RUMEN FERMENTATION PATTERN IN GRADED MURRAH BUFFALO BULLS FED ON LEVUCELL SC 20 YEAST (SACCHAROMYCES CEREVISIAE CNCM I-1077) CULTURE*

D. Srinivas Kumar1, J. Rama Prasad2, E. Raghava Rao3, K. Sarjan Rao4

ABSTRACT
Improvement in productivity of ruminants through manipulation of rumen microbial ecosystem is a subject of persistent interest to ruminant nutritionists and microbiologists. Probiotics like yeasts have displayed positive impact on the growth and viability of rumen microflora and the fermenting process in the rumen. But, the results have been inconsistent due to confounding effects of the ration composition, and variability in the properties of the yeasts and their administration protocol. This study was undertaken to assess the rumen fermentation pattern in graded Murrah buffalo bulls, fed on a diet, supplemented with Levucell SC 20 yeast (Saccharomyces cerevisiae, CNCM I-1077 strain) culture in a crossover design of experiment for a period of 60 days. Six graded Murrah buffalo bulls of about 3 years of age with an average body weight of 229.85±8.36 kg, each fitted with a permanent rumen cannula, were divided into two groups of three animals each. The animals were maintained on 1.5 kg of concentrate mixture, and Hybrid Napier CO1 fodder ad libitum to meet the nutrient requirements (ICAR, 1998). The experimental group was supplemented with Levucell SC 20 at the rate of 0.5 g /animal/day in peroral route, along with concentrate mixture. The ruminal fluid was collected at 0, 2, 4, and 6 hours post-feeding, after 30 days to assess rumen pH, total volatile fatty acid (TVFA) concentration, ammonia nitrogen, total nitrogen, Trichloroacetic acid insoluble protein nitrogen (TCA-IPN), residual nitrogen, and food and protozoal nitrogen. The yeast supplemented group showed increase (P≥0.05) in all these attributes than the control. It is inferred that supplementation of yeast culture in the diet could improve the digestive efficiency by increasing the concentration of rumen metabolites in ruminants.

KEY WORDS
Buffalo bull, Levucell SC 20, Murrah, Rumen fermentation, Yeast

Author attribution: 1Assistant Professor, 2Retired Professor, 3Professor & Head, Department of Animal Nutrition, NTR College of Veterinary Science (Sri Venkateswara Veterinary University), Gannavaram, Andhra Pradesh, India- 521102, 4Associate Dean, College of Veterinary Science (Sri Venkateswara Veterinary University), Produttur, Andhra Pradesh, India- 516360. 1Corresponding author: kumardhulipalla@rediffmail.com  *Part of PhD thesis of the first author submitted to Sri Venkateswara Veterinary University (SVVU), Tirupati, India. Date of Receipt: 14/08/2010, Acceptance: 25/12/2010.