

Effect of Different Levels of Wheat Bran on *In Vitro* Gas Production of Citrus Pulp Silage

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The aim of the present study was to evaluate the effect of different levels of wheat bran on *in vitro* gas production parameters of citrus pulp silage. In this experiment, the whole citrus pulp was manually chopped (3-4 cm length) and used as untreated or treated with wheat bran for 6, 12 and 18 g/kg fresh citrus pulp. Treatments were ensiled under anaerobic condition for 6 weeks. Samples were then taken, and dried and ground (to pass a 2 mm sieve). Rumen fluid was collected from three ruminally fistulated sheep (42 ± 2.5 kg body weight) and strained through four layers of cheesecloth. The laboratory handling of rumen fluid was carried out under a continuous flow of CO₂. Into each syringe was weighed 200mg of sample material (3 replicates per treatment sample). The syringe was then filled with 30 ml of medium consisting of 10 ml rumen fluid and 20 ml buffer solution. The syringes were placed in an incubator (38.6°C). Gas production was measured at 2, 4, 6, 8, 12, 24, 36, 48, 72, and 96 h. Cumulative gas production data were fitted to the exponential equation $P=b(1-e^{-ct})$, where b is the gas production from the insoluble fraction (ml), c is the gas production rate constant for b (ml/h), t is the incubation time (h), and P is the gas produced at time t. *In vitro* digestibility of organic matter (OMD%), net energy (NE_L, MJ/kg), Metabolisable energy (ME), short chain fatty acids (SCFA) content, and flieg point of samples was estimated. The data were analyzed as a completely randomized design using the General Linear Model (GLM) procedure of SAS (2004). There were significant differences between treatments for *in vitro* gas production parameters ($p<0.05$). The OMD, NE_L, and ME were significant differences among samples ($p<0.05$). Also there were significant differences among treatments for SCFA content ($p<0.05$). Based on flieg point data, all treatments had very good quality. This data suggest that the addition of wheat bran to citrus pulp silages; will increase the energy content of citrus pulp silage without any adverse effects on treatments.

Key Words: Wheat bran, Citrus pulp silage, Gas production