



University of Zabol

Graduate school

Faculty of Agriculture

Department of Animal Science

The Thesis Submitted for the Degree of Master of Science

(In the Field of Animal Nutrition Science)

**Effect of beam electron irradiation and fibrolaytic enzyme on
ruminal degradation and in vitro gas production of millet
forage**

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Abstrac

This study was conducted to determine the chemical composition and nutritional value of millet processing and enzyme-ray, electron beam-fibrolytic was done. For this purpose, samples were collected randomly Sistan millet farm dam. The experiment consisted of millet (control), millet with a dose of 150 kGy, 300 kGy dose millet, millet with 1.5 grams of enzyme per kg of dry matter, millet with 3 grams of enzyme per kilogram of dry matter, forage millet dose of 150 kGy + 1.5 grams of enzyme per kg, forage millet dose of 150 kGy + 3 grams of enzyme per kg, the dose of 300 kGy + 1.5 grams of enzyme millet, millet with a dose of 300 kGy + 3 grams of enzyme Were examined. the chemical compositions including dry matter (DM), ash, organic matter (OM), ether extract (EE), curde protein (CP), cell well and cell well without hemicelluloses fractions were measured according to the standard procedure (AOAC), Organic matter digestibility, and metabolizable energy in form of gas production technique (*in vitro*) degradation of dry matter using nylon bags (*in situ*) method. The results showed that radiation and fibrolytic enzyme separately and simultaneously at any level significant effect on dry matter, organic matter, crude fat and ash. However, the significant increase in crude protein and decreased significantly the cell wall and no cell wall hemicellulose compared to control ($P<0/05$). Results also showed that radiation degradation and fibrolytic enzyme to separately statements and have simultaneously increased the degradation of all time period of incubation ($P<0/05$). Also, results showed that gas production and enzyme Electron-Beam Irradiation fibrolytic the amount of gas production increased compared to control ($P<0/05$).

Key words: Millet forage, Radiation, Fibrolytic enzyme, Gas production, Digestibility