

DETERMINATION EFFECTS OF HIGH-LEVEL AMMONIATED SUGAR BEET PULP ON PARAMETERS OF IN VITRO GAS PRODUCTION

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ABSTRACT

Sugar beet pulp and molasses, the two main by-products of the sugar industry, are produced in large amounts annually. Both contain considerable amounts of carbohydrate. Anhydrous ammonia (NH₃) has been shown to improve the nutritive value of low quality forages such as corn stover (Kunkle et al., 1980). Most different of the chemical compound and nutrition quality associated amount of molasses and about fermentation parameters is not any information. The objective of the present study was to evaluate the effect of ammoniated sugar beet pulp (ABP) on parameters in vitro gas production. Samples of BP were provided treated 4 or 5 percent of anhydrous ammonia (based of DM) and also 30, 60 or 90 percent of addition water (based of DM). In vitro incubations were carried out using 0.2 g of each sample (3 replicates) which was placed in a 125 mL vial containing 30 mL buffered rumen fluid (ratio of buffer to rumen fluid was 2:1). Rumen fluid was obtained from 3 ruminally fistulated steer before the morning feeding, and immediately strained through 4 layers of cheesecloth. Vials were then incubated at 38.8°C and the volume of gas produced was determined at 2, 4, 8, 12, 16, 24, 36, 48, 72 and 96 h after the incubation. The gas production data were fitted using an exponential equation of $P = b \times (1 - e^{-ct})$, where b is the volume of gas produced, c is the fractional rate constant of gas production (/h), t is the incubation time (h) and P is the volume of gas produced at time t. Statistical analysis was conducted using SAS 9.2 software. Results demonstrated that the gas production parameters of the feed samples were significantly different ($P < 0.05$). In addition, results of the present study indicate that the gas production parameters of the feed samples were significantly altered when anhydrous ammonia was infusion in the BP packets. ammonia caused a significant ($P < 0.05$) decrease of b and c parameter about all of ammoniated treatments of BP comparison of untreated BP.

Keywords: sugar beet pulp, anhydrous ammonia, gas production

REFERENCES

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