

Abstract

This experiment was conducted to determine the apparent (AID) and standardized ileal digestibility, (SID) of crude protein (CP) and amino acids (AA), the digestible (DE), metabolizable (ME) and calculated net energy (NE) values of screw-pressed camelina cake (SPCC) fed to growing pigs. Six ileal cannulated barrows [(Yorkshire-Landrace) × Duroc] with an average BW of 80 kg were assigned to two experimental diets in a two period crossover design to give six observations per diet. Each period lasted for 10 d; the initial 5 d for diet adaptation, followed by 3 d for urine and feces collection, and 2 d for ileal digesta collection. Pigs were fed either a corn–soybean meal basal diet formulated to meet NRC (1998) (Nutrient Requirements of Swine, 10th ed. National Academic Press, Washington, DC) nutrient requirements for 50 to 80 kg pigs or the basal diet with a portion of the corn and soybean meal replaced by 200 g/kg SPCC. The daily feed allowance was set at 40 g/kg BW at the beginning of each period and offered in two equal portions at 0800 and 1600 h. Titanium dioxide (3 g/kg) was included as an indigestible marker. The AID and SID of CP and AA as well as DE and ME values in SPCC were determined by the difference method. The SID of CP and AA was calculated using published values for basal endogenous AA losses obtained from our laboratory and NE was calculated using the determined components from chemical analyses. The GE, CP, lysine, methionine, threonine, ether extract, NDF, ADF and glucosinolate contents of SPCC (on a DM basis) were 21.5 MJ/kg, 381, 18, 6.8, 16.8, 119, 315, 203 g/kg and 36.3 $\mu\text{mol/g}$, respectively. The SID coefficient of CP for SPCC was 0.65. The coefficient of SID of lysine, methionine and threonine for SPCC were 0.58, 0.53 and 0.53, respectively. The DE, ME, and calculated NE values of SPCC were 17.5, 16.2 and 10.2 MJ/kg, respectively. In conclusion, SPCC has potential as an energy source given its remaining oil content, however, its digestibility coefficients for AA and CP were low, and could limit its utilization in swine diets. The SID AA, DE, ME, and calculated NE values of SPCC obtained from the current study could be used when formulating diets and to obtain predictable animal performance.