

Effect of sodium hydroxide and enzyme on chemical compounds and nutritional value of powder palm kernel.

Abstract

This research was conducted to evaluate the effect of fibrolytic enzyme (FE) and sodium hydroxide (SH) on the chemical composition and the nutritional value of the palm kernel (PK). For this purpose, palm kernel samples were collected randomly from Isfahan city. Experimental treatments were palm kernel powder (control), PK with 3% SH, PK with 6% SH, PK with 1.5 g of enzyme (g per KG dry matter), PK with 3 g of enzyme, PK with 3% HS and 1.5 g of enzyme, PK with 6% SH and 1.5 g of enzyme, PK with 3% HS and 1.5 g of enzyme, PK with 6% SH and 1.5 g of enzyme, PK with 3% HS and 3 g enzyme, PK with 6% HS and 3 g enzyme. Chemical composition includes dry matter (DM), organic matter (OM), crude ash (ASH), crude protein (CP), ether extract (EE), cell wall (NDF) and cell wall without hemicellulose (ADF) with standard methods, digestibility of organic matter and metabolizable energy by gas production and DM degradability were measured by nylon bags. The results showed that SH and FE separately and combination, significant differences were observed in DM, OM, ASH, EE, NDF and ADF compared to control at low levels. The results of degradability also showed that SH and FE increased the degradability separately and combination at incubation times. Also, the results of gas production showed that SH and FE increased the amount of gas produced in different time of incubation compared to the control treatment.

Keyword: fibrolytic enzyme, nutritional value, palm kernel, nylon bag, gas production, Sodium hydroxide



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