



## Energy and protein value of a lucerne protein concentrate " PX1 " – Utilization by the growing-finishing pig

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In the *second series of trials* (300 piglets) incorporation of 30 p. 100 peas into diets based on maize increased the variations observed in the first series: feed intake (— 15 p. 100), growth rate (— 20 p. 100), feed conversion ratio (+ 7 p. 100). On the other hand, incorporation of a large proportion of peas into diets based on wheat led to a slightly unfavourable effect during the first age period but the performance were the same over the whole experimental period (2p. 100 difference).

In conclusion, peas can be used in 2nd-age diets for piglets (from 6 weeks of age) at the moderate level of 15-20 p. 100 as a partial substitute for soybean meal, provided that the cereal fraction is not only composed of maize. In younger piglets, between 3 and 6 weeks, further studies are necessary to determine the maximum level of incorporation.

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### **Energy and protein value of a lucerne protein concentrate « PX<sub>1</sub> » — Utilization by the growing-finishing pig**

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A *first digestibility* study was made in growing pigs by direct measurement according to the substitution method in order to assess the energy and protein value of a lucerne protein concentrate (PX<sub>1</sub>).

The trial involved 12 Large White castrated male pigs with a live weight of 46.4 kg distributed into 3 groups of 4 pigs. The value of PX<sub>1</sub> was measured at two incorporation levels (10 and 20 p. 100) as compared with a diet based on wheat only. Pigs were subjected to a 10 days faeces and urine collection period.

On the basis of the results obtained we calculated a mean value for each level of incorporation of PX<sub>1</sub>.

The digestible energy and metabolisable energy values (Kcal/Kg dry matter) were 3 863-3 703 for wheat, 3 735-3 322 for PX<sub>1</sub>, respectively corresponding to an apparent digestibility coefficient of energy and nitrogen of 87.3 — 87.0 for wheat; 72.7 — 89.3 for PX<sub>1</sub>, respectively.

A *second study* including 60 pigs distributed into 5 groups of 12 animals (6 castrated males and 6 females) per diet was between 25 and 100 kg live weight and allowed us to determine more accurately the possibilities of replacing partially or totally soybean meal by PX<sub>1</sub> in a diet based on wheat (group 2 to 4) or maize (group 5) as compared with a control diet: wheat — 20 p. 100 soybean meal (group 1).

In our experimental conditions, lucerne proteins (PX<sub>1</sub>) incorporated in a proportion of 10 p. 100 (group 2) or 20 p. 100 (group 3) into a simplified diet based on wheat and replacing partially or totally soybean led to performance similar to those obtained with the control diet based on wheat and containing 20 p. 100 soybean meal.

It was even possible (group 4) from 25 to 40 kg live weight by combining wheat with only 10 p. 100 PX<sub>1</sub>, 5 p. 100 soybean meal plus a lysine supplement and from 40 to 100 kg live weight 10 p. 100 PX<sub>1</sub> plus a lysine supplement to obtain the same performance than those recorded with the control diet.

The association maize — 20 p. 100 PX<sub>1</sub> gave excellent performances but required a supplementation of 0.03 p. 100 tryptophan.

Despite a poorer energy value, the lucerne protein concentrate (PX<sub>1</sub>) is a source of protein equivalent to soybean meal 50 for fattening pigs.

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