REPORT / PROJECT No. DE230802

EXECUTIVE SUMMARY

CONFIDENTIAL

DATE PREPARED:	May 30, 2024
PROJECT NUMBER:	DE230802
STUDY TITLE:	Feeding Seaweed to Accelerate Enteric Methane Emissions Reductions in Central Valley Dairies
PRINCIPAL INVESTIGATORS:	Alfonso Lago, DVM, Dipl. ABVP-Dairy, PhD and Bruna Calvo, BS, PhD
BIOSTATISTICIAN:	Ainhoa Valldecabres, DVM, PhD
SPONSOR:	Mooteric LLC
OBJECTIVE:	Evaluate the methane-mitigating benefits of seaweed-based feed additives within the regular feed rations of Central Valley dairy cows on milk yield and composition, dry matter intake, feed efficiency, body weight, enteric emissions and nutrient digestibility.
DATE INITIATED:	September 18th, 2023

Dairy Experts
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Signature: Date:

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The objective of this study was to evaluate the effects of seaweed-based feed additives containing bromoform on milk yield and composition, dry matter intake, feed efficiency, body weight, enteric emissions, and nutrient digestibility. A total of 60 Holstein cows on their 2nd or 3rd and 4th parity at 204 ± 7 days in milk were blocked by milk yield and randomly assigned to: a) control (no seaweed added to the TMR); b) ShiLai™ *Asparagopsis taxiformis* pellets added to the TMR at a rate of 0.50% of DM; or, c) Alga Biosciences product added to the TMR also at a rate of 0.50% of DM from enrollment to day on supplementation 21. The rate was reduced to 0.25% of DM from day 22 to the end of the study (day 42). Cows were housed in a single group and fed *ad libitum*. Individual cow TMR intake was recorded through the Biocontrol CRFI feed intake control and measurement system, and enteric methane emissions were measured using GreenFeed units. Individual milk yield was recorded using AfiMilk electronic milk meters, and milk fat and protein were measured using optical in-line analyzers at each of two daily milkings. Treatment and treatment by time effects claimed at $P<0.05$ were assessed by multiple linear regression. Supplementation of AB or AT at 0.50% of DM resulted in a ~90% decrease of enteric methane emissions, however, it also resulted on an overtime decrease and overall lower milk production compared to control cows, potentially driven by lower DMI observed in cows supplemented with both products. Supplementation of TMR with AB or AT at 0.25% of DM resulted in a 36-41% decrease of enteric methane emissions, and although a trend to decrease DMI, the magnitude of the effect was smaller compared with the higher dose, as well as the differences in production parameters as detected by time conditional effects. In conclusion, both seaweed-based feed additives effectively decreased enteric methane emissions in a dose-response manner and additional research is needed to evaluate the optimal dose to achieve an important reduction on methane emission without compromising the cow's performance, as well to evaluate the long-term methane inhibiting effects of these seaweed-based feed additives containing bromoform.