

Effects of polyphenol rich bamboo leaf on rumen fermentation characteristics and methane gas production in an in vitro condition

ABSTRACT

The aim of this study was to test the effect of bamboo leaf (BL) on rumen methane gas production and rumen fermentation characteristics, in vitro. Different amounts of BL; CON (0 %), Low BL (LBL, 10 %), Medium BL (MBL, 15%) and High BL (HBL, 25%) of replacement with alfalfa hay (AH) in substrate (50 % concentrate + 50 % AH) were mixed with 30 millilitre (mL) of buffered rumen liquor for 48 h of incubation. Total gas production (mL/250 mg DM) was not affected ($P>0.05$) among BL treatment groups at different times of incubation. Production of methane gas (mL/250mg DM) decreased at a declining rate ($P<0.05$) with higher BL levels. Methane gas inhibitory effects of BL treatment groups as compared with CON were; 29%, 35% and 62% for LBL, MBL and HBL, respectively. The ratio of acetic/propionic was lowest ($P<0.05$) for HBL (1.67) as compared to CON (2.09).

Keyword: Bamboo leaf; Fermentation; In vitro gas production; Methanogenesis; Rumen