

## **EFFECTS OF TREATED RICE STRAW AS A NIGHT FEED ON THE PERFORMANCE OF DAIRY CATTLE**

**H.M.P. Abeyrathna<sup>1</sup>, M.W.C.D. Palliyaguru<sup>2</sup>, W.W.D.A. Gunawardena<sup>3</sup>,  
A.M.K.R. Bandara<sup>1</sup> and C.S. Ranadheera<sup>1</sup>**

<sup>1</sup>*Department of Agricultural Systems, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura.*

<sup>2</sup>*Veterinary Research Institute, Gannoruwa, Peradeniya.*

<sup>3</sup>*Department of Animal Sciences, Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya.*

Dairy industry has a great potential to expand within Sri Lanka. Majority of cows and buffaloes are reared in dry and intermediate zones, under paddy based cultivation. These large populations also have a similar share of milk production compared to some of the improved breeds. However, scarcity of feeding material is a limiting factor. Seasonal dry periods reduce the availability and quality of forages. Hence, it is important to utilize abundantly available feed material in shortages. Rice straw (RS) is an ideal alternative for this purpose. However, due to poor nutritional quality, it is not popular among farmers. Objectives of this experiment were to treat rice straw to improve nutritional quality and to examine the effects of treated rice straw as a night feed for Sahiwal crossbred cows. Four groups of four cows with initial body weight ranging from 238-364 kg were assigned to treatment diets: T<sub>1</sub>: (2 % NaOH treated RS, added with supplement mix (S): 2 % urea, 0.5 % mineral mixture and 2 % maize), T<sub>2</sub>: (RS + S), T<sub>3</sub>: (Boiled RS + S) and T<sub>4</sub>: (control diet/ RS only). Experiment was conducted in a 4 × 4 latin square design (treatments rotated after 21 days) for 84 days. Feed intake and milk yield were recorded and composition of milk was analyzed. Results of this study indicated that T<sub>1</sub> significantly increased the feed intake (p=0.02) by 5.5%, evening milk yield (p=0.002) by 14% and milk protein percentage (p=0.01) by 12% compared to the control diet. No treatment effect was identified on morning milk yield and milk fat. There was no treatment differences between T<sub>2</sub> and T<sub>3</sub> fed cows with respect to any of the variables. Results suggested that the 2% NaOH treatment of rice straw with supplementations is most effective. Therefore, it is an appropriate alternative as a night feed or during roughage scarcity.

**Key words:** Milk, NaOH treatment, Rice straw