

New low-fiber Canola. Part 2: Nutritive value of *Brassica napus* and *Brassica juncea* meals for broiler chickens and turkeys.

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Earlier research from this laboratory, as documented in the accompanying Part 1 of this series, has demonstrated superior quality characteristics (i.e., increased protein and sucrose and reduced dietary fiber contents) of newly developed yellow-seeded *B. napus* canola and canola-quality, yellow-seeded *B. juncea* mustard. As opposed to our earlier research, this is the first time that the respective meals were obtained from a large-scale, pre-press solvent extraction process. The objectives of this research were to determine amino acid digestibility and available energy contents to be further used in the validation growth performance studies with broiler chickens and turkeys. Standardised ileal total amino acid digestibility of *B. napus* yellow, *B. juncea*, and the conventional *B. napus* black canola as determined with broiler chickens (21 d of age) and turkeys (28 d of age) were, respectively, 82.5, 83.2, and 81.8% for broilers and 76.2, 76.4 and 78.0% for turkeys. Apparent metabolisable energy (AME_n) values for yellow *B. napus*, *B. juncea*, and the conventional black *B. napus* canola meal as determined with broiler chickens (14 to 19 d of age) and turkeys (35 to 40 d of age) were, respectively, 1865, 2092 and 1902 kcal/kg DM for broilers and 2170, 2276, and 2088 kcal/kg DM for turkeys, respectively. Enzyme (multicarbonyhydrase) supplementation resulted in AME_n values of 2131, 2264 and 1851 kcal/kg DM for broilers and 2264, 2267, and 2196 kcal/kg DM for turkeys, respectively. The nutritive value of canola meals was further validated in a growth performance study with turkeys from 1 to 56 d of age fed wheat/soybean meal-based diets containing 20% of canola meals. All diets were balanced for digestible amino acids and available energy contents. No significant differences ($P>0.05$) in BWG and FCR were observed indicating that all types of canola meal could effectively replace SBM in turkey rations providing that the diets are formulated based on digestible amino acids and available energy contents.

Key words: canola meal, nutritive value, broiler chicken, turkey, enzyme supplementation

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