

# 2<sup>nd</sup> International Conference on **Animal & Dairy Sciences**

September 15-17, 2014 Hyderabad International Convention Centre, India

## Nutritional quality of Indian rapeseed meal

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Prices of soybean meal (SBM) are highly volatile and continue to increase. Rapeseed meal (RSM) is a commonly used alternative protein source in poultry. However, in order to use RSM effectively in poultry diets, it is critical to have updated knowledge on their nutrient profile as well as anti-nutritional factors, as the values tend to change over time. Objectives of this paper were to determine the content of essential amino acids (EAA) and proximate nutrients of Indian origin RSM samples collected during 2013. In addition, metabolisable energy (ME) content of RSM was estimated for poultry using prediction equation based on proximate nutrients. Total glucosinolate contents of Indian RSM samples were also analyzed during the study period. A total of 3073 samples were analyzed for EAA and crude protein and 1743 samples were analyzed for other proximate nutrients. Results indicate that Indian RSM, on 88% standardized dry matter basis (mean  $\pm$  1 SD), contained 37.09 $\pm$ 0.71% crude protein, 1.76 $\pm$ 0.07% Lys, 0.69 $\pm$ 0.02% Met, 1.64 $\pm$ 0.04% Met+Cys, 1.49 $\pm$ 0.03% Thr, 0.50 $\pm$ 0.01% Trp, 2.32 $\pm$ 0.09% Arg, 1.43 $\pm$ 0.03% Ile, 2.48 $\pm$ 0.05% Leu, 1.81 $\pm$ 0.04% Val, 1.01 $\pm$ 0.04% His and 1.46 $\pm$ 0.03% Phe. Crude protein level ranged from 34.9% to 39.62%, with low (<5%) coefficient of variation (CV) observed for all EAA. The analyzed AA contents were found to be higher than the previously reported book values (e.g., 1.73% Lys, 0.68% Met, 1.45% Thr; Indian RSM average from AMINODat<sup>®</sup> 4.0, 2010), indicating the importance of using the actual values in feed formulations. Mean concentrations of ether extract, crude fiber, and crude ash were estimated to be 2.76%, 10.45%, and 6.98%, respectively while their CV ranged between 4.14% (fiber) and 12.32% (ether extract). Based on Rostagno's energy prediction equation, ME (mean $\pm$ 1 SD) of RSM was calculated to be 1743 $\pm$ 19.79 kcal/kg. Glucosinolate content (mean  $\pm$  1 SD, n=29) was found to be 20.10  $\pm$  8.80 mg/g with values ranging from 6.89 mg/g to 35.76 mg/g. Huge variation observed in the glucosinolate content may explain the discrepancies observed in the performances of broilers when feeding Indian RSM. In India, RSM and mustard meal varieties are often mixed and used without considering quality with regard to ANFs and this warrants further investigation. Data of this study serve as a reference when formulating diets with RSM for poultry.

## Biography

Karthik Masagounder has obtained his Bachelors in Fisheries Sciences from Tamil Nadu Veterinary and Animal Sciences University and Masters in Aquaculture from Central Institute of Fisheries Education, Mumbai. He completed PhD from the University of Missouri, USA focusing on animal nutrition. He then continued his postdoctoral research in the area of bioenergetics for another 1.5 years in the USA. He has published more than 10 papers, many popular press articles and abstracts in the areas of fish and poultry nutrition. He has been working for Evonik Industries since Jan 2012 as a Regional Technical sales manager.

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