

# TWICE DAILY CALCIUM PEROXIDE SUPPLEMENTATION ON ENTERIC METHANE EMISSIONS OF GRAZING DAIRY COWS

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## INTRODUCTION

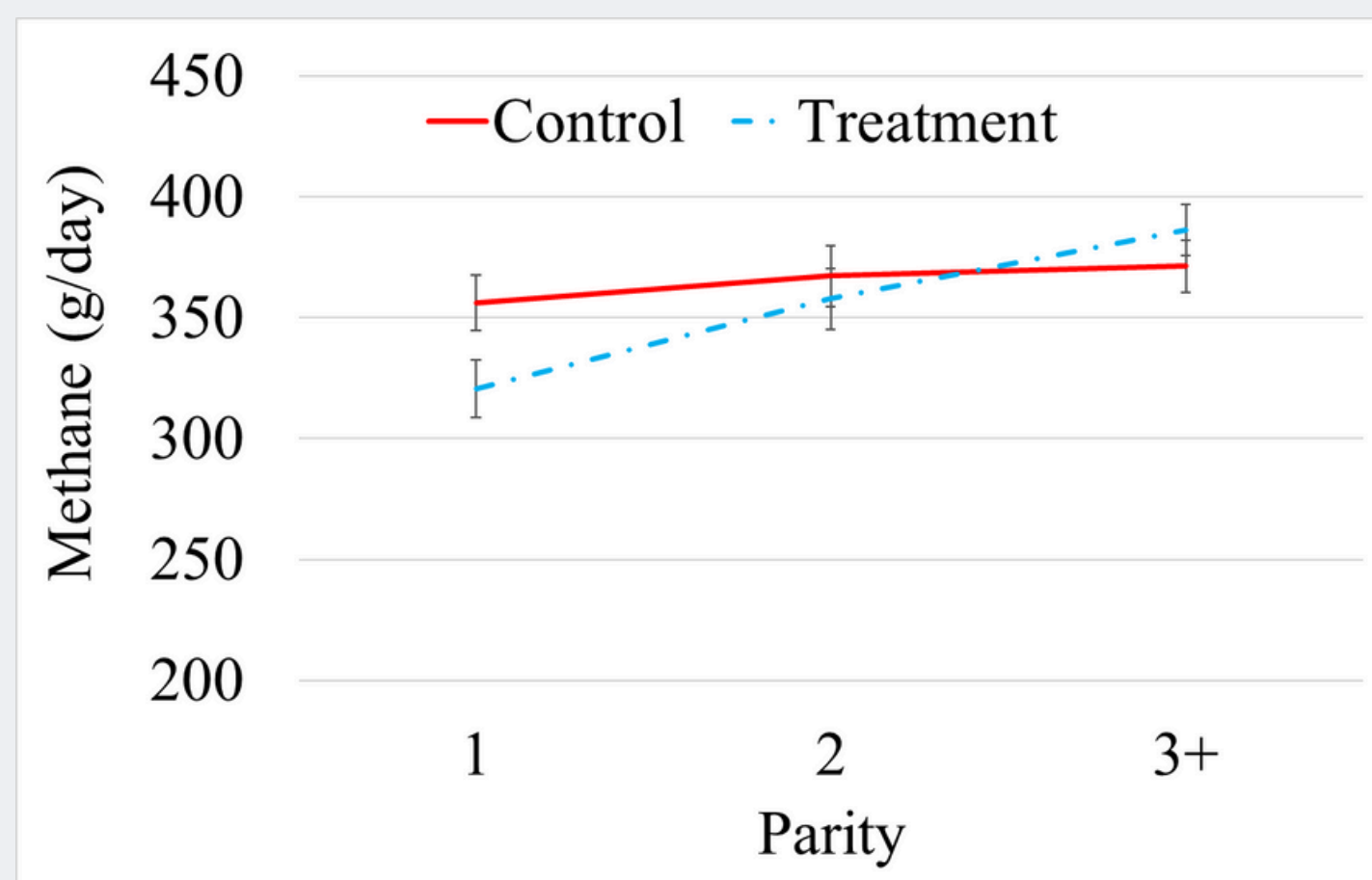
Enteric methane (CH<sub>4</sub>) accounts for 63% of agricultural greenhouse gas emissions in Ireland. Feed additives may provide the solution to Ireland achieving emissions reductions targets of 25% by the year 2030, relative to 2018 levels. To have practical application in grazing systems, additives must be capable of being fed through in-parlour feeders. A novel calcium peroxide (CaO<sub>2</sub>) based feed additive, which can be pelleted and fed through in-parlour feeders, is effective at reducing enteric CH<sub>4</sub> when fed twice daily to beef steers on a grass silage based diet. Its efficacy has not yet been tested in dairy cows.

## METHODS



## RESULTS

There was no significant effect of CaO<sub>2</sub> supplementation on milk yield, milk solids, body weight or body condition score. There was no significant effect of CaO<sub>2</sub> supplementation on CH<sub>4</sub> (P = 0.293), however, the interaction between treatment and parity tended to be significant (P = 0.078). As such, CaO<sub>2</sub> supplementation reduced enteric CH<sub>4</sub> by -9.9 % in parity 1 animals, while enteric CH<sub>4</sub> was similar for parity 2 animals and slightly higher for parities 3+ in CaO<sub>2</sub> supplemented cows (+4.0 %). Calcium peroxide was more effective in parity 1 animals, likely because they had a higher feeding rate of CaO<sub>2</sub> relative to their dry matter intake.



Furthermore, as CaO<sub>2</sub> can be pelleted without detriment to its efficacy, it has practical application in grazing systems in which the main opportunities for additive supplementation are during milking twice daily.



## CONCLUSION

Future research should focus on increasing the inclusion rate of CaO<sub>2</sub> to improve the CH<sub>4</sub> abatement potential of the additive across all parities

### ACKNOWLEDGEMENTS

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