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Area of work: Ruminant nutrition

Does the use of condensed tannins added to elephant grass during ensiling affect the ingestive behavior of dairy steers?

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Phylogenetic additives, which include condensed tannins, are associated with beneficial effects on animal metabolism. However, when ingested in large quantities, tannins can cause a depressive effect on *ad libitum* intake. Therefore, the aim of present work was to evaluate the feeding behavior in dairy steers fed with condensed tannins added to elephant grass (*Pennisetum purpureum Schum.*) during ensiling to test the hypothesis that condensed tannins added to elephant grass during ensiling does not alter the ingestive behavior of dairy steers. The experiment was conducted in the Academic Unit of Serra Talhada of the Federal Rural University of Pernambuco. Five intact Holstein-zebu dairy steers with an body weight of 151 kg were used. In the pre-experimental period, all animals were treated against ecto and endoparasites. Animals were kept in individual stalls. Each stall had a feeder. The experimental design was a 5×5 Latin square. The experimental period lasted 65 days, divided into five periods of 13 days, being seven days for adaptation of animals to experimental conditions and six for data collection. Experimental diets were isoproteic and composed elephant grass silage or fresh elephant grass, ground corn grain, soybean meal, urea, and mineral salt. Feeding was done twice a day at 08:00 and 16:00 h to allow for *ad libitum* intake. Treatments consisted of grass without tannin; grass with tannin; grass with tannin diluted in water; silage with tannin; and silage without tannin. A total of 10.0 g/kg dry matter of condensed tannins was added to the fresh grass and in the ensiling process. Behavior monitoring and data collection were performed for 24 hours every 10 min. The variables analyzed were as follows: feed intake time, rumination time, chewing time, and idleness time. All variables were subjected to the analysis of variance followed by the Tukey test, using the GLM procedure of Statistical Analysis Systems. The differences were significant at 5% of error probability. The use of condensed tannins as additives did not significantly affect ($P>0.05$) the rumination time, chewing time, and idleness time. However, condensed tannins added to elephant grass during ensiling significantly affect the feed intake time ($P<0.05$), where the silage treatment with tannin obtained the shortest time (272.0b min) followed by grass with tannin diluted in water (320.0ab min), grass without tannin (330.0ab min), silage without tannin (336.0ab min) and grass with tannin (370.0a min). The addition of condensed tannins during ensiling possibly modified the fermentation profile inside the silo, with a higher production of lactic acid and propionate and a lower production of acetic acid, resulting in greater palatability, causing faster ingestion by the animals. It is recommended to add condensed tannins to elephant grass during ensiling for dairy steers because it positively affects ingestive behavior.

Keywords: cattle; chewing time; rumination time; secondary metabolites

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