Influence of dietary protein sources on nutrient intake, digestibility and nitrogen balance in growing rabbits

1Abdu, S.B., 1Hassan, M.R., 1Musa, A., 2Adamu, H.Y., 1Yashim, S.M., 2Mijinyawa, M.A. and 1Okunade, O.M.

1Department of Animal Science, Ahmadu Bello University, Zaria.
2Saadatu Rimi Collage of Education, Kano

Corresponding Author: sbabdu@gmail.com Phone No.: +2348060398664
Target Audience: Rabbit farmers, Feed millers, Extension staff, Animal Scientist

Abstract

Fifteen rabbits weighing 501±0.20g were randomly assigned to three dietary treatments, with 5 rabbits per treatment to determine intake, apparent nutrient digestibility and nitrogen economy of three different protein sources i.e poultry litter (PL), blood meal (BM) and cotton seed cake (CSC) in a completely randomized design. PL diet had significantly (P<0.05) higher DMI (54.7g/d), followed by BM (49.38g/d) and the least was observed in rabbits fed CSC diet (39.22g/d). The digestibility of CP was significantly (p<0.05) higher and similar in PL and CSC treatment diets (64.17 and 63.19, respectively), followed by BM (49.21) which is statistically lower. Crude fibre digestibility also followed similar pattern. There was significant (p<0.05) difference in fecal N output in diet containing BM and PL, which were higher and similar (3.29 and 2.89g/day respectively), followed by CSC which had significantly (p<0.05) lower fecal N excretion (2.13g/day). N retained was higher in PL and BM (2.46 and 2.21 respectively), followed by CSC (1.18g/d). The result of N retention as % of intake differs (p<0.05) significantly, which is lower in PL diet, followed by BM and was highest in CSC diet. The utilization of PL in the diet of rabbit showed higher nutrient digestibility, nitrogen balance and nutrient intake. The study hereby recommends the inclusion of mixtures of proteins of different solubility in the diet of rabbit for efficient faecal fermentation for improved digestion and nitrogen utilisation.

Keywords: Digestibility, Growing rabbit, Nitrogen balance, Protein sources