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Journal Name:	**Journal of Advances in Biology & Biotechnology**
Manuscript Number:	**Ms_JABB_124745**
Title of the Manuscript:	**Influence of Seasonal Variation on Biochemical Parameters in Murrah Buffalo**
Type of the Article	**Original Research Article**

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PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	The manuscript "**Influence of Seasonal Variation on Biochemical Parameters in Murrah Buffalo**" presents valuable insights into how seasonal changes affect biochemical parameters in Murrah buffalo. However, several aspects warrant further examination. Here are the critical questions that arise from the manuscript: **Part A: General** 1. How were the hot-humid and cold seasons defined in the study? Were there specific temperature and humidity thresholds used to categorize these seasons? 2. Why were specific biochemical parameters (cholesterol, urea, uric acid, creatinine, and total bilirubin) chosen for this study? Are there other parameters that could provide additional insights? 3. Did the study account for other environmental factors (e.g., diet, housing conditions) that could influence the biochemical parameters aside from seasonal variation? 4. The manuscript references findings from other studies regarding serum creatinine and cholesterol levels. How do these comparisons enhance the understanding of the results, and what are the implications of the differing findings? 5. What physiological mechanisms are proposed to explain the observed changes in biochemical parameters during different seasons? Are there any underlying biological processes that could be discussed? 6. What are the long-term implications of seasonal variations in biochemical parameters for the health and productivity of Murrah buffalo? How might these findings influence management practices? 7. References cited in the manuscript should be up to date, few references found till 2017 rest are too old. Cite more recent references.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	The manuscript "**Influence of Seasonal Variation on Biochemical Parameters in Murrah Buffalo**" presents valuable insights into how seasonal changes affect biochemical parameters in Murrah buffalo. However, several aspects warrant further examination. Here are the critical questions that arise from the manuscript: **Part A: General** 1. How were the hot-humid and cold seasons defined in the study? Were there specific temperature and humidity thresholds used to categorize these seasons? 2. Why were specific biochemical parameters (cholesterol, urea, uric acid, creatinine, and total bilirubin) chosen for this study? Are there other parameters that could provide additional insights? 3. Did the study account for other environmental factors (e.g., diet, housing conditions) that could influence the biochemical parameters aside from seasonal variation? 4. The manuscript references findings from other studies regarding serum creatinine and cholesterol levels. How do these comparisons enhance the understanding of the results, and what are the implications of the differing findings? 5. What physiological mechanisms are proposed to explain the observed changes in biochemical parameters during different seasons? Are there any underlying biological processes that could be discussed? 6. What are the long-term implications of seasonal variations in biochemical parameters for the health and productivity of Murrah buffalo? How might these findings influence management practices? 7. References cited in the manuscript should be up to date, few references found till 2017 rest are too old. Cite more recent references. **Part B: Sections**	

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	Abstract 8. The abstract mentions that a highly significant effect was observed on certain biochemical parameters but does not specify the exact values or the nature of these changes. Including specific data would enhance clarity and impact. 9. While it notes non-significant results for creatinine and total bilirubin, it fails to elaborate on the implications of these findings, which could be important for understanding the overall study outcomes. **Introduction** 10. The introduction could benefit from a more comprehensive review of existing literature on seasonal effects on biochemical parameters in livestock. This would provide a stronger foundation for the study's relevance and necessity. 11. The introduction does not clearly articulate the specific research gap that this study aims to fill, which is crucial for justifying the research. **Materials and Methods** 12. The manuscript mentions the use of an automated blood biochemistry analyzer but lacks detailed information on the sample size, selection criteria, and statistical methods used for analysis. This information is essential for replicability and understanding the robustness of the findings. 13. The method of blood sample collection is briefly mentioned but could be elaborated to ensure that the process is clear and reproducible.	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	**Results** 1. The results section could improve by including tables or figures that summarize the biochemical parameters measured. This would make it easier for readers to grasp the findings at a glance. 2. While the results mention comparisons with other studies, it does not provide a thorough analysis of how these findings align or contrast with existing literature, which could enhance the discussion.	
Are subsections and structure of the manuscript appropriate?	**Discussion** 1. The discussion could delve deeper into the physiological mechanisms behind the observed seasonal variations in biochemical parameters. This would provide a more comprehensive understanding of the implications of the findings. 2. The manuscript does not address any limitations of the study, which is important for contextualizing the results and guiding future research. **Conclusion** 3. The conclusion should succinctly summarize the key findings and their implications for veterinary practice or livestock management. Currently, it lacks a strong takeaway message. 4. The conclusion could suggest areas for future research, which would be beneficial for advancing knowledge in this field. **Part C: Technical** 5. The study does not mention a control group for comparison, which is essential for validating the results. Include a control group of Murrah buffalo that are not subjected to seasonal variations to provide a baseline for comparison of biochemical parameters. 6. The sample size of 10 adult female Murrah buffalo may be too small to draw statistically significant conclusions. Increase the sample size to enhance the reliability of the results and ensure that the findings are representative of the population. 7. The statistical methods used for analysis are not clearly defined, particularly regarding the assumptions of the t-test. Provide a detailed explanation of the statistical methods, including assumptions, tests for normality, and justification for using the t-test for paired samples. 8. The results for creatinine and total bilirubin are reported as non-significant but lack detailed statistical data. Present the mean values, standard errors, and p-values for all biochemical parameters, including those that are non-significant, to provide a complete picture of the findings.	

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	9. The methods for blood sample collection and handling are briefly mentioned but lack detail. Elaborate on the blood collection process, including aseptic techniques, timing of sample collection relative to seasonal changes, and storage conditions to ensure reproducibility. 10. The manuscript does not adequately discuss how environmental factors (e.g., humidity, temperature) specifically influence the biochemical parameters observed. Include a discussion section that connects the biochemical findings to environmental stressors, supported by relevant literature on the physiological responses of buffalo to seasonal changes. 11. The literature cited is limited and does not encompass a broad range of studies on similar topics. Expand the literature review to include more studies on seasonal variations in other livestock species, which can provide a comparative perspective and strengthen the study's relevance. **Part D: Overall readability and language improvement** 12. Addressing minor grammatical issues and enhancing the scientific tone could elevate the overall quality. For instance, In **MATERIALS AND METHODS section,** subheading" **Collection, processing and preservation of samples**" the line 'Non-EDTA vials were kept undisturbed for 15–30 minutes in slanting position at 45˚ angles at room temperature allowing the blood to clot and removed the clot by centrifuging at 2500–3000 RPM for 15 minute.' **Correction**: 15 minutes. **In CONCLUSION section,** the line 'The buffalo does not adapted to seasonal weather fluctuations in the environment it was found in research'. **Correction**: does not adapt **Note:** Authors should assign the manuscript line numbers in future so it is easy to mention the comments by line number	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.		
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.		
Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**		
Optional/General comments		

PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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