

## Aberystwyth University

### *Evaluation of a Colombian oregano oil (*Lippia organoides* Kunth) and a novel yeast product from *Pichia guilliermondii*, alone or in combination, on rumen fermentation, methanogenesis and the microbiome in the rumen simulation technique*

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**Supplemental Table 1.** Ingredients and chemical composition of the experimental diet.

Ingredients (g/kg)	
Alfalfa hay	500
Barley	299.5
Molasses	100
Soya bean meal	91
Vitamin premix <sup>1</sup>	9.5
Composition (g/Kg DM)	
Organic matter	920
Nitrogen	18.8
Neutral detergent fibre	516
Acid detergent fibre	259
Gross energy (KJ/Kg DM)	165

<sup>1</sup>Rumins Cattle GP (Rumeco Ltd, UK.) Declared composition: Ca 240, P 20, Mg 50, Na 80, Se 0.03, Co 0.09, I 0.4, Mn 3, Zn 4 and Cu 1.5 g kg<sup>-1</sup>, retinol 4×10<sup>5</sup>, cholecalciferol 8×10<sup>4</sup> and alphotocopherol 10<sup>3</sup> IU kg<sup>-1</sup>

**Supplemental Table 2.** Effect of supplementing a control diet (C) with oregano oil (EO), yeast (Y) or a combination of both (EO+Y) on relative abundance of bacteria families present at an average of more than 0.5% (false discovery rate for Benjamini-Hochberg:0.25).

	Treatment				SED			Benjamini-Hochberg P-value		
	Control	EO	Y	EO+Y	EO	Y	EOxY	EO	Y	EOxY
Prevotellaceae	0.092	0.246	0.107	0.289	0.016	0.016	0.023	0.002	0.812	0.757
Streptococcaceae	0.112	0.151	0.134	0.113	0.027	0.027	0.039	0.749	0.869	0.686
Anaeroplasmataceae	0.031	0.019	0.029	0.018	0.005	0.005	0.007	0.075	0.869	0.957
Ruminococcaceae	0.022	0.007	0.020	0.005	0.002	0.002	0.004	0.002	0.812	0.957
Lachnospiraceae	0.034	0.024	0.026	0.026	0.004	0.004	0.006	0.282	0.812	0.627
unclassified	0.262	0.122	0.238	0.203	0.036	0.036	0.050	0.061	0.812	0.627
Rikenellaceae	0.017	0.030	0.015	0.017	0.005	0.005	0.007	0.183	0.812	0.686
Porphyromonadaceae	0.047	0.020	0.053	0.008	0.006	0.006	0.009	0.002	0.869	0.627
Veillonellaceae	0.013	0.001	0.013	0.001	0.001	0.001	0.002	0.002	0.869	0.957
Spirochaetaceae	0.037	0.018	0.038	0.018	0.005	0.005	0.007	0.004	0.869	0.957
Christensenellaceae	0.006	0.013	0.007	0.007	0.002	0.002	0.003	0.135	0.812	0.627
Eubacteriaceae	0.004	0.005	0.005	0.005	0.002	0.002	0.002	0.735	0.869	0.957
Erysipelotrichaceae	0.028	0.254	0.024	0.154	0.024	0.024	0.033	0.002	0.583	0.535
Bdellovibrionaceae	0.006	0	0.017	0	0.007	0.007	0.010	0.182	0.812	0.757
Marinilabiliaceae	0.161	0.016	0.141	0.003	0.031	0.031	0.044	0.002	0.869	0.957
Fibrobacteraceae	0.031	0	0.039	0	0.005	0.005	0.007	0.002	0.812	0.757
Candidatus Endomicrobium	0.012	0	0.020	0	0.006	0.006	0.009	0.051	0.812	0.757
Bacteroidales_incertae_sedis	0.018	0.030	0.007	0.064	0.010	0.010	0.014	0.016	0.812	0.535
Subdivision5_genera_incertae_sedis	0.020	0.001	0.018	0.001	0.003	0.003	0.005	0.002	0.869	0.957
Succinivibrionaceae	0.004	0	0.017	0	0.005	0.005	0.007	0.084	0.812	0.627
Lactobacillaceae	0.011	0.004	0.010	0.005	0.003	0.003	0.004	0.075	0.869	0.957
Acidaminococcaceae	0.010	0.035	0.009	0.058	0.004	0.004	0.006	0.002	0.583	0.396