

Utilization of triticale by weaned piglets and growing-finishing pigs

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Utilization of triticale of the « CLERCAL » type (I.N.R.A. variety) was studied in comparison to that of wheat in diets intended for weaned piglets or bacon pigs. The working hypothesis was that the two cereals are equal in terms of energy.

PIGLET-TRIAL

A total of 396 purebred *Large White* piglets were weaned at 27 days. During 13 days they received only a 1st age diet and thereafter the experimental diets for 28 days. Farm experimental diets were tested : wheat-soybean oil-meal and triticale-soybean oil-meal including 18 and 22 p. 100 crude protein. They were offered *ad libitum* in the form of dry meal. A very marked effect of the protein level, there were only few differences between the two cereals : the intake of triticale slightly exceeded that of wheat (+ 4.7 p. 100) and therefore led to a light improvement of the growth rates (+ 4.3 p. 100). On an average, the feed conversion ratios were identical for the two cereals (wheat : 1.85 - triticale : 1.83).

GROWING-FINISHING PIG TRIAL

The trial was made with 88 bacon pigs (44 castrated males and 44 females) housed in individual pens and fed according to a progressive energy restriction schedule. The animals were fattened from 25 kg live weight and until a slaughter weight of 100 kg. Two experimental diets were tested : wheat-soybean oil-meal and triticale-soybean oil-meal with 18 p. 100 crude protein. With the same levels of feed intake, the two diets led, on an average, to the same growth rates (wheat : 726 g - triticale : 721 g) despite a trend of sex \times diet interaction as the females grew better with triticale than with wheat whereas the contrary was the case for the castrated males.

The feed conversion ratios were identical, on an average, for the two cereals (wheat : 3.09 - triticale : 3.16).

Utilization of triticale by pigs or piglets does not seem to give rise to particular problems ; it is very well consumed and its energy value is very close to that of wheat.

Comparison of various levels and sources of crude fibre to supplement whey in growing-finishing pig diets

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Two experiments were made to study the effect of supplementing large amounts of whey (maximum 16 l/d.) with feed containing increasing proportions of crude fibre, i.e. 3.5, 4.5, 5.5 and 6.5 p. 100, but whose digestible energy content calculated according to Kirchgessner and Schneider (1978) was maintained constant by a supply of fat. The first experiment was made on four batches including four groups of four castrated male pigs and females with a live weight of 25 kg. The mean whey dry matter content was 24, then 38 p. 100 of the

total dry matter of the growing-finishing diet. No significant difference was observed between the different groups in growth performance or mean carcass composition. In a second experiment made in metabolism crates, two extreme crude fibre contents were tested. It was confirmed that the digestible energy contents of the complete diets were similar i.e. 3 790 and 3 700 kcal/kg D.M. The apparent digestibility of energy and protein decreased by 2.3 and 2.7 points per point of increase in the crude fibre content, while that of fat did not change and that of the parietal components tended to increase. In this trial the digestible energy value of whey was estimated to be 3 490 kcal/kg D.M.

Under the same feeding conditions we thereafter compared dried grass to whole maize flour, oats chaff and apple distiller's residues (all exhibiting a high crude fibre content, i.e. 6 p. 100). Four groups of 12 piglets (24 kg live weight) kept in individual pens were used. In the growing as in the finishing period dried grass and apple distiller's residues led to significantly better results than the other two crude fibre sources, but there was no significant difference in the carcass composition of the four groups. Differences in the growth performance may be related to the much higher hemicellulose contents of whole maize flour and oats chaff. These results show that the extrapolation of Kirchgessner and Schneider's equation to other sources of crude fibre than that of cereals for which it had been calculated, may lead to erroneous results. In practice, grass flour and apple distiller's residues seem to be good sources of crude fibre to supplement whey in growing-finishing pig diets.

Restricted supply of a feed supplement and *ad libitum* feeding of maize or barley Influence of various factors

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Ninety-six individually housed and fed female pigs weighing 20 kg, were used in this experiment.

The animals were offered maize (M) or barley (B) *ad libitum*. In each case they received a restricted feed supplement containing soybean meal (S) or soybean meal supplemented with lysine (SL). This feed was offered according to two modalities : either once a day (rhythm A) or in double quantity, once every two days (rhythm B). The experiment involved two groups of animals and two periods, the first one from January to June, the second one from July to December.

All parameters (feed intake - growth rate - feed efficiency - body composition) were affected by the kind of cereal used. The consumption of barley exceeded by 15 p. 100, on an average, that of maize. The pigs fed on maize showed a better feed conversion ratio, but they were fatter.

The performance were almost similar in the pigs receiving feed supplement S or SL (the lysine supply of which was comparable).

The feeding rhythm (A or B) of this feed supplement did not affect the results. Opposite to that, the period of the year had an influence as revealed by the different results of the two experimental series. Thus, pigs fattened mainly in the Summer consumed less cereal (and therefore energy) and exhibited a lower growth-rate and leaner carcasses.