

II. — SOW AND PIGLET NUTRITION

Comparative utilization of horse-bean and soybean oil-meal by lactating sows

I. — ZOOTECHNIC RESULTS AND BALANCE STUDIES

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Total substitution of soybean oil-meal by whole horse-bean in diets offered to multiparous sows during lactation, was studied. Two groups of 5 females were placed in metabolism crates during 5 weeks of lactation and subjected to total excreta collectings during 5 periods of 5 days each. The animals received a diet based on barley, supplemented with protein either in form of soyabean oil-meal (« soybean » group) or horse-bean of the variety « Pavane » (« horse-bean » group), with addition of DL methionine. The two diets were isonitrogenous and isoenergetic (3 500 kcal digestible energy/kg dry matter), the restriction level being 5 kg/day. In addition to the daily measurements of the balances, the milk yield and total milk composition were estimated at different stages of lactation.

The zootechnic results did not reveal any difference between the two groups of sows : the litters being equalized at birth, the number of weaned piglets (8.8) and their mean weights at different stages of lactation were identical. This was also the case for milk production, total milk composition and production of nutrients in the milk. The apparent digestibility of energetic nutrients and more particularly of crude protein, tended to be higher for the « soyabean » diet, as compared to the « horse-bean » diet, because of the lower crude fibre content in the former.

However, the nitrogen balances did not show any other difference : the nitrogen retention coefficient and the amount of nitrogen produced in the milk were similar for the two groups.

The results being convergent, the utilization of whole horse-bean supplemented with DL-methionine as sole protein concentrate in the feeding of lactating sows appears to be possible. Furthermore, the obtention of zero nitrogen balances during lactation, for a daily supply of 700 g of protein, is in favour of a reduction of protein standards and an increase of energy supply during this period. Under the experimental conditions, the conversion rate of dietary protein into milk protein represented 47 ± 2 p. 100.