

— a coarse grinding with recycling of the largest particles on the hammer-mill only led to a very small decrease in the digestibility of the main components of the diet. It had a slightly favourable effect on nitrogen retention as compared with fine grinding. This latter treatment caused gastric abnormalities (parakeratosis and ulcers) in the pigs;

— a distribution of the coarsest meal in our assay into two more homogenous fractions, « fine » and « coarse », was not of any special interest for pig feeding.

### **Combined utilization of maize and peas in bacon pig feeding : Influence of the incorporation level, the physical form and the variety**

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The experiments made in France the last few years to determine the utilization conditions of protein-rich peas in bacon pig feeding (PEREZ, LEUILLET, BOURDON, 1979) led to recommend a level of incorporation of 15 p. 100. However, with the variety « Frimas » and with feeds in the form of meal, it was shown that peas could be associated with maize at a higher level without changing the pig performance. To carry on this work we made three trials including 272 pigs subjected to individual controls :

In the first trial winter peas « Frimas » were incorporated into the diet at the level of 0, 12, 24 and 36 p. 100. It was confirmed that peas could be associated with maize up to the high level of 24 p. 100 without affecting the performance. At the level of 36 p. 100 the deterioration of growth and feed efficiency reached 5 p. 100 over the whole fattening period ; this effect was more marked in the growing than in the finishing period.

In the second trial where peas of the variety « Frimas » were incorporated into the diet at the level of 0 or 36 p. 100, the pelleting of the peas did not reduce the decrease in the performance while it improved by 6 p. 100 the results of the control feed.

The third trial pointed out the large differences between varieties in favour of the spring variety. Utilization of the latter allowed to replace 60 p. 100 of the supplementary soybean meal in a diet based on maize without modifying the results.

The lower efficiency of the feed including a high level of « Frimas » did not seem to be due to the tryptophan content of the diets concerned. The minimum content of 0.15 p. 100 of this amino acid generally considered as sufficient was always maintained in the feed substitutes.

However, let us mention the two to three times higher contents of antitrypsin factors in the « Frimas » group as compared to the spring varieties. A better knowledge of these factors and of their causes of variation might allow to determine the present limits of utilization of the protein rich peas in association with maize in bacon pig feeding.