

The nutritional value of expeller-pressed canola meal for grower-finisher pigs

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Expeller-pressed canola meal (EPCM) contains more residual oil than solvent-extracted canola meal. The EPCM might be an attractive feedstuff for swine, but has been poorly characterized nutritionally.

In Exp.1, 6 ileal-cannulated barrows (36 kg BW) were fed twice daily at 3 x maintenance either a 44% EPCM or N-free diet to measure energy and AA digestibility and calculate standardized ileal digestible (SID) AA and NE content. In 10-d periods with 5-d diet adaptation, 2-d feces collection, and 3-d digesta collection, 6 observations per diet were obtained. The EPCM contained (in DM) 38.5% CP, 13.3% ether extract, 2.24% Lys, 1.54% Thr, and 0.71% Met. Apparent total tract energy digestibility was 75.0% and DE and NE content were 3.77 and 2.55 Mcal/kg (in DM), respectively. The SID AA content (in DM) was 1.77% Lys, 1.09% Thr, and 0.52% Met.

In Exp. 2, 880 pigs (25 kg BW) housed in 40 pens were fed 4 dietary regimes with 0, 7.5, 15, and 22.5% EPCM, formulated to equal SID Lys:NE content during 4 growth phases (g/Mcal; 4.04, d 0 to 25, 3.63, d 26 to 50, 3.23, d 51 to 77, 2.83, d 78 to 113). For d 51 to 90, 22.5% EPCM was reduced to 18% due to decreased ADFI earlier. Overall (d 0 to 90), increasing dietary EPCM quadratically decreased ($P < 0.001$) ADG and ADFI and quadratically increased ($P < 0.01$) G:F. For 0 and 15% EPCM, respectively, ADG was 978 and 934 g/d, ADFI was 2.77 and 2.60 kg/d, and G:F was 0.366 and 0.373. Carcass backfat thickness and loin depth did not change due to EPCM. Pigs fed 15% EPCM reached slaughter weight 3 d after ($P < 0.05$) pigs fed 0% EPCM.

Implications: EPCM provides energy and AA; however, ADG was reduced 3 g/d per 1% inclusion of EPCM inclusion in diets formulated to equal NE and SID AA. Thus, inclusion levels of EPCM in swine diets should be targeted to ensure an expected growth performance.