

Abstract

An *in vitro* gas production technique and dry matter degradability (*in vitro*) was conducted to assess the effect of different treatment milling, roasting, water boiling (0.5, 1, 2 and 4 h) and oven drying (65, 95 and 125 °C for 4, 8 and 12 h) on fermentation parameters of flaxseed. All the treatment preparations were followed by milling in a 2 mm screen and a sample of 500 mg of each treatment was weighed into serum bottles in a completely randomized design. The potential of gas production (A) significantly ($P<0.01$) decreased as the time of roasting increased. Furthermore, milling the flaxseed had the greatest potential gas production ($P<0.01$). Potential and fractional constant rate of gas production (C) was significantly ($P<0.01$) decreased as the time of boiling increased. Overall, milling the flaxseed resulted significant higher potential of gas production compared to boiling. Methane production and M/D of the water boiled flaxseed reduced significantly ($P<0.05$) as the time of boiling increased. Oven drying at 125°C for 12 hour showed the lowest DMD and methane production among other heating times and it was approximately 40% lower than oven dried flaxseed at 125 °C for 4 hour. This research showed that processing of whole flaxseed

Keywords: Flaxseed, *In vitro*, Milling, Roasting, Oven drying, Boiling



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Title

The effect of Physical Processing of Flayseed on *in vitro* Ruminant Fermentation Parameters

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