

Growth performance and carcass characteristics of growing – finishing hogs fed zero-tannin fababeans, field pea or soybean meal as protein sources

Chathurika K. Gunawardena¹, Wayne Robertson², Malachy Young³, Ruurd T. Zijlstra¹ and Eduardo Beltranena^{1,4}

¹University of Alberta, Edmonton, AB, ²Agriculture and Agri-Food Canada, Lacombe, AB

³Gowans Feed Consulting, Wainwright, AB, ⁴Alberta Agriculture, Food and Rural

Development, 7000 – 113 St., Edmonton, AB T6H 5T6; **Email:** eduardo.beltranena@gov.ab.ca

We have previously replaced imported soybean meal (SBM) with zero-tannin (ZT) fababeans (up to 30%) in hog diets, but found reduced weight gain in barrows but not gilts for the grower but not the finisher period or overall. Gilts but not barrows also showed reduced carcass lean and index. No comparison to field pea, the locally grown feed pulse standard, was made.

In the present study, we therefore utilized nearly 1000 Fast™ crossbred pigs to compare ZT fababeans to locally-grown field pea, imported SBM or 50% ZT fababeans and 50% SBM as dietary protein sources on growth performance (30 to 118 kg) and carcass characteristics of barrows and gilts. The four-phase, wheat-based diets provided 2.45, 2.45, 2.40 and 2.35 Mcal NE/kg and 4.0, 3.6, 3.2, 2.7 g SID Lys per Mcal NE, respectively. Diets were randomly allocated to pens of 21 barrows or gilts within six blocks of eight pens.

Performance variables such as daily weight gain (1.02 kg/d), daily feed disappearance (2.68 kg/d), feed:gain (2.70) and carcass variables such as warm carcass weight (94.5 kg), backfat (20.5 mm) and loin (65.2 mm) depth were similar among diets. Barrows consumed more feed (238 g/d), grew faster (53 g/d), and had poorer feed conversion (121 g/g) compared to gilts. Gilts had greater loin (2.62 mm) and lower fat (2.19 mm) depth (Destron Grading probe).

Implications: These results indicate that locally grown ZT fababeans can fully or partially replace field pea or imported soybean meal as dietary supplemental protein source without negative effects on hog performance and carcass characteristics.