest one being obtained for FCR (0.23 ± 0.16).

A first evaluation of the *Duroc* breed

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The *Duroc* (D) breed was compared to the *Piérain* (P), *Belgian Landrace* (B) and *Hampshire* (H) breeds in terms of their respective merit as sire line of a 3 way-cross involving *French Landrace* × *Large White* dams. Fattening and carcass data were recorded on 573 pigs sired by a number of boars from the 4 breeds (10 P, 15 B, 13 H and 11 D boars) and fed *ad libitum* from 32 to 101 kg liveweight. Means of XP (n = 141), XB (n = 144), XH (n = 140) and XD (n = 148) pigs respectively were (two means with the same superscript are not different at the 5 p. 100 level) : 728^a, 792^b, 845^c and 801^b for average daily gain (g) ; 2.62^a, 2.78^b, 2.95^c and 2.86^{b,c} for daily feed consumption (kg) ; 3.66^a, 3.54^a, 3.51^a and 3.54^a for food conversion ratio (kg feed/kg gain) ; 76.2^a, 76.2^a, 75.5^b and 75.0^b for carcass weight (kg) ; 94.7^a, 98.2^c, 96.3^b and 96.9^b for carcass length (cm) ; 24.5^a, 24.7^a, 25.0^a and 24.4^a for average backfat thickness (mm) ; 53.5^a, 52.9^{ab}, 52.5^{ab} and 52.0^b for estimated lean percentage. In ultimate pH and colour of meat, the XH type differed (p < 0.01) from the three other genetic types which gave similar results in this respect : meat from XH pigs exhibited a lower ultimate pH and a paler colour. The overall economic merit of the pigs from the four 3 way crosses was estimated, taking into account fattening cost and commercial value of the carcass : on this basis, the XB and XH types were similar and both were better than the XD and, to a greater extent, XP types. This first evaluation of the *Duroc* suggests that this breed has not to play a major part as a sire breed or as a component of a crossbred boar for terminal crossing, at least in the present conditions of pig production in France.

Comparative study on the reproductive performance, fattening performance and carcass quality of *Creole* and *Large White* pigs in Guadeloupe

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Reproductive performance of a sample of *Large White* sows imported from France was compared to those of a local breed (*Créoles*).

Age and weight at puberty were 171.4 days and 52.3 kg, respectively for the local breed and 275 days and 107 kg for the *Large White* pig, but no difference was observed between weaning-oestrus and weaning-successful mating.

Litter weight and litter size at birth and at weaning were significantly better in the *Large White* sows.

Maternal abilities of the local sow must be underlined (8.5 p. 100 mortality v 21.3 for the *Large White*) and as a result sow productivity was almost the same for both the *Large White* and the local pig : 13.82 and 14.6 piglets per sow and per year respectively.

Growth and tissue composition results of the progeny of the two breeds were the following :

1) The average daily gain was significantly higher in the *Large White* breed (514 g v 440 for the local pig).

2) The food conversion ratio was higher ($p < 0.01$) in the *Creole* breed (4.03 v 3.33 for the *Large White* pigs).

3) The main characteristics of the carcass quality was a significantly ($p < 0.01$) higher muscle percentage in the *Large White* (46.96 p. 100 v 38.97 for the local pigs).

A good relationship between cut and physical dissection results on the one hand linear and ponderal carcass characteristics on the other hand was observed in both the *Creole* and the *Large White* breed.

Ham weight and growth performance was independent of the body composition.

Utilization of roughage to produce heavy pigs. Interactions between genotype, sex and management system

1. - Growth performance and carcass characteristics

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Growth performance and carcass characteristics of 119 pigs, females and castrated males, were studied using a 2×2 factorial design : two genotypes, *Large White* (LW) and *Corsican* \times *Large White* (C \times LW) crossbred pigs ; two management systems, in pens with an *ad libitum* concentrated diet, and in open-air with a restricted concentrated diet and forage given *ad libitum*. The analysis of variance showed a favourable effect of pen-housing on food conversion ratio (-10 p. 100 compared to pigs in open-air), daily gain ($+20$ p. 100), dressing percentage of carcass ($+2.6$ p. 100), but an unfavourable effect upon carcass characteristics (-24 p. 100 for loin/backfat ratio) more pronounced for castrated males than for females. Growth performance of the crossbred pigs were 4 to 8 p. 100 poorer than those of LW pigs ; the carcasses of LW pigs showed a poorer dressing percentage than those of C \times LW, but a higher meat content ($+36$ p. 100 for loin/backfat ratio); there were no significant genotype \times management interactions, as the responses of the two genotypes to the management systems were similar.

V. - CARCASS AND MEAT QUALITY

The effect of an excess of tryptophan and of rearing conditions on the incidence of boar taint in young *Large White* boars : relationship with male reproductive tract development

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Twenty eight board of the *Large White* breed were reared between 25 and 100 kg live weight according to a 2×2 factorial design : two rearing conditions (with or without