

GRAIN LEGUMES FOR PIGS

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Many new legume varieties are being grown to meet an expanding culinary market. As with other crops however, a highly variable portion is becoming available as stock food. Research is being done to assess the nutritive value of these legume grains for pigs by examining three fundamental aspects.

(i)Toxicity The raw legume seeds are milled, formulated into balanced diets and screened for antinutritional factors by feeding to laboratory rats.

(ii)Processing Six methods of processing have been evaluated. Autoclaving at 126 °C for 15 min was universally effective. Extrusion was also effective but requires careful monitoring and manipulation of the extrusate. Boiling was successful in removing toxins but creates a product that is difficult to handle. Dry roasting works with high oil content seeds such as soya-bean but not low fat beans. Flaking and pelleting were not efficacious.

(iii)Nutritional evaluation Providing treatment is adequate the nutritive value depends on the grain's chemical composition. All legumes tested had similar amino acid profiles; there were however differences in protein content.

In formulating balanced diets the inclusion rate of different culinary legumes will be governed by the generally higher fibre content of these grains and the need to meet specific dietary energy levels.

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SOME ASPECTS OF BOAR SELECTION

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Significant improvements in the reproductive efficiency of breeding herds may be achieved by changes in boar selection and management. Reproductive performance largely depends on environmental conditions, health and genetic potential of the sows and boars. Tomes and Nielsen (1982) have reported big differences in conception rate and litter size when individual boars have been evaluated. These differences often exceed 23% and 2 piglets/litter.

Selection for reproductive performance is restricted by the absence of measures to determine the relative merits of potential sires. Testis growth and plasma LH concentration have been used in sheep and cattle but no suitable technique is available to pig breeders.

In this study a new technique designed to measure the scrotal size and its effect on subsequent reproductive performance has been tested. The scrotum was outlined and photographed over a graded perspex plate. Selected boars have been used in a breeding study involving 48 boars over the period of 5 years.

The results clearly indicate a positive relationship between the scrotal area at selection (approx. 85kg liveweight) and subsequent reproductive performance ( $r=0.68$ ,  $P<0.01$ ). Boars with scrotal measurements under 150 cm<sup>2</sup> sired litters averaging 8.36 pigs (primiparous dams) and 11.76 pigs (multiparous dams) while those with scrotal area in excess of 200 cm<sup>2</sup> sired significantly larger litters (10.68 and 12.44 pigs, respectively).

Tomes, G.J. and Nielsen, H.E. (1982). Control of Pig Reproduction. Butterworths:704

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