

A blend of quebracho and chestnut extracts with saponins did not impact methane emissions in lactating dairy cows

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Increased pressure has been placed by various stakeholders on the dairy industry to reduce enteric methane (CH₄) emissions and solutions must be identified to meet these climate goals. The objective of this study was to evaluate the impact of a blend of quebracho and chestnut extracts along with a carrier from cereals rich in saponins (ByPro, SilvaFeed) on enteric CH₄ emissions. Twenty-four early to mid-lactation cows (DIM=) were blocked to treatment based on dry matter intake, parity, milk production, and days in milk. Cows were individually fed in a Calan feeding system, housed in a free stall pen, and milked twice daily at 0600 h and 1800 h. The two treatments were added as a top dress to the top of a standard ration that consisted of a CON (50 g ground corn) or ByPro fed at a rate of 0.15% dry matter. ByPro was weighed out prior to each feeding and the difference from 50 g consisted of dry ground corn. Methane emissions were recorded via the use of a pair of ventilated head chambers. Dairy cows were stagger started to treatment to allow for same day comparisons between blocks. Emissions of CH₄ and CO₂ were measured in all animals in a discontinuous pattern from 0700-0900 h, 1300-1500 h, 1900-2100 h, and 0100-0300 h. In between timepoints on measurement days, cows were returned to the free stall pen. Following a baseline covariate period (d 0) all cows had CH₄ emissions measured at 16-, 32-, 48-, and 64-d post treatment initiation. Data was analyzed using the Mixed Model of R (Version 4.2). ByPro treatment was found to not impact CH₄ emission rate (g CH₄/hr), dairy cattle dry matter intake, and milk production (P>0.05) on days of head chamber measurements. There was also no difference in dry matter intake, milk

components, or milk production from d 1-64 of treatment intervention. Similarly, no differences were identified between treatments for CH₄ intensity (g CH₄/hr/kg milk) or CH₄ yield (g CH₄/hr/kg dry matter intake). Additional research at different concentrations of ByPro is needed to evaluate the impact of this additive on lactating dairy cattle CH₄ emissions and animal performance.

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