

A Preliminary Study on Making Complete Feed Blocks for Cattle with Different Combination of Fodder Grasses and Agricultural Wastes

S. Sivajanani* and J. Sinniah

¹Department of Animal Science, Faculty of Agriculture, University of Jaffna, Kilinochchi, Sri Lanka

*jananisanthiralingam@gmail.com

The present study was carried out to develop a cost effective complete feed blocks with long shelf life using locally available fodder grasses and agricultural wastes. Three different complete feed blocks (T1, T2 and T3) were formulated to meet the daily requirement of 250 kg heifers. The composition of treatment blocks were T1: 13.6% rice bran, 13.6% coconut poonac, 1.1% Mysore dhal husk, 40.8% rice straw and 15.6% Gliricidia; T2: 1.1% rice bran, 13.6% coconut poonac, 13.6% Mysore dhal husk, 29.5% rice straw and 27.2% sugar graze and T3: 28.3% cattle mash and 56.7% hybrid Napier CO-3. For all treatments, 10% molasses, 1% urea, 2% mineral mix, 1% salt and 1% lime were incorporated. The physical (weight, thickness, durability percentage) and chemical properties (percentages of dry matter, ash, crude fiber, ether extract, crude protein, acid detergent fiber, neutral detergent fiber, calcium, phosphorus, total digestible nutrients and digestible crude protein), shelf life and cost effectiveness of treatments were determined. Data were analyzed by ANOVA using SAS version 9 and means were separated by Duncan's Multiple Range Test. Compacted blocks were formed in T1 and T2, while, T3 formed loose mass. The lowest ($p<0.05$) free fatty acid content were observed in T2, while, T3 had the highest. The highest ($p<0.05$) dry matter, ash, ether extract, crude fiber and acid detergent fiber percentage were recorded in T1. Higher ($p<0.05$) neutral detergent fiber, calcium and phosphorus contents were observed in T2 compared to T1 and T3. The highest ($p<0.05$) crude protein and total digestible nutrient content were recorded in T3. The costs of production of T1, T2 and T3 to fulfill daily requirement of a heifer (250 kg) were Rs. 130.55, Rs. 149.75 and Rs. 160.60, respectively. Based on the findings of this study, the feed block T3 found to be the best considering total digestible nutrient and crude protein contents, while, considering the shelf life and cost of production, the feed block T1 found to be the best. However, a feeding trial is required to evaluate the growth rate and feed conversion efficiency of heifers to select the best complete feed block.

Keywords: Agricultural wastes, cattle, complete feed block, heifers