

THEME 9 | RUMINANT NUTRITION AND PRODUCTION

***In situ* degradability of marandu palisadegrass in grazing cows
supplemented or not with soybean oil**

Ana Karina Dias Salman^{*2,4}, Pedro Gomes da Cruz^{2,4}, Francielle Ruana Faria^{1,7}, Elaine Coimbra de Souza¹, Giovanna Araújo de Carvalho¹, Lilian da Silva Oliveira Castilho^{3,5}, Vanessa Rodrigues Bernardo^{3,5}, Eduardo Schmitt^{2,6}

¹Animal Scientist, ²Researcher, ³Student of Animal Science, ⁴EMBRAPA, Porto Velho, RO; ⁵FIMCA, Porto Velho, RO, Brazil, ⁶UFPEL, Pelotas, RS, Brazil, ⁷IFRO, Ariquemes, RO, Brazil
**ana.salman@embrapa.br*

Fats and oils are very concentrated sources of energy; they contain about 2.25 times as much digestible energy as the carbohydrates in grain. They are added to animal feeds to increase the energy density of the ration. However, the excess of fat or oil can inhibit fiber digestion in the rumen. The objective of this work was to evaluate the *in situ* degradability of dry matter (DM) of marandu palisadegrass in grazing cows non-supplemented or supplemented with concentrate or soybean oil. Trial was carried out at experimental field of Embrapa, Porto Velho, RO, Brazil. Three crossbred rumen-cannulated dry cows grazing marandu palisadegrass (*Urochloa brizantha* Stapf cv. Marandu) pasture managed by intermittent stocking with two days of occupation and 28 days of resting. Animals were distributed in 3x3 Latin square design with three 14-day periods (10 days for diet adaptation and 4 days for rumen incubation) and three treatments: non-supplementation (NS), supplementation with concentrate (SC) and supplementation with concentrate plus soybean oil (SO). Ingredients of concentrate were corn, soybean meal, urea and mineral, which were balanced for 30% of crude protein (CP) and 80% of total digestible nutrients (TDN). Soybean oil (7% on DM basis) was homogeneously mixed to SO concentrate just prior the meal. Daily, two kg per cow of each concentrate were offered in two equal meals at 8 a.m. and 4 p.m. The grass samples were taken by hand-plucked method. For *in situ* trial, 0.5 grams of 1-mm milled grass placed in 25-cm² TNT100 bags was rumen incubated for 0, 6, 12, 36, 48 and 96 hours. Potential Degradability (PD) was estimated by the model $PD = a + b \cdot (1 - e^{-ct})$. Effective Degradability (ED) was estimated by the model $ED = a + (b \cdot c) \cdot (c + k)^{-1}$, considering passage rate (Kp) of 5 % hour⁻¹. The marandu palisadegrass had 8.08 % of CP, 59.77% of NDF and 30.04% of ADF. There were no differences among treatments. The PD (%), ED5% and the parameters a (soluble fraction, %), b (insoluble potentially degradable, %) and Kd (degradation rate of b fraction, % h⁻¹) of palisadegrass DM in non-supplemented cow (NS treatment) were: 69.79, 28.12, 13.29, 56.50 and 1.78, respectively; in the SC treatment were: 74.60, 32.79, 12.98, 61.63 and 2.37, respectively; in the SO treatment were: 73.34, 32.74, 13.26, 60.08, 2.4, respectively. The concentrate supplementation with or without 7% of soybean oil do not affect rumen DM degradation of marandu palisadegrass.

Keywords: rumen degradation, dairy cattle, tropical grass

Acknowledgments: To National Counsel of Technological and Scientific Development (CNPq) (Brazil) for financial support of this project (Grant n, 478318/2013-8).