

**FIELD PEAS (*PISUM SATIVUM*) AS ALTERNATIVE
PROTEIN SOURCE IN DIETS OF GROWING-
FINISHING PIGS.**

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ABSTRACT

The fieldpea (*Pisum Sativum*) cultivar Glenroy [178 g kg⁻¹ crude protein (CP)] was evaluated as an alternative protein source in diets of grower-finisher pigs. Four diets were formulated on iso-nutrient basis [approximately 14.4 MJ kg⁻¹ digestible energy (DE), 160 g kg⁻¹ CP, 9.3 g kg⁻¹ lysine, 5.3 g kg⁻¹ methionine and cystine, 2.1 g kg⁻¹ tryptophan] so that soybean oil-cake meal and maize meal were substituted by increasing levels of fieldpeas (16%, 32%, 48% and 64%). Pigs (40 male castrates) were individually housed in flatdeck-type cages (1.5 x 1 m) with solid floors, fitted with self-feeders, and equipped with an automatic water nipple. Pigs were fed *ad libitum* from 21.7 kg to 81.3 kg body weight, whereafter pigs were slaughtered and carcass characteristics determined. In the digestion and metabolism trial the four grower-finisher diets were evaluated for energy and nitrogen (N) metabolism data. The DE content of the 64% diet was significantly lower than that of the 16% and 32% pea diets. Apparent N-retention, and N-retention as a percentage of N-intake, were lower ($p \leq 0.05$) in the 64% peas diet than in the 16% and 32% pea diet. No differences between diets occurred in apparent N digestibility. Performance data revealed a significant reduction in feed intake with the 64% pea diet, compared to the other diets. The inclusion of peas up to 48% in the diets had no significant effect on FCR and live-weight gain. Regression analysis revealed a quadratic response in which the optimal inclusion level for maximum live weight gain was at the 32% inclusion level. In the 64% pea diet, P2 backfat thickness was significantly lower than in 16% and 32% pea diets. It was concluded that the inclusion of up to 32% of the field pea cultivar Glenroy in the diets of growing pigs will support maximum intake and growth rate levels, while inclusion rates of up to 48% of the diets will not significantly affect feed conversion.

Keywords: Pig; field peas; protein source