

Sunflower oil supplementation decreased over 21% of methane emission from Holstein x Gyr lactating dairy cows grazing tropical grass

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The objective of this study was to evaluate the effect of sunflower oil supplementation on crossbred Holstein x Gyr dairy cows grazing tropical pasture. Lactating dairy cows were fed *Brachiaria brizantha* pasture managed under rotational grazing. Sunflower oil was supplemented to cows using concentrates with inclusion (14.9% DM) or not (0% DM) of sunflower oil. Dietary crude fat were 13.8% and 2.4%, respectively (DM basis).

The experimental design was a randomized block with two repetitions of pasture area with two treatments (0% and 14.9% of sunflower oil supplementation - DM basis) and four replications (cows) per treatment per block. Sixteen lactating cows Holstein x Gyr (240 ± 10 days in milk, 524 ± 57 kg³ of live weight, 11.2 ± 2.3 kg/d of milk) were used in this study. Methane emissions was estimated by the SF₆ (sulfur hexafluoride) tracer technique. Data were analyzed using a mixed procedure of SAS where dietary treatments, blocks and cows were considered as fixed effects, and cow within block as random effect. Methane emission expressed as g CH₄/day and g CH₄/kg of dry matter intake (DMI) decreased 21.5% (P=0.06) and 20.2% (P=0.03), respectively, on cow supplemented with sunflower oil compared to unsupplemented cows.

There was no effect (P=0.29) of sunflower oil supplementation on CH₄ emissions expressed as g CH₄/kg of milk. Lactating dairy cows grazing tropical grass pasture supplemented with 14.9% sunflower oil (DM basis) demonstrate a potential for mitigating methane emissions without negatively affecting cow performance.