Review of: "Ruminal CO2 Holdup Monitoring: Acidosis Might Be Caused by CO2 Poisoning"

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Abstract:

The abstract is well-written and contains detailed scientific information. Here are some suggestions to enhance clarity and readability: Correct minor grammatical errors. Use consistent terminology (e.g., "CO_2 holdup" vs. "CO_2 gas effervescence") and simplify complex sentences wherever possible. Make sure each sentence logically follows the previous one. Rewrite the first few sentences in the abstract for a better understanding.

Introduction:

The text explains CO2's role in ruminal pH regulation and health, particularly SARA, and suggests improvements: briefly mention Arrhenius' theory, simplify complex sentences, elaborate on SCFA's significance, provide more background on SARA, explain the ATR-IR technique, use consistent terminology like "dCO2," break long sentences for readability, and ensure smooth transitions between concepts.

Materials and Methods:

The sampling procedure and subsequent calculations are well-detailed, but a flowchart or diagram could enhance visualization. Including a summary of diet compositions from Laporte-Uribe (2019) would provide useful context. Clarifying the significance of pH and dCO2 categories in ruminal health and cattle performance is essential. Figures mentioned (e.g., Fig. 2.1a-c, Fig. 2.2a-c) should be well-labeled, referenced, and accompanied by descriptive captions. While equations are presented, a step-by-step explanation of terms would assist readers. Consistency in the use of units (e.g., mM, ppm/100 g H2O) and terminology throughout the article is crucial.

Results, Discussion, and Conclusion:

To improve the transition from the facts to the novel use of ATR-IR, start by summarizing the key issues or questions that led to your study. Highlight why ATR-IR is a better option compared to manual sampling by briefly explaining its advantages. Include details on how ATR-IR addresses issues with CO2 level accuracy and measurement consistency. Provide a summary of the main findings from Table 1, such as how ATR-IR measurements show higher dCO2 values than manual methods. Conclude with recommendations for future research or practical applications, like possible enhancements to monitoring techniques or implications for dietary management.

Make sure all references are properly cited and included in a reference section at the end. Adding more recent studies or reviews can improve the background and rationale for your study. Carefully proofread for grammatical errors and typos to enhance the professionalism.

Overall, the article offers a detailed description of the study. With some revisions for clarity, structure, and additional explanations with the diagrams, it will become a strong and informative paper.