

## The Effect of Concentrate Containing Probiotics on Fermentation Characteristics and in vitro Nutrient Digestibility

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**Abstract :** The aim of the experiment was to evaluate the effect of probiotic addition in concentrate on fermentation characteristics and in vitro nutrient digestibility of the grass *Pennisetum purpureophoides*. Two strains lactic acid bacteria (LAB) i.e *Lactobacillus plantarum* and *Lactobacillus acidophilus*, and one strain yeast of *Saccharomyces cerevisiae* were used as probiotic. The probiotics was added at 2% and 4% (v/w) in the concentrate. The result showed the concentrate containing between  $1.5 \times 10^6$  and  $3 \times 10^7$  CFU/g of lactic acid bacteria and  $3 \times 10^3$  CFU/g of *S. cerevisiae*. The DM, OM and NDF digestibility were higher ( $P < 0.01$ ) in grass substrate with concentrate than in grass alone. Addition of probiotic in concentrate increased ( $P < 0.01$ ) DM, OM and NDF compared to concentrate without probiotic. Total VFA and propionic acid concentrations were higher ( $P < 0.01$ ) in grass substrate with concentrate than in grass alone. Concentration of acetic acid decreased ( $P < 0.01$ ) in grass substrate with concentrate than in grass substrate alone. Addition of *L. plantarum* and *L. acidophilus* and *S. cerevisiae* in concentrate increased ( $P < 0.01$ ) propionic acid concentration. It was concluded that addition of probiotic in concentrate increased propionic concentration and in vitro nutrient digestibility.

**Keywords :** by-products, concentrate, digestibility, probiotics

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