

to the same variety and were introduced at the level of 70 per cent into isonitrogenous diets (20 % CP) offered till the age of 9 weeks. In these conditions, a marked effect was noticed in favour of waxy maize:

Daily mean gain: 470 g (group 2) *versus* 434 g (group 1), i.e. a significant increase of 8 per cent ($P < 0.05$); feed conversion ratio 1.76 (group 2) *versus* 1.84 (group 1) ($P < 0.10$).

Parallel to that an *in vitro* digestibility assay was made with the two types of maize of trial C. The results showed that the breakdown of waxy maize starch was more rapid in the presence of piglet pancreatic juice, a fact suggesting that the energy of this type of maize is more available.

Influence of diet on respiratory quotients and fat deposition in growing pigs

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Short-lasting measurements of gaseous exchanges in total confinement repeated several times during the day were used to study variations in these exchanges and in the respiratory quotient (RQ) during 23 h after meal eating in growing pigs (35-65 kg).

RQ variations showed that lipogenesis took place during the first post eating hours, whatever the protein concentration of the diet, protein free normal or high protein level (25 % DM). In the latter conditions values inferior to 1 (0.85) were observed when lipogenesis was occurring.

Fat deposition W.75 was highly correlated with ingested carbohydrates/W.75 ($r = + 0.99$ $P < 0.01$), and energy efficiency of fat deposition (kf) was 0.76. Any lowering of the carbohydrate supply compensated for by an increase in the protein supply slowed down the lipogenesis in growing pigs.

Ad libitum or restricted feeding of female pigs receiving a maize soya-bean diet in the form of meal or pellet during the growing-finishing period

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Four feeding schedules were studied in female pigs derived from Large White × Landrace dams and Landrace sires. The diets were based on maize and offered either in the form of meal or pellets:

— *feed restriction* during the whole growing period. The feed restriction plan was that usually applied in our previous trials. It was established according to the weight of the animals and involved a maximum supply of 80 kg feed (2.8 kg/day/animal).

— *ad-libitum* feeding until 60 kg live weight followed by a feeding plateau of 2.55 kg/day/animal.

— *ad libitum* feeding until 60 kg live weight then a feeding plateau of 2.8 kg/day/animal.

— *ad libitum* feeding until slaughter.

Considering the overall experimental period, the daily mean intakes regularly increased from the most restricted treatment 1 to the *ad libitum* treatment 4. The values obtained were