Abstract

This study was conducted to determine the effects of treating *Prosopis juliflora* pods with multienzyme and bacterial cultures on in vitro dry matter digestibility (IVDMD), fermentation kinetics, and performance of growing pigs. Experiment one consisted of a pepsin-pancreatine hydrolysis method to simulate, in vitro, the pig digestive system and was followed by in vitro gas production to assess fermentation kinetics. Samples of ground *Prosopis* pod meal (GPPM) were allocated to four treatments with three replicates each. Treatments included GPPM treated with multienzyme (Natuzyme®) (T1); untreated (GPPM) (T2); GPPM fermented with (*Lactobacillus plantarum* MTD1 Ecosyl ®) (T3), and GPPM treated using natural fermentation (T4). The second experiment assessed the performance of pigs fed the best treatment from experiment 1. Thirty Landrace × large white crosses of 20 ± 2 kg were allotted to five treatments with six pigs each (replicates). The dietary treatments were PC, 0% GPPM + enzyme; NC, 0% GPPM and 0% enzyme; D1, 10% GPPM + enzyme; D2, 20% GPPM + enzyme; and D3, 30% GPPM + enzyme. A randomized complete block design was used for both experiments. Enzyme treatment (T1) and T3 improved the IVDMD of the GPPM compared to T2 by 3.68% and 1.2%, respectively ($p < 0.05$). Cumulative gas was highest and Tmax lowest for T1 but significantly different only to T4 ($p < 0.05$). Average daily gain and intake were highest for pigs fed GPPM up to 10% (PC, D1). Feed conversion ratio increased with the level of GPPM in the diet. The results suggest *Prosopis juliflora* pods treated with enzymes can be added in pig diets up to 30%.