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Methane emissions in sheep infected with parasitic nematodes and supplemented with *Acacia mearnsii*

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Our objective was to evaluate the effects of *Acacia mearnsii* bark extract (PAB) on methane (CH₄) production in sheep infected with *Trichostrongylus colubriformis* and *Haemonchus contortus*. Twenty 10 month-old Santa Inês lambs were used in a 50-day trial. Four treatment groups were formed: two control groups uninfected, one without PAB (C-) (n=4) and one with PAB (C+) (n=4); and two infected groups, one without PAB (I-) (n=6) and another receiving PAB (I+) (n= 6). Animals were kept in individual pens for 40 days, and received ad libitum chopped tifton 85 hay (*Cynodon* spp.) and 210 g/animal/day of concentrate (PAB supplementation: 15 g/animal/day – in concentrate). Animals were reared indoors to avoid helminthic infections (faecal egg count (FEC) was monthly controlled). At day 0, infected groups were artificially infected with L3 larvae of *T. colubriformis* (7500) and *H. contortus* (5000). After 28 days post-infection, establishment of infections was confirmed by FEC: I-: 1150 + 530.1 and I+: 567 + 544.6 eggs/gram of feces. After 40 days of trial (during which other parameters were evaluated - data not shown), CH₄ emissions in chambers were measured and variance analysis (proc GLM, SAS®) showed no PAB effects on methanogenesis (p > 0.05), however, both infected groups had higher CH₄ emissions than the control groups: C-: 16.7 + 10.91; C+: 23.7 + 12.88; I-: 43.1 + 6.37; I+: 40.6 + 6.02 (g CH₄/kg dry matter intake) (p < 0.05). The methanogenic effect of parasitic infections should be explored in studies addressing sustainability of animal production.

Keywords: Black wattle, *Haemonchus contortus*, Small chamber, *Trichostrongylus colubriformis*, Tannins