Effects of feeding canola press-cake on diet nutrient digestibility and growth performance of weaned pigs

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Canola press-cake (CPC) is a co-product of biodiesel production from small to medium-scale processing plants that mechanically press canola seed without pre-pressing conditioning, flaking, cooking and post-pressing solvent extraction. The CPC contains 37% crude protein (CP) and 20% remaining oil thus could be a source of both protein and energy in pig diets. Growth responses to increasing dietary CPC inclusion have not been extensively evaluated in young pigs. Five wheat-based diets containing 0, 5, 10, 15, or 20% CPC replacing soybean meal were fed to 240 weaned pigs (7.5 kg) with 12 replicate pens per treatment. Diets were formulated to contain 10.3 and 10.1 MJ net energy (NE)/kg and 1.2 and 1.0 g standardized ileal digestible (SID) lysine/MJ NE, and were fed for 2 and 3 weeks, respectively. Feed added and remaining were recorded and pig body weight were measured weekly to calculate average daily feed intake (ADFI), average daily weight gain (ADG) and feed efficiency (G:F) per pen (4 pigs per pen). Faeces were collected to determine diet apparent total tract digestibility coefficient (CATTD) of gross energy (GE), crude protein (CP) and digestible energy (DE) value. Increasing dietary inclusion of CPC linearly reduced ($P < 0.05$) the CATTD of GE, CP, diet DE and calculated NE values. Increasing dietary inclusion of CPC did not affect overall ADFI and ADG of pigs but linearly increased ($P < 0.05$) G:F for the overall trial.

Implications: The availability of CPC is increasing in North America due to increasing canola production and demand for biodiesel. Feeding up to 200 g/kg of CPC replacing soybean meal in nursery diets could potentially reduce feed cost while not affecting overall growth performance of weaned pigs when diets were balanced for NE value and SID Lys/NE ratio.