



Enteric methane emission of Holstein and Jersey dairy cows at high dietary concentrate proportions

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Objective

To examine the extent of reducing enteric methane emission of lactating Holstein and Jersey cows with diets high in concentrate proportion

Material and Methods

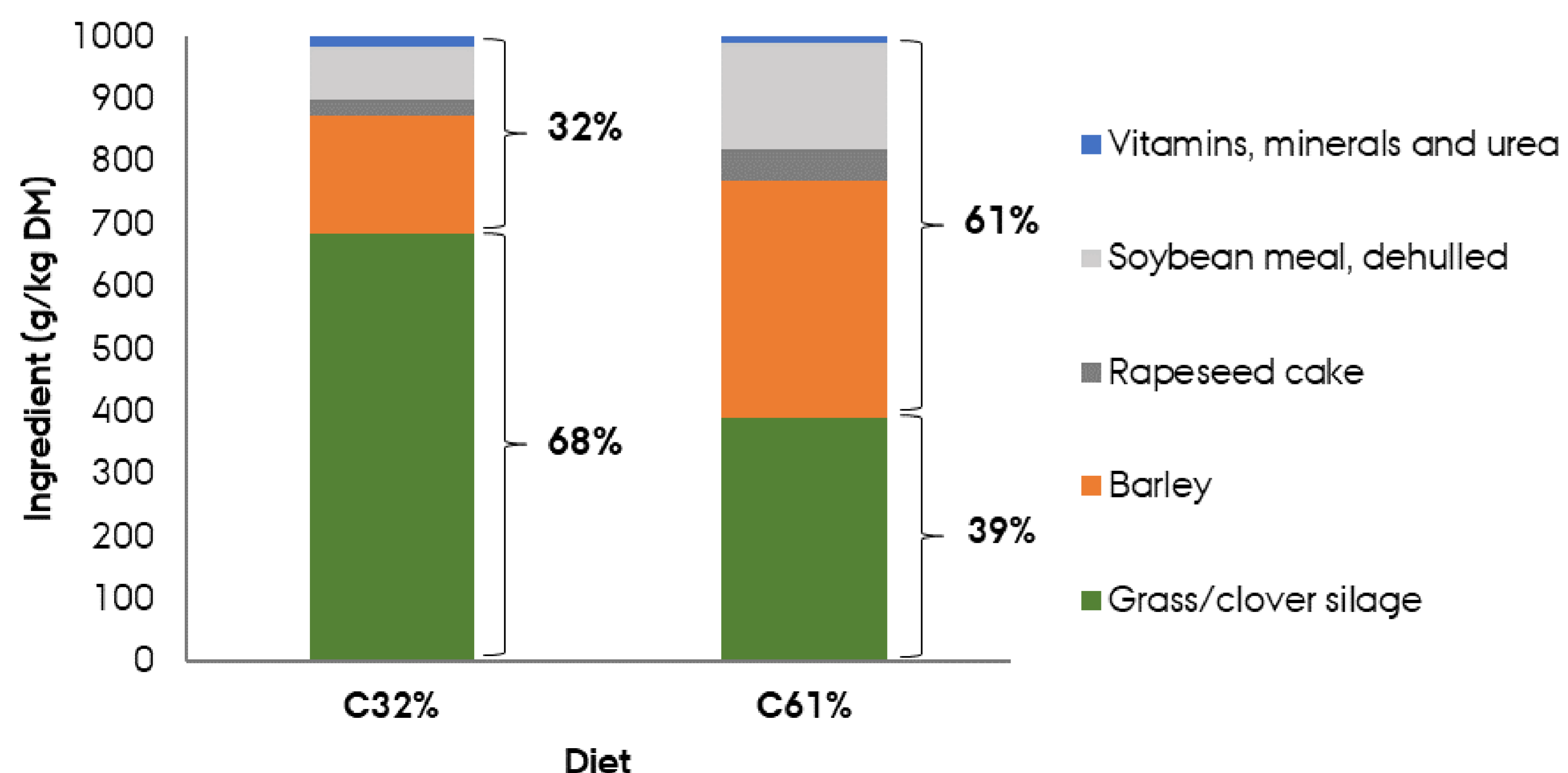
Experiment 1 (Olijhoek et al., 2018):

- 10 Holstein and 10 Jersey
- Design: cross-over with backcross (60 obs)

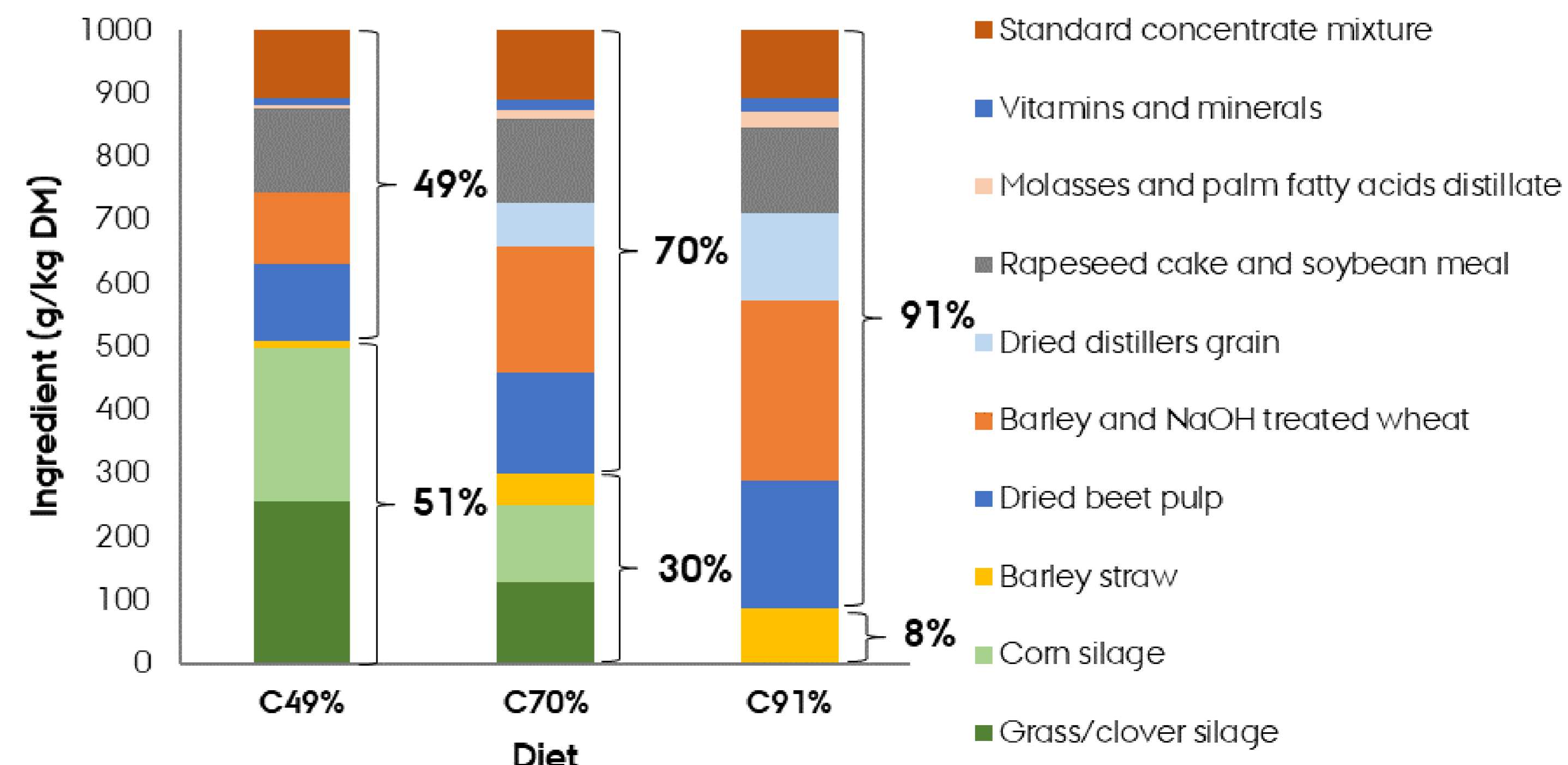
Experiment 2 (Olijhoek et al., unpubl.):

- 12 Holstein and 12 Jersey
- Design: continuous (24 obs)

Dietary composition for experiment 1



Dietary composition for experiment 2



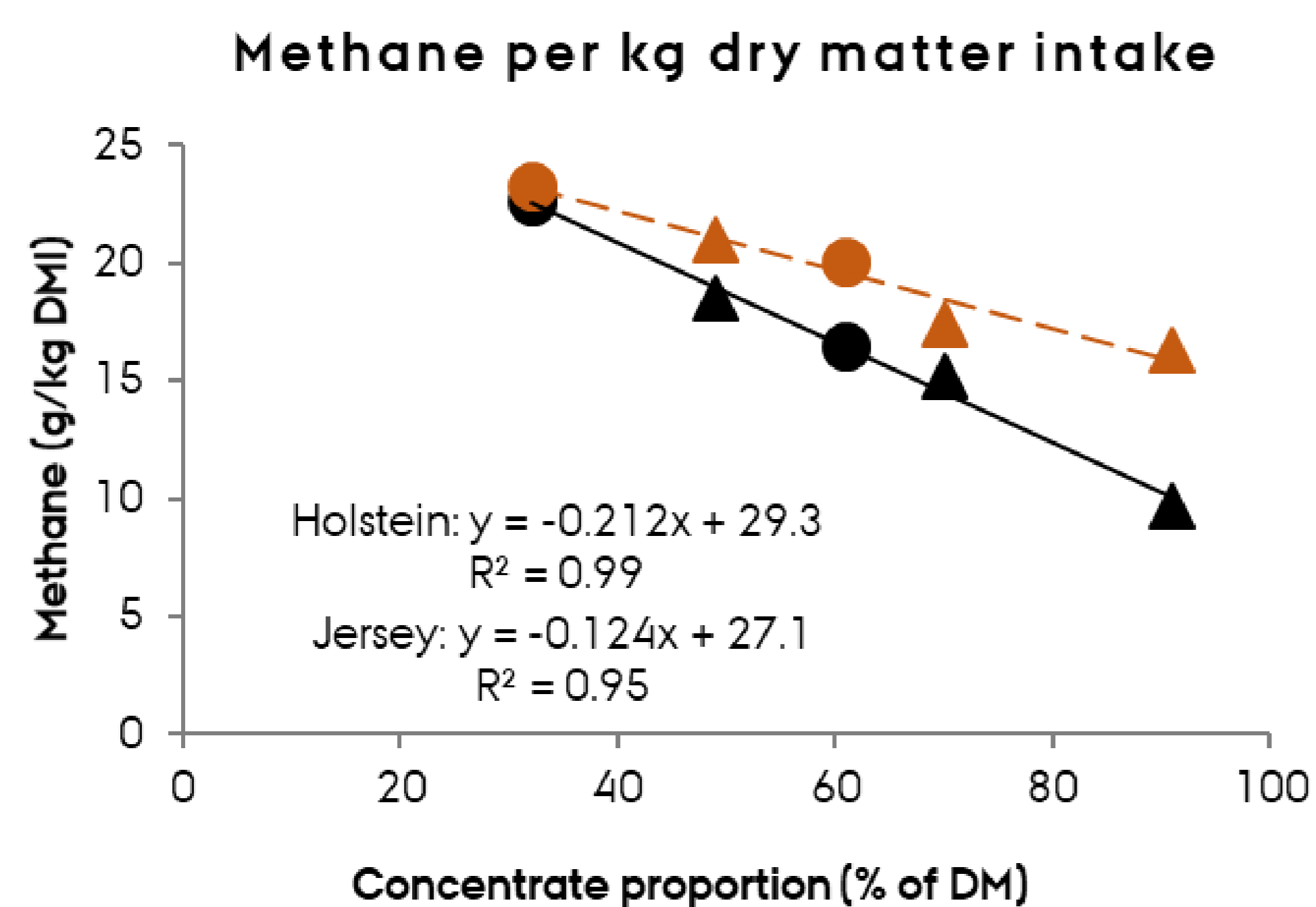
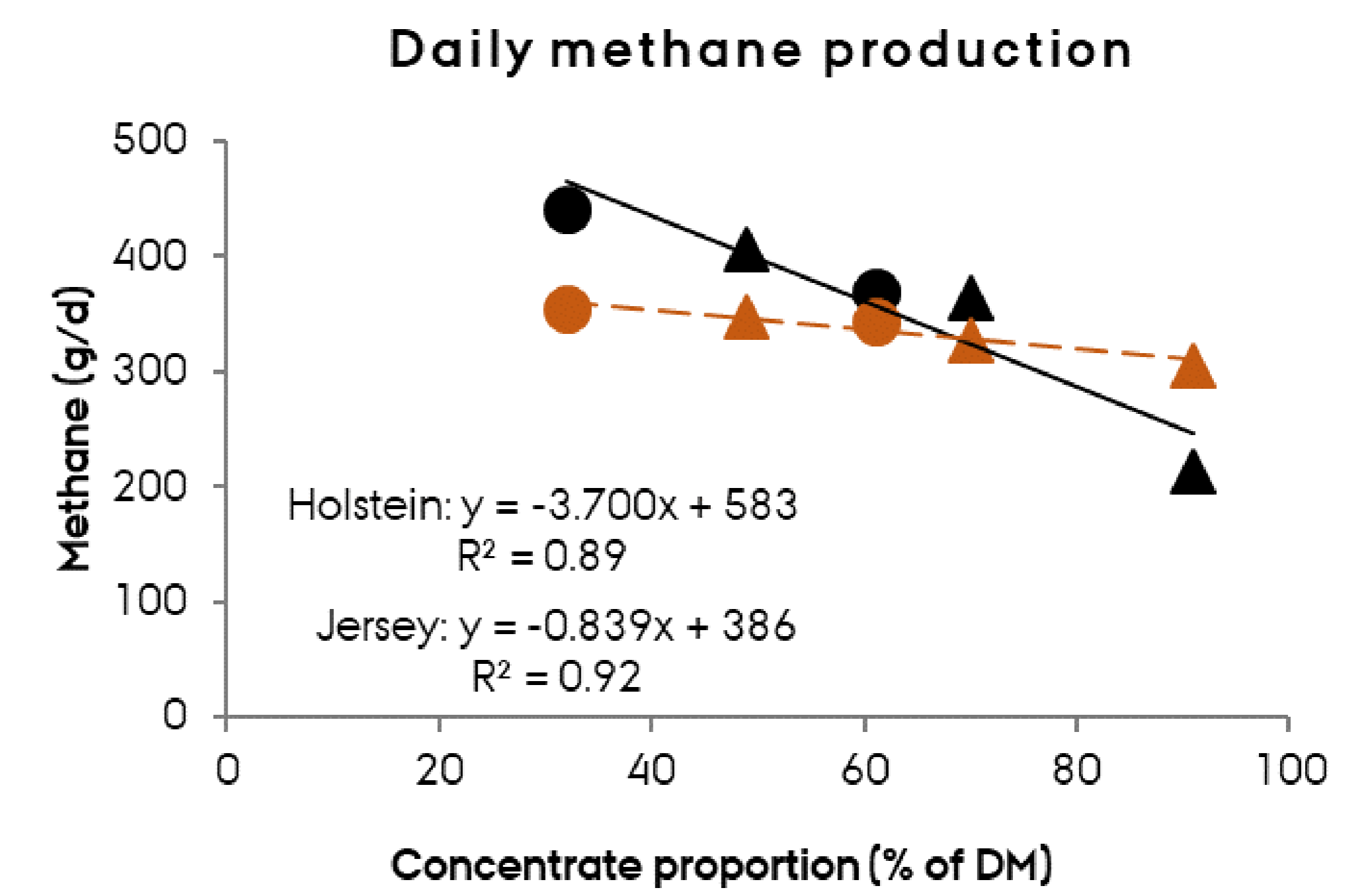
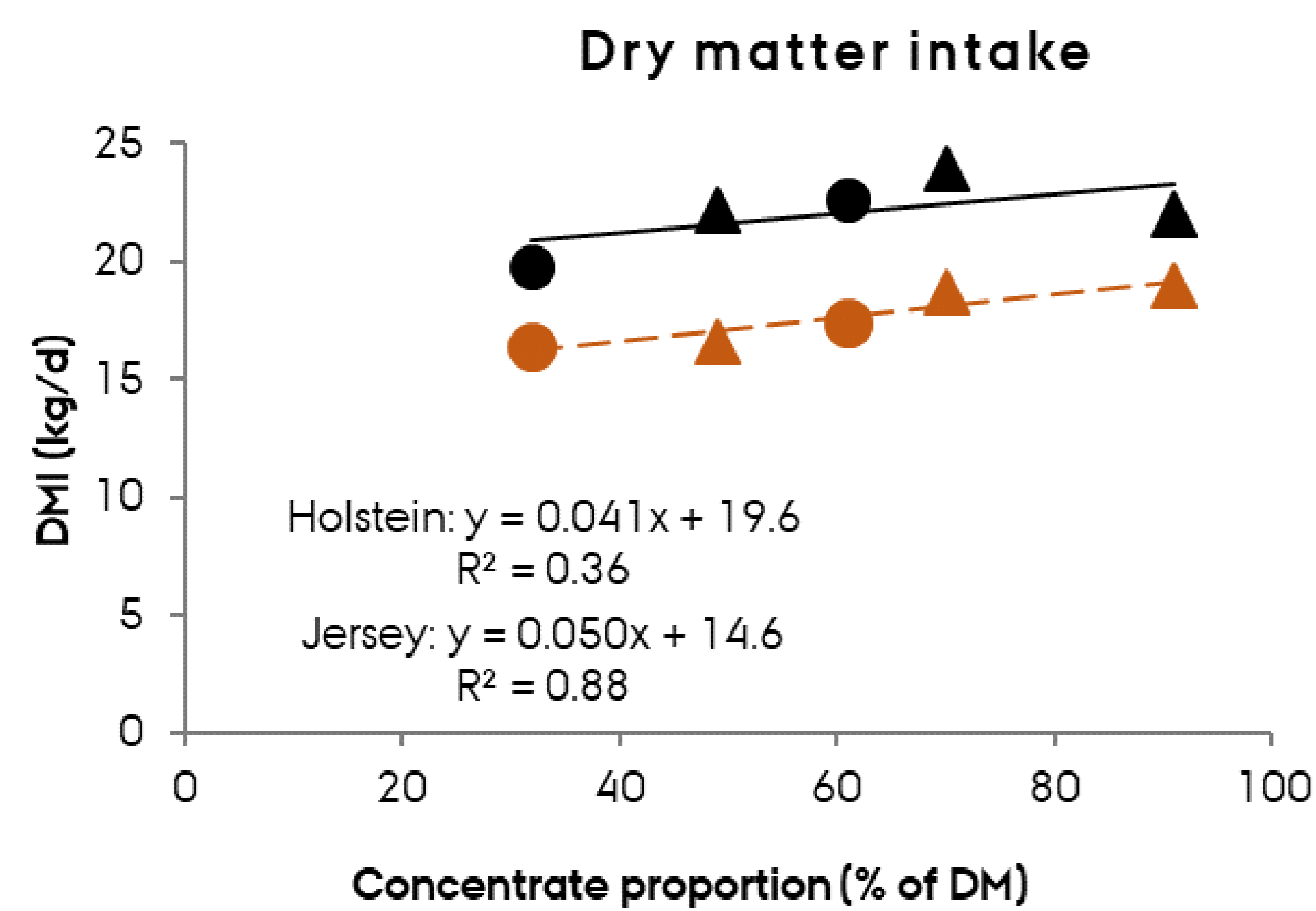


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Results



Maximum decrease for methane per kg DMI in experiment 2:

- Holstein: -48%
- Jersey: -18%



Conclusions

- 1) Increasing the dietary concentrate proportion up to 91% of DM substantially lowers enteric methane emission from Holstein, but this strategy is less effective for Jersey than Holstein.
- 2) Extremely high concentrate proportions might not be a suitable strategy due to potential compromised animal health (i.e., rumen imbalance) for Holstein, competition for human edible food, increased price of feed and increased GHG emissions from feed production.