

Determination of Nutrient Composition in Locally Available Feed Ingredients in Anuradhapura

R.H.W.M. Karunanayaka, W.A.D. Nayananjalie*, S.C. Somasiri, A.M.J.B. Adikari,
W.V.V.R. Weerasinghe and M.A.A.P. Kumari

Department of Animal and Food Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka.

The objective of this experiment was to assess the nutrient quality of locally available feed ingredients for feeding ruminants in Anuradhapura district, Sri Lanka. Agro-industrial by-products such as rice (*Oryza sativa*) bran, maize (*Zea mays* L.) meal, coconut (*Cocos nucifera*) poonac and soya bean (*Glycine max*) meal and different fodder species such as maize (*Zea mays*), sorghum (*Sorghum bicolor*), CO3 (*Pennisetum purpureum*), guinea grass (*Panicum maximum*) and Gliricidia (*Gliricidia sepium*) were used. The chemical composition of the above ingredients was determined according to the association of official analytical chemists. The ingredients were analysed for dry matter content, crude protein, crude fiber, ash, ether extract, and gross energy content. From the tested ingredients, soya bean meal ($50.56 \pm 0.25\%$), coconut poonac ($19.39 \pm 0.25\%$), and Gliricidia ($23.78 \pm 0.79\%$) had comparatively higher crude protein contents. Rice bran (4219 ± 209.30 kcal/g), Gliricidia (4066.50 ± 0.71 kcal/g), sorghum (3882 ± 39.60 kcal/g), coconut poonac (3877 ± 66.47 kcal/g), and soya bean meal (3714 ± 33.94 kcal/g) had higher gross energy contents compared to the other feed sources. The highest ash ($10.70 \pm 2.02\%$) and crude fiber ($38.72 \pm 1.48\%$) contents were reported in sorghum. Relatively higher ether extract content was observed in rice bran ($11.48 \pm 1.48\%$), coconut poonac ($7.16 \pm 0.40\%$), Gliricidia ($4.64 \pm 0.04\%$), and maize meal ($3.12 \pm 0.99\%$). The present results show that industrial by-products and different fodder species vary in chemical composition. According to the available nutrient composition, these feed ingredients can be used for feeding ruminants. Therefore, there is a possibility of preparing a total mixed ration using these ingredients.

Keywords: Agro-industrial by-products, Chemical composition, Feeding ruminants, Fodder species