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Authors: E.H. Yoshimura, N.W. Santos, E. Machado, B.C. Agustinho, L.M. Pereira, S.C. de Aguiar, R. Franzolin, E. Gasparino, G.T. dos Santos, L.M. Zeoula

PII: S0377-8401(17)31515-8
DOI: https://doi.org/10.1016/j.anifeedsci.2018.04.024
Reference: ANIFEE 13996

To appear in: *Animal Feed Science and Technology*

Received date: 27-11-2017
Revised date: 26-4-2018
Accepted date: 30-4-2018

Please cite this article as: Yoshimura EH, Santos NW, Machado E, Agustinho BC, Pereira LM, de Aguiar SC, Franzolin R, Gasparino E, dos Santos GT, Zeoula LM, Effects of dairy cow diets supplied with flaxseed oil and propolis extract, with or without vitamin E, on the ruminal microbiota, biohydrogenation, and digestion, *Animal Feed Science and Technology* (2010), https://doi.org/10.1016/j.anifeedsci.2018.04.024

Effects of dairy cow diets supplied with flaxseed oil and propolis extract, with or without vitamin E, on the ruminal microbiota, biohydrogenation, and digestion

Short title: Flaxseed oil and antioxidants in dairy cow diets

E. H. Yoshimura[a], N. W. Santos[a]*, E. Machado[a], B. C. Agustinho[a], L. M. Pereira[a], S. C. de Aguiar[b], R. Franzolin[c], E. Gasparino[a], G. T. dos Santos[a], L. M. Zeoula[a]

[a] Departamento de Zootecnia, Universidade Estadual de Maringá, Maringá, Paraná 87020900, Brazil

[b] Departamento de Zootecnia, Universidade do Estado de Mato Grosso, Pontes e Lacerda, Mato Grosso 78250000, Brazil

[c] Departamento de Zootecnia, Universidade de São Paulo, Pirassununga, São Paulo 13635900, Brazil

*Corresponding author. Tel.: +55 44 3011 8958; fax: +55 44 3011 8977.

E-mail address: santos.woruby.n@gmail.com (N.W. Santos).

Highlights

- A flaxseed oil diet was added with a propolis product and vitamin E for dairy cows.
- The propolis-based product is rich in phenolic compounds, mainly Artepillin C.
- Flaxseed oil diet reduced rumen protozoa and bacteria involved in lipolysis.
- The propolis-based product enhanced *Butyrivibrio fibrisolvens* count in the rumen.
- Association of antioxidants did not alter intake, digestibility, and fermentation.