

Peer Review

Review of: "Changes in Leukocyte Indices of Holstein Cows Under Prolonged Heat Stress Conditions"

Juan Augusto Hernández-Rivera¹

1. Faculty of Veterinary Medicine and Animal Husbandry, Universidad de Colima, Mexico

Identified Inconsistencies

- **Title:** The title mentions "Prolonged Heat Stress," but the study does not define a clear duration threshold. Specify what is considered "prolonged" heat stress in the introduction or materials and methods.
- **Introduction:** Please replace old references with recent studies (2020–2025).
- **Materials and methods:** The study does not specify whether the selection of cows was randomized. Clarify the selection process to ensure reproducibility.
- **Statistical Analysis:** The manuscript states that non-parametric tests were used but does not mention normality testing. Include whether normality tests (e.g., Shapiro-Wilk) were performed before selecting non-parametric methods.
- **Results (Table 1):** Some leukocyte indices (e.g., leukocyte index) are discussed but not defined in the methodology. Define all indices in the methods section before presenting results.
- **Discussion:** The study claims findings are "consistent across species" without direct supporting references. Provide specific references to comparative studies or modify the claim.
- **Discussion:** The limitations section only mentions sample size and ignores other potential biases. Discuss other limitations, such as environmental conditions and confounding variables.
- **References:** Several citations are older than 5 years. Replace older references with recent, relevant studies.
- **Conclusion:** The conclusion does not provide practical applications or recommendations. Suggest management strategies for mitigating heat stress effects.

Evaluation of the Experimental Design and Statistical Model

- Description of the Research Phenomenon: The study effectively describes heat stress effects on leukocyte indices.
- Adherence to the Statistical Model: The statistical approach (Mann-Whitney U test for non-parametric data) is appropriate, but normality testing should be clarified. Effect sizes should also be included.

Citation Analysis

- Citations Older than 5 Years, 6 (count), that is 25%.
- Citations Within Last 5 Years, 18 (count), that is 75%.

Recommendation: Encourage the authors to update outdated references, especially in the introduction and discussion.

Alignment of Title, Objective, Hypothesis, and Conclusion

- Title & Objective: The title and objective align, focusing on heat stress and leukocyte indices.
- Hypothesis: The hypothesis is implied but should be explicitly stated.
- Conclusion Alignment: The conclusion restates findings but lacks practical applications.

General Assessment

- Relevance & Innovation: The study is relevant to dairy management but lacks novelty.
- Clarity of Language: Generally clear but could benefit from improved conciseness.
- Scientific Rigor: The methodology is sound but lacks details on sample selection and statistical validation.
- Validity & Reliability: Results appear to be based on solid data but should include effect sizes.
- Document Structure: Follows standard scientific format (Introduction, Methods, Results, Discussion, Conclusion).
- Reference Quality: Needs updates to maintain relevance.
- Originality: Moderate contribution to scientific knowledge.
- Grammar & Formatting: Generally well-written but contains minor issues.
- Ethical Standards: No ethical concerns identified.
- Replicability: The results can be replicated if methodological details are clarified.
- Scientific Language: Appropriate but should be more concise.

Final Recommendations

- Define "prolonged heat stress."
- Justify statistical choices with normality testing.
- Update literature citations, particularly in the introduction.
- Avoid overgeneralizations in the discussion.
- Provide practical recommendations in the conclusion.
- Enhance methodological transparency (randomization, blinding, effect sizes).
- Define all leukocyte indices before presenting results.
- Acknowledge additional study limitations beyond sample size.
- Explicitly state the hypothesis.
- Improve clarity and conciseness throughout the text.

This review aims to ensure scientific rigor while enhancing clarity and impact.

Declarations

Potential competing interests: No potential competing interests to declare.