

In the second experiment, 4 protein sequences were compared in order to determine whether the protein level during fattening was related to the post-weaning level (interaction?). The four sequences were chosen so as to represent the 4 currently encountered possibilities (high-high, i.e. 22-18 p. 100 crude protein, high-low, 22-15 p. 100, low-high, 18-18 p. 100, low-low, 18-15 p. 100).

Post-weaning protein level had no significant subsequent effect during fattening, either on growth or body composition.

No statistically significant interaction between post-weaning and fattening protein levels was evidenced with the 4 sequences of the second experiment.

Thus, the protein sequence to be chosen should be that supplying optimum growth performance during each period, i.e. 22-18 p. 100. However the farmer (rearer/feeder) manufacturing the feeds himself might prefer to make one only feed. He should then choose sequence 18-18 giving similar results as sequence 22-18.

### **Influence of management system (separation or mixing of sexes) on the performance of castrated male pigs and females**

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Five experiments involving 208 castrated males and 108 females were carried out in order to determine whether the mixing of sexes affects the performance of the animals.

All animals were fed according to the same feeding schedule based upon live weight. Maximum level of restriction was 7 945 kcal D.E./day from 60 kg during 2 experiments and 9 000 kcal D.E./day from 70 kg, during 3 experiments.

Each experiment involved 3-5 replications and each replication involved 4 types of pens; 1 with castrated males, 1 with females and 2 with an equal number of males and females together.

During the first analysis, we compared (for each criterion) the average growth and slaughter performance of males and females kept separately, and those of the group of males and females mixed together. During the second analysis, we measured the effect of mixing upon each sex.

The results of these 5 trials show that the management system did not significantly affect either the growth criterion (growth rate, food conversion ratio) or the carcass traits (dressing percentage, side backfat thickness and grading).

Mixing the animals seemed to favour the growth of castrated males more than that of the females, but this was probably due to the domination of the males at the trough. However, this effect was not very clear as regards the carcass composition of these animals.

### **A comparative study concerning the utilization of pellets of different diameters by the weaned piglet**

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Four different physical forms of post-weaning feeds (1st and 2nd age) were compared : dry flour, pellets of 2.5, 3 and 5 mm diameter.

A total of 348 purebred *Large White* piglets were weaned at 27 days of age at a mean weight of 6.5 kg. During the first 13 days after weaning, they were fed the same 1st age diet as that before weaning (T.C.P. : 21.8 p. 100 - lysine : 1.34 p. 100 - D.E. : 3 418 kcal). Thereafter they received the 2nd age diet for 28 days (T.C.P. : 22.2 p. 100, lysine : 1.16 p. 100, D.E. : 3 211 kcal). The piglets were reared on a flat-deck (metal slatted floor). All diets were given *ad libitum* at the feeder. At the end of the trial the weight of the piglets ranged around 25 kg.

Comparison of flour and pellets showed the superiority of the latter, especially as regards the feed conversion ratio. Pelleting led to a 16 p. 100 reduction of this ratio for the 1st age and 7 p. 100 for the 2nd age.

The size of the pellets showed that :

— during the 1st age (4-6 weeks) the consumption of the small pellet (2-5 mm) exceeded that of the larger one. It led to a marked but non significant improvement of growth rate ;

— during the 2nd age (6-10 weeks) the piglets accepted the 3 types of pellets equally, the levels of intake and growth rates being almost similar.

It may be concluded that apart the 1st age where use of small sized pellets is justified, pellets of larger size may be given to 2nd age piglets. The advantage of the latter pellets is that their manufacturing is less expensive, their quality excellent and the level of performance obtained in the piglets identical to the former one.

### **Comparative utilization of bicalcic phosphate and new tricalcic phosphates by the piglet**

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Two trials were made to compare a control diet supplemented with bicalcic phosphate to two diets supplemented with new tricalcic phosphates. Piglets were distributed into groups at the age of 26 days at a mean weight of 7.5 kg. At the end of the trial the weight of the piglets ranged around 30 kg. The first trial involved 26 animals per treatment in two blocks. The second trial involved 39 animals. The diet was given in the form of flour. Ca and P contents were those recommended by GUEGUEN and PEREZ (1980).

Solubility in 2 p. 100 citric acid was about 90 p. 100 for the tricalcic phosphates according to GUEGUEN's method used for mineral complements

In the first trial growth performances were quite similar for the bicalcic diet and the two tricalcic phosphates (534-534 and 536 g). The lowest feed conversion ratio was obtained with the bicalcic control (2.07) but it was not significantly different from that of the tricalcic phosphates (2.19 and 2.17).

Four piglets per treatment were sacrificed for examination and determination of the bone mineralization. The calcium content of bones was for the bicalcic, the tricalcic M 19, and the tricalcic M 18, 18.9 p. 100, 17.85 p. 100 and 18.24 p. 100, respectively. The phosphorus content was 8.86 p. 100, 8.61 p. 100 and 8.55 p. 100 without significant difference.

In the second trial a control bicalcic phosphate was compared to the tricalcic M 19 of the previous trial and to the new tricalcic M 19-81. Growth performances for the three