

SUMMARY

FEEDING VALUE OF BARLEY IN DIETS
OF PIGLETS WEANED AT 21 DAYS

Barley is well accepted by piglets weaned at 35 days and we previously demonstrated that it improves health of the animals reducing the frequency of diarrhoea.

The aim of the present study was to compare the feeding value of 3 types of barley (naked barley, malted barley, normal barley) in the early weaning diets (21 days) of 60 piglets reared on the floor in pens and of 12 piglets kept in digestibility crates.

Before the experiment (table 1) we determined the level of cell wall constituents in the barley samples : the lowest level of components, determined by the acid detergent (ADF) and the highest starch content was found in naked barley. It was shown that pelleting of the feed had a favourable effect on the *in vitro* breakdown of starch by the pancreatic fluid of piglets.

The performances of the animals showed that barley was well accepted by piglets weaned at 21 days, but that naked barley and malted barley did not significantly improve the growth rate of the animals. On the other hand, naked barley improved the feed efficiency of the diet by about 3 per cent compared to the control. In agreement with the previous results, the mean digestibility of the crude energy of the feed was improved in diets containing naked barley (89.0 per cent versus 84.6 per cent for normal barley).

Conclusions are drawn as regards feeding scales of piglets weaned at 21 days and variation with age (fig. 2) of the feed efficiency is emphasized. Finally, the results clearly show pelleting modifies the barley starch and that malting does not improve the utilization of the feed. On the other hand, naked barley is well accepted by the animal and its energy value exceeds that of normal barley by about 4.5 per cent.

**EFFET DE LA CUISSON ET DU BROYAGE SUR L'EFFICACITÉ
NUTRITIVE DE L'ORGE MÛRE CHEZ LE PORC EN CROISSANCE**

J. DELORT-LAVAL

*Laboratoire de Recherches sur la Conservation et l'Efficacité des Aliments,
Centre national de Recherches zootechniques, I. N. R. A.,
78350 Jouy en Josas*

RÉSUMÉ

L'efficacité de l'orge pour le porc en croissance dépend de sa forme de présentation (farine fine ou grossière), de son traitement technologique et de la qualité de sa complémentation azotée.

Des bilans d'azote et de matière sèche sur porcs en croissance montrent que :

— Le traitement technologique (trempage de la céréale, ensuite séchée à l'air chaud) a pour effet de réduire la rétention azotée ; cette observation est en accord avec la moindre teneur en lysine totale et disponible de ces produits. Une complémentation de l'orge par un régime riche en lysine permet de remédier entièrement à cette insuffisance.

— Le broyage grossier (diamètre moyen des particules 0,9-1,12 mm contre 0,39-0,47 mm)

entraîne une réduction significative de l'utilisation digestive de la matière organique, de l'azote et de la cellulose, alors que celle de l'extractif non azoté est peu affectée. Mais la rétention d'azote est améliorée par un broyage limité et l'efficacité azotée globale (N retenu/N ingéré) de l'orge est finalement la même.

L'association d'un broyage grossier à un système de recyclage des grains non broyés (blutage) présente un intérêt technique et économique que le praticien ne saurait négliger.

SUMMARY

EFFECT OF GRINDING AND HEAT TREATMENT ON THE NUTRITIONAL VALUE OF MATURE BARLEY GRAIN FOR GROWING PIGS

The nutritive value of barley for the growing pig depends on its fineness of grinding, technological treatment and on the quality of the complementary source of dietary protein.

Nitrogen balances and digestibility measurement of dry matter components on growing pigs (30-60 kg) show that :

— The technological treatment (soaking of the grain and hot-air drying) is followed by a decrease of nitrogen retention. This corresponds to the lower content of total and available lysine in the grain, and can be completely overcome by a liberal supplement of a lysine-rich protein source.

— By coarse grinding (average size of particles : 0.9-1.2 mm against 0.39-0.47) digestibility of organic matter, crude fiber and nitrogen is significantly reduced, but that of N-free extract remains unchanged. However, in this case, nitrogen retention of higher and the protein efficiency (retained N/N intake) is finally the same for coarsely and finely ground barley.

The coarse grinding, together with a recycling system of unground grains, offer to the feed manufacturer technical and economical possibilities which must be considered.

RATIONNEMENT PROGRESSIF DE PORCS RECEVANT DES RÉGIMES MAÏS+SOJA

J. MOAL, A. GAYE et B. DESMOULIN

*Association générale des Producteurs de Maïs,
64 - Pau*

*Station de Recherche sur l'Élevage des Porcs,
Centre national de Recherches zootechniques, I. N. R. A.,
78350 Jouy en Josas*

RÉSUMÉ

Quarante-huit mâles castrés et 48 femelles sont placés par groupe de 4, sexes séparés, dans des loges cimentées sans paille. Ils reçoivent un régime unique (maïs : 71 ; soja cuit « 50 » : 26 ; CMV : 3, matières azotées brutes : 18 p. 100 ; kcal. digestibles/kg : 3 350) distribué en farine