Abstract

The present experiment was conducted to determine the chemical composition and nutrative value of date palm leaf (DPL) treated with fibrolytic enzyme and beam electron irradiation. The date palm leaf collected randomly from Jiroft city. The treatments were divided at three levels of radiation (0, 150 and 300 killo gray) and three levels of fibrolytic enzyme (0, 1.5 and 3 g/kg). Chemical compositions include dry matter (DM), organic matter (OM), crude protein (CP), ether extract (EE), NDF and ADF with standard method, organic matter digestibility (OMD) and metabolizable energy with *in vitro* gas production and degradability of DM measured with *in situ* method were determined. The results showed irradiation and fibrolytic enzyme increased ($P<0.05$) OM and CP and decreased ($p<0.01$) NDF and ADF content of sample. but this increase and decrease in high level of enzyme (3 g/kg) and high level of irradiation (300 killo gray) compare with low level of irradiation (150 killo gray) and low level (1/5 g/kg) of enzyme was better. Results showed that irradiation and enzyme increase degradation and gas production at all times of incubation. The beam electron irradiation and fibrolytic enzyme together had better effects on DPL compare with treat each separately. As a result, the beam electron irradiation (at 300 killo gray level) with 3 g/kg of enzyme addition recommended to improved nutritive value of DPL.

Key words: Date palm leaf, Irradiation, Fibrolytic enzyme, *in situ* DM degradability, *in vitro* gas production

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