

Manuscript No.: **IJAR-53732**

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## Title: Evaluation of Buffering Capacity of Novel Multi-Component Buffer (CRB Advance) Against Traditional Rumen Buffers in Dairy Cows

### Recommendation:

- Accept as it is .....
- Accept after minor revision.....**
- Accept after major revision .....
- Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality	✓			
Techn. Quality		✓		
Clarity		✓		
Significance	✓			

Reviewer Name: Dr Aamina

### Reviewer's Comment for Publication.

The manuscript addresses an important problem in dairy nutrition by evaluating a novel multi-component buffer, **CRB Advance**, against conventional buffering agents. The study provides practical insights into rumen health management under high-concentrate feeding regimes. The findings (lines 6–18, 69–72) suggest that CRB Advance offers sustained pH stabilization and could help prevent SARA, which is highly relevant to both research and industry. However, a few issues should be addressed to improve the clarity and technical rigor of the paper.

1. **Abstract duplication (lines 6–18):** The abstract repeats information unnecessarily (lines 6–13 and 13–18). It should be condensed into a single, coherent summary to avoid redundancy.
2. **Materials and Methods (lines 32–50):** The description lacks some details about sample size justification and statistical methods used. For example, only eight cows (two per group) is a very small sample size—this should be discussed as a limitation. Clarify whether pH differences were analyzed statistically.
3. **Results section (lines 51–72):** The description of rumen pH fluctuations is clear, but Table 1 (lines 56–66) and Graph 1 (lines 76 onward) need proper captions and formatting for better readability.
4. **Discussion (lines 78–88):** The role of marine algae polysaccharides is well explained, but references supporting their prebiotic effects should be cited more explicitly (e.g., Rafferty et al., 2019, already included).
5. **Conclusion (lines 89–94):** The conclusion is strong but should avoid overly promotional language (e.g., "highly effective solution") and instead emphasize scientific evidence.

6. **Language/Grammar:** Minor grammatical corrections are needed, e.g., "Sodium bi Carbonate" (lines 43–44, 92) should be consistently written as "Sodium bicarbonate."

Overall, the study has high originality and significance.