

## Palatability of a Garlic and Citrus Extract Feed Supplement to Enhance Energy Retention and Methane Production in Ruminants in vivo

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**Abstract :** Manipulation of rumen bacteria is receiving increasing attention as a way of controlling greenhouse gas (GHG) emissions that are generated by the agricultural sector. Feed supplementation in particular is one of the ways in which this drive is being addressed, in particular with reference to livestock-generated GHG emissions. A blend of naturally occurring chemical extracts obtained from garlic and bitter orange extracts has been identified as a natural, sustainable and non-antibiotic based way of reducing methane production by ruminant livestock. In the current study, the acceptability and impact of this blend of natural extracts on feed rations of beef cattle was trialed in vivo on a commercial farm in Europe. Initial findings have demonstrated acceptable palatability, with all animals accepting the feed supplement into their ration both when it was mixed into the total daily ration and when used as a part of their high energy rations. Measurement of the impact of this feed supplement on productivity weight gain and milk quality is ongoing. In conclusion, this field study confirmed the palatability of the combination of garlic and citrus extracts and hence pointed to possibility of the extract blend to improve digestion, enhance body energy retention and limit CH<sub>4</sub> formation in relation to feed intake.

**Keywords :** citrus, garlic, methane reduction, palatability, ruminants

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