Acknowledgements

The author takes the privilege to acknowledge ***Department of Animal Science & Nutrition ,*** *Chittagong Veterinary and Animal Sciences University (CVASU) which given the opportunity to accomplish of the production report.*

The author expresses his sincere gratitude, heartfelt respect and immense indebtedness to his supervisor Professor ***Dr. Ashraf Ali Biswas****, Department of Animal Science & Nutrition, Faculty of Veterinary Medicine, CVASU.*

The author would like to express his deep sense of gratitude and thanks to Professor ***Mr. Md. A. HALIM****, Dean, Faculty of Veterinary Medicine, CVASU.*

The author expresses his sincere gratitude and thanks to Professor ***Dr. A. K. M. Saifuddin****, Director of External Affairs, CVASU for his supervision and kind co-operation during the period of internship.*

PLAGIARISM CERTIFICATE

Myself Ovirup Bhushan Paul strongly assures that I have performed all works furnished here in this report. The Information's have been collected from books, national and international journals, websites and other references. All references have been acknowledged duly.

Therefore, I hold entire responsibility for collection, compilation, preservation and publication of all data accumulated here in this report.

The Author

September, 2018

ABSTRACT

Ruminants are an essential part of livestock expert in converting cellulose and other fibrous materials into high quality milk & meat which depends on digestibility of feed. The study were conducted with new feeding strategies of different roughages and concentrate mixture with fermentation to increase digestibility. Total mixed ration (TMR) produced with 70% roughage of silage & rice straw and 30% concentrate mixture. Fermented TMR (FTMR) produced by mixing TMR feed with molasses containing *Saccharomyces Cerevisiae.* With this study, we evaluated the effects of TMR and fermented TMR feed on total gas production, pH, digestibility of ruminant by ruminal in-vitro digestion method. Data were collected for In-vitro digestion trial at 6hr, 12hr, 24hr & 48hrs of incubation period. We observed decreasing tendency of pH with the increasing incubation period and no significant difference between TMR & FTMR. Digestibility of FTMR was significantly higher than the TMR ($P < 0.01$). On the other hand, total gas production was significantly lower in FTMR than the TMR ($P < 0.01$). So we can conclude that FTMR is better than TMR in terms of digestibility and gas production.

Key words: TMR, FTMR, In-vitro digestion.