

**Utilization of horse beans
by growing finishing pigs after tryptophan supplementation**

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Utilization of whole horse-beans in growing-finishing pig diets was studied in two experiments including respectively 48 animals in collective pens (2 treatments) and 84 animals in individual pens (7 treatments). The aim of these experiments realized between 20 and 100 kg live weight was to examine the interest of supplementing a diet based on maize with free tryptophan in presence of niacin or not, in the case of partial or almost total replacement of soyabean meal by horse-beans.

For the growing period, the results obtained showed that introduction of 15 or 30 p. 100 horse-beans into the diet caused a decrease in the daily mean gain of 2 and 6 p. 100, respectively, while the feed conversion ratio increased by 3 and 9 p. 100.

Tryptophan supplementation (0.03 p. 100 during the growing period, 0.02 p. 100 during the finishing period) at the highest level of horse-bean incorporation (30 p. 100) in a diet containing 0.13 p. 100 tryptophan during growth and 0.11 p. 100 during finishing, brought about an improvement of growth rate and feed efficiency of 6-7 p. 100, particularly marked when niacin was absent from the mixture of vitamins, whereas the carcasses tended to be leaner. The performances obtained only slightly differed from those recorded with the control diet (maize + soyabean meal). At the level of 15 p. 100 horse beans, the supply of supplementary tryptophan (0.02 p. 100), over 0.16 p. 100 during growth, only caused a slightly favourable but non significant effect (2 p. 100) and only in the females.

Variation in the blood level of free amino acids (accumulation of lysine and threonine relatively to the sum of essential amino acids, in presence of tryptophan deficiency) confirms, to a great extent, the results observed on growth and feed efficiency.

In conclusion, supplementation of horse beans with tryptophan in growing pig diets contributes to removing some of the difficulties arising from a massive incorporation of this legume into the diet. Owing to this it is possible to replace almost all soyabean proteins by horse bean proteins, at an incorporation level of 30 p. 100.

**Comparative study concerning the use of peas
and horse-beans by growing pigs**

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This study was made on growing finishing pigs in order to compare the use of a productive variety of winter peas, A 86, (24.2 p. 100 crude protein in dry matter) and that of variety of horse-beans, ASCOTT, (28.9 p. 100 crude protein in dry matter), as supplementary source