

Document title

Triticale (*Tritico secale*) as substitute for maize in pig diets

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Abstract

An experiment was conducted to quantify the effect of the inclusion of triticale (cv. Usgen 19) in the diets of pigs, on certain metabolism and production parameters. Three diets were formulated on an iso-nutrient basis (approximately 13.9 MJ kg⁻¹ dry matter (DM) metabolizable energy, 17.2% crude protein, 1.00% lysine, 0.69% methionine and cystine and 0.23% tryptophan on a DM basis) so that maize meal was substituted by increasing levels of triticale meal (0%, 33% and 67%). In a metabolism and nitrogen (N) balance study with 18 SA Landrace × Great White boars, DM digestibility, apparent N digestibility, digestible energy (DE) and metabolizable energy (ME) contents were largely independent of the substitution of maize by triticale. Apparent N retention tended ($P \leq 0.09$) to be better on the triticale-containing diets. The diets were evaluated according to a 2 (sex) × 3 (diet) factorial arrangement of treatments in terms of dry matter intake (DMI), average daily gain (ADG) and feed conversion ratio (FCR), in a growth study with 13 SA Landrace X Large White pigs per diet. Mean ($\pm$ SE) initial live mass of the pigs was 23.4 $\pm$ 0.3 kg. Pigs were fed ad libitum. The experiment ended when the pigs were slaughtered at a live mass of 90.6 $\pm$ 0.2 kg, and carcass characteristics were determined. Daily DMI of pigs decreased linearly ($P \leq 0.01$) by 198 (SE_b=71) g day⁻¹ per unit substitution of maize by triticale. Daily gain was similarly affected, with a corresponding linear ($P \leq 0.01$) decline of 95 (SE_b=34 g day⁻¹). The substitution of maize with triticale up to 67% did not affect FCR significantly ; the mean FCR was 2.72 kg DMI required per kg live mass gain. Mean dressing percentage, eye muscle area or back fat thickness did not differ significantly between diets (means of 80. 5%, 38.8 cm² and 17.6 mm), although pigs on the 100% maize diet tended ($P \leq 0.07$) to have thicker back fat than pigs on the triticale diets. Efficiency was thus largely unaffected by the substitution of maize by triticale. Triticale may therefore be used to substitute maize up to 67% provided that the lower DMI and resultant poorer growth rate is taken into consideration.

Journal Title

Animal feed science and technology ISSN 0377-8401 CODEN AFSTDH

Source

1995, vol. 53, n°3-4, pp. 345-352 (22 ref.)

Editeur / Publisher

Elsevier, Amsterdam, PAYS-BAS (1976) (Revue)

Keywords

Energy metabolism ; Triticale flour ; Triticosecale ; Pig ; Farming animal ; Diet ; Digestibility ; Nutritive value ; Nitrogen balance ; Cereal crop ; Gramineae ; Monocotyledones ; Angiospermae ; Spermatophyta ; Artiodactyla ; Ungulata ; Mammalia ; Vertebrata ; Feeding ;