

**Total replacement of soybean oil-meal in growing pig diets :
Use of peas supplemented with tryptophan
or combined with a lucerne protein concentrate**

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Many studies carried out in France the last few years have shown that incorporation of large amounts of peas (30 p. 100 and more) in growing pig diets generally leads to a lower performance.

Two successive experiments were made with 48 and 60 fattening pigs, respectively, kept in individual pens and with a live weight of 25-28 to 100 kg, in order to study :

— the possibilities of incorporating a very high level of peas (40 p. 100) as only source of supplementary protein to simplified diets based on maize (trials 1 and 2) ;

— the effects of L-tryptophan supplementation of diets based on peas : 0.03 p. 100 during the growing period only (trial 1) or 0.05 p. 100 during the whole fattening period (trial 2) ;

— combinations of peas (30 or 40 p. 100) with a lucerne protein concentrate (10 or 5 p. 100) used as natural source of tryptophan (trial 2).

As compared to control diets (maize-soybean oil-meal), the utilization of peas (winter variety *Frisson*) as only protein supplement led in both trials to a marked decline in the performance of the animals, especially during the growing period (— 15 p. 100 for feed intake and — 40 p. 100 for weight gain). Addition of tryptophan allowed to restore almost totally the level of feed intake and considerably improved the growth rate and feed efficiency. Thus, in trial 2 with diets (maize-peas) rebalanced with tryptophan during the whole growing period, performances were only 6 p. 100 lower than those of the control group (non significant difference). In the same way, the combination of peas and PX₁ without soybean oil-meal led to performances equivalent to those obtained with maize-peas diets supplemented with tryptophan over the whole period (28-100 kg) and even identical to those of the control group during the finishing period.

Results of both trials clearly indicate the role of tryptophan as first limiting factor in diets containing a high proportion of peas and point out the possibilities of using several protein sources of metropolitan origin to totally replace soybean in growing pig diets.

**Energy and protein value of French low glucosinolate
dehulled rapeseed oil-meal in pigs
Comparison with a normal commercial rapeseed oil-meal**

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A digestibility trial was made to estimate the energy and protein value of 3 types of rapeseed oil-meals exhibiting the following characteristics (expressed in percent of dry matter) :