

Zero-tannin faba bean nutrient assessment and swine performance trials for Alberta

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Two trials were conducted at the Prairie Swine Centre to establish a value for Zero Tannin Faba Beans (ZTFB). In the first trial 12 barrows were used to determine total tract digestible energy and apparent ileal digestible amino acids. The ZTFB contained (as fed) 27.5% CP, 1.75% lysine, 0.88% threonine, 0.21% methionine, 9.6% ADF, 19.8% NDF, and 1.0% tannins. Pigs were fed a 96% ZTFB diet to determine energy and a 62% ZTFB diet with cornstarch to determine AA (amino acid) digestibility. After 6 days of acclimation, diets were fed twice daily. Feces and ileal digesta were collected for two days. Ileal energy digestibility was 60.2% and total tract energy digestibility was 88.5%. Ileal DE was 2,362 Kcal/kg and total tract DE was 3,471 Kcal/Kg. Apparent ileal digestibility was 85.9%, 76.1% and 74.1% and standardized AA content was 1.54%, 0.70% and 0.16% (as fed) for lysine, threonine and methionine respectively.

In the second trial 100 pigs were fed either ZTFB or Soybean meal based diets. Pigs were split sexed with 5 pigs per pen. Diets were formulated to equal Net Energy (NE) and Standardized ileal digestible AA (SID). From 30 to 115 Kg, Average Daily Feed Intake (ADFI) was 2.58 Kg /d for ZTFB and 2.56 Kg/d for Soy. Average Daily Gain (ADG) was .96 Kg/d for ZTFB and 0.98 Kg/d for Soy. These differences were not significant. There were no significant differences in back fat between ZTFB and Soy diets at slaughter. MM lean was significantly higher for pigs fed Soy vs ZTFB (P<0.10); 60.3 vs 64.8 mm).

Implications:

ZTFB are an excellent protein source and alternative to other proteins being fed to pigs. ZTFB are very palatable and are at least as good as peas. ZTFB are a long season crop that stays standing and produces twice the nitrogen, for the soil, (as a legume) as peas. More research needs to be done on ZTFB for pigs but this first trial shows them to be an excellent pig feed.