

Wanlert Pongpokul 2006: Nutritive Quality Improvement of Rice Straw by Microbial Treatment in Beef Cattle Production. Master of Science (Animal Production), Major Field: Animal Production, Department of Animal Science. Thesis Advisor: Associate Professor Smith Yimmongkol, M. Sc. 87 pages.
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There were 2 experiments where the first experiment was to determine the nutritive value among rice straw with 2 various microbial treatments on rice straw and the last experiment was to investigate growth performance of beef cattle fed rice straw fungal treated rice straw and yeast with bacterial treated rice straw. The first experiment was found that crude protein and ash content of fungal treated rice straw was highly significant greater than was rice straw ($P<0.01$). Lignin content of fungal treated rice straw was lower than was rice straw ($P<0.01$). Crude protein content of *Saccharomyces cerevisiae* and lactic acid bacteria treated rice straw was highly significant greater than was rice straw ($P<0.01$). Digestibility of microbial treated rice straw evaluated by Nylon bag technique (*in situ*) showed that dry matter disappearance of rice straw, yeast and bacterial treated straw and molasses treated rice straw were highly significant greater than was fungal treated rice straw ($P<0.01$).

Fifteen crossbred Brahman X Native cattle used in the last experiment were randomly allocated into 3 groups consisting of rice straw (G_1), fungal treated rice straw (G_2) and yeast and bacterial treated rice straw (G_3). It was found that dry matter, organic matter, neutral detergent fiber, acid detergent fiber and crude protein digestibility of G_1 were highly significant greater than were G_2 and G_3 , respectively ($P<0.01$). Cattle in G_3 highly had an average daily weight gain than G_1 and G_2 , respectively ($P<0.01$). Ruminal ammonia nitrogen, blood urea nitrogen and blood glucose in G_3 were higher than were G_1 and G_2 , respectively ($P<0.05$). However rumen protozoal population in G_2 was significant greater than G_1 and G_3 , respectively ($P<0.05$) while bacteria and fungal zoospores in G_1 were higher than were G_3 and G_2 respectively ($P<0.05$).

Wanlert Pongpokul

Student's signature

Smith Yehl.

Thesis Advisor's signature

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