

ID: peerj-reviewing-93247-v0-Manuscript

Title: Effect of sodium formate and lactic acid bacteria treated rye silage on ruminal fermentation characteristics and methane yield of Hanwoo

This experiment was intriguing as it elucidated the profound impact of silage, elucidating the role of microorganisms and acids in facilitating optimal fermentation conditions. The insights gleaned, particularly concerning the utilization of energy in animals, are noteworthy. While the author adeptly addresses various aspects, there remain areas where the experimental findings could be critiqued constructively for the readers' benefit. I genuinely anticipate that upon implementing the suggested revisions, the authors will further enrich the scholarly discourse within this esteemed journal.

Abstract

- Line 35: "*Lactobacillus plantarum*" (italicized) and " 1.5×10^{10} " (correctly formatted).

Results and Discussions

Regarding the discussion on experimental results, the authors should provide more focused critiques aligning with the principles established by the experimental data, ensuring clarity and relevance.

- In lines 228 to 233, inconsistencies with previously quoted information need correction. Also, reevaluation of the significance of dry matter (DM) differences as no statistical significance was found is necessary.
- Lines 236 to 238 require careful review to ensure consistency with the actual experimental results.
- Regarding lines 242 to 245, a precise explanation is needed regarding how the use of Na-FA leads to higher water-soluble carbohydrates (WSC) compared to other groups.
- In line 250, "ammonia nitrogen" should be standardized to "NH₃-N" for consistency with abbreviations used throughout the manuscript.
- Regarding lines 259-263, the decrease in acetic acid after using the acidic additive requires a direct explanation.
- Lines 263-266 lack clarity in connecting the discussed event with the author's intended message. Further elucidation is necessary to convey the significance of this event within the context of the experiment.
- In line 273, "*Lactobacillus species*" should be italicized consistently with line 275.
- Lines 270-277 require clarity on the efficacy of using the *Lactobacillus* group, along with a precise definition of "nutrient loss" to avoid confusion.
- Line 280 needs reordering to maintain coherence, as it refers to both Table 2 and Table 3.
- Lines 281 to 282 cannot be interpreted correctly if explained this way. Control requires loss and Na-FA provision must have higher gross energy.
- Lines 284 to 285 should be reconciled with lines 275-277 to avoid contradictions.
- In line 288, "NH₄-N" should be standardized to either "ammonia nitrogen" or "NH₃-N" for consistency.

- Regarding line 289, specify the threshold for "High Level" and elaborate on the implications of ammonia nitrogen levels in the control group.
- Lines 296-297 need consistent usage of terms, either abbreviations or full words, for "lactic acid bacteria" and "sodium formate."
- Lines 300 to 301 should be revised for clarity and relevance beyond comparisons with the control group.
- Lines 329 to 339 fail to provide any elucidation on how Lactic Acid Bacteria and Sodium Formaldehyde impact Iso valeric Acid. Further elaboration is needed to address this gap in the discussion.
- In lines 334 to 335, discrepancies with actual results need correction to accurately reflect the data.
- Line 342 should abbreviate "lactic acid bacteria" and "sodium formate" for consistency.
- Regarding lines 360 to 363, avoid implying that mean data has better effects without statistical support.
- In line 376, abbreviate "lactic acid bacteria" and "sodium formate" for consistency.
- Lines 399 to 401 should be revised to reflect the lack of statistical difference more explicitly.