

EFFECT OF SUPPLEMENTATION OF MARJORAM AND THYME ON RUMEN FERMENTATION PARAMETERS

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The objective of this study was to evaluate the effect of adding marjoram and thyme plants at 4, 12, 20, 28 mg to the dry matter used in the incubation media of an *in-vitro* rumen model. Digestibility of dry matter (IVDMD) , organic matter digestibility (IVOMD) , total gas production (TG) , pH , ammonia (NH₃) and Volatile fatty acid (VFA) were studied. Compared to control, pH was affected with supplementation of plants at different levels, and was significant with thyme at level of 28 mg, and with marjoram at level of 20 mg.. Significant differences were also observed between lowest level added of both plant, compared to control for NH₃, while for VFA and IVDMD, there were no significant difference among the groups. IVOMD was significantly higher in thyme at both levels 20 and 28 mg at 45.6%, 46.85%, compared with control at 41.3% , respectively. Total gas (TG) production was significantly higher at level 28 mg in both plants compared with control group.

Based on these results, it may be concluded that addition of medicinal and aromatic herbal plants (marjoram (*Origanum majorana*), thyme (*Thymus vulgaris*)), especially at highest levels tested, has a great potential in manipulating rumen fermentation, which may be of benefit when applied in ruminant nutrition.

Keywords: Marjoram, thyme, *in vitro*, digestibility