Replacement of skim milk powder by soybean meal in the early weaning feeds for piglets

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The purpose of this study was to test the possible advantage of maintaining 10 p. 100 skim-milk powder in piglet diets. Three groups of piglets were fed during the two weeks following weaning a diet without milk, the same diet supplemented with lysine and a diet with milk, respectively, then a second age diet during the two following fortnights. A fourth group received a diet containing 10 p. 100 milk powder for the whole experiment. In every case, 10 kg milk powder replaced 6.5 kg soybean meal and 3.5 kg cereals.

Three successive trials were made on 96 piglets each weaned at the mean age of 32, 25 and 21 days and at the mean weight of 8.7, 7.1, and 6.6 kg.

The *feed intake* did not change significantly from one diet to another whatever the period. However, the discrepancies between the trials were very large in the first two weeks, trial I : 535 g/d ; trial II : 357 g/d ; trial III : 237 g/d and were more closely related to the age ($r = 0.94$) than to the weight at weaning ($r = 0.77$).

The *live weight gains* were comparable between the diets, whatever the period, in trial I (relatively older piglets) and in trial III (young piglets exhibiting a strong self restriction : 36 g/kg of live weight during the « first age »). In trial II, the presence of milk powder in « first age » diets led to higher mean gains (295 g/d versus 224 g/d, $p < 0.01$). However, the diet contained 22.9 p. 100 total crude protein versus 21.4 and 21.7 p. 100, respectively in the milk free diets. Supplementation with lysine led to an intermediate result (248 g/d). These trends were the same at the end of the experiment though the discrepancies were no more significant.

The feed efficiency did not change either with the diet or with the class of initial weight (within trials), but it decreased with the age.

In our experimental conditions (healthy piglets, supplemented feeds...), addition of 10 p. 100 skim-milk powder did not improve significantly the mean-term performance. However, this result has to be confirmed by further studies.

Influence of various amino acid deficiencies on piglet feeding behaviour and performance

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Two experiments were made with weaned piglets weighing 10 kg on an average in order to study the influence on the feeding behaviour and performance of deficiencies in essential amino acids : lysine, methionine, threonine, tryptophan, isoleucine.

Eight diets were used. A control diet, E (15.5 p. 100 crude protein) satisfying the requirements for amino acids ; a diet C (12.5 p. 100 crude protein) with amino acid levels