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**Effect of microwave irradiation on *in vitro* gas production parameters of linseed**

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The effect of microwave irradiation on *in vitro* gas production kinetics of linseed was investigated. Samples were milled (1 mm), then exposed to a 2,450 MHz continuous microwave radiation by an average specific absorption rate (SAR) of 75.5 W/kg for 0.0 (CON), 10, 30, 60, 120 or 150 seconds. Approximately 500 mg of oven dried sample was incubated with 50 ml buffered rumen fluid (ratio of buffer to rumen fluid was 2:1) in a 125 ml glass bottle (n=9) at 38.6 °C using water bath for 2, 4, 6, 8, 12, 24, 48 and 72 h. Cumulative gas production values were corrected for blank incubation and fitted to an exponential equation $Y=b(1-e^{-(ct-l)})$, where b is the gas production from the fermentable fraction (ml), c is the gas production rate constant for b, t is the incubation time (h), l is lag time (h) and Y is the gas produced at time t. Data were analyzed using the GLM procedure of SAS 9.2 and the means were compared by the LSD test ($P<0.05$). The amount of gas produced from the fermentable fraction (b ± SE) was $53.3^{b}$±0.83, $48.4^{c}$±0.88, $56.4^{a}$±1.59, $42.9^{d}$±0.97, $31.8^{f}$±1.08 and $37.0^{e}$±0.78 ml; The fractional constant rate (c ± SE) was $0.058^{a}$±0.0024, $0.055^{a}$±0.0025, $0.044^{b}$±0.0028, $0.051^{ab}$±0.0026, $0.045^{b}$±0.0034, $0.046^{b}$±0.002 h; and the lag time (l ± SE) was $0.7^{c}$±0.19, $1.4^{b}$±0.19, $1.6^{b}$±0.28, $2.8^{a}$±0.19, $2.6^{a}$±0.29, $2.7^{a}$±0.18 h for 10, 30, 60, 120 and 150 s, respectively. Irradiation for 30 s caused to increase the amount of gas produced significantly ($P<0.05$) from the fermentable fraction (b) compared with CON. Irradiation for 30, 120 or 150 s decreased the fractional constant rate (c) of the samples than that of the CON. Furthermore, irradiation significantly increased fermentation lag time ($P<0.05$). Results indicated that the microwave irradiation for more than 60 s might significantly reduce both b and c parameters and could increase fermentation lag time.



**Comparison of the effects of three different diets on growth curves**

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The purpose of this study was to compare the effects of three different diets containing 0 mg/kg, 30 mg/kg and 45 mg/kg organic ZnO on growth curves. Different diets were given after weaning period. Growth curves of Karayaka lambs were analyzed using body weights measured at ages 1 (birth weight) to 174 d for each diet groups. Linear, quadratic and cubic curves were estimated. Analysis results showed that cubic growth curves has minimum error sum of squares and maximum coefficient of determination which were 0.38 and 0.995, 0.35 and 0.997, 0.21 and 0.997 for diets 0 mg/kg, 30 mg/kg and 45 mg/kg organic ZnO, respectively. The models for diets were estimated as $3.304 + 0.073t + 0.0011t^2 - 0.000022t^3$, $3.301 + 0.052t + 0.0014t^2 - 0.000003t^3$ and $3.447 + 0.112t + 0.00035t^2 + 0.000002t^3$, respectively (t: days). Effects of the diets were not statistically significant on growth curves. Results mean that parameters of the models could be admitted as same. Superiority of cubic models, it may be result of rapid growth after weaning than pre-weaning.