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## EFFECTS OF AMMONIATED SUGAR BEET PULP BY DIFFERENT LEVELS OF AMMONIA AND HIGH LEVELS OF WATER WITH ADDITIONAL OF ENZYME ON PARAMETERS OF IN VITRO GAS PRODUCTION

**Authors** B.Sadighian, A. A. Naserian

**Abstract** Sugar beet pulp is an important by-product for sub-tropical and tropical ruminant animal production. Sugar beet pulp has a high potential rumen degradability and apparent digestibility and, as with other pectin-rich food, causes a lower production of lactic acid than starchy foods. The aim of the present study was to evaluate the effect of different levels of ammonia (1, 2 and 3 percent of BP), water (90 and 120 percent of BP) and with untreated and treated enzyme 0.5 g/kg. The enzyme was a mix of several enzymes (Cellulase, Xylanase, Beta-glucanase, Pectinase, Phytase, and Alpha-amylase) on in vitro gas production parameters of sugar beet pulp. Treatments were ensiled for 2 weeks. Two fistulated steer were sampled for rumen fluid. All samples were incubated in buffered rumen liquor for 96 h with three replicates and Gas production was recorded at times 2, 4, 8, 12, 24, 36, 48, 72, and 96 h after incubation. Kinetics of gas production were obtained from gas profiles fitted by exponential equation of  $P=b(1-e^{-ct})$ . The data was analyzed by SAS 9.2 program and Proc GLM in a factorial on base completely randomizing design. Means were separated by Duncan test at 0.05 probability level. This data suggest ammoniation by anhydrous ammonia can decrease gas production parameters. Addition of high levels of water can improve ammoniation process and addition of water and enzyme decreased parameters of gas production.

**Keywords** sugar beet pulp, anhydrous ammonia, gas production, enzyme

