

Name:	UTTAR PRADESH JOURNAL OF ZOOLOGY
Manuscript Number:	Ms_UPJOZ_4610
Title of the Manuscript:	"Genetic and Environmental Factors Influencing Lactation Traits in Jersey x Sahiwal Crossbred Cattle: Variance Component Estimation"
Type of the Article	

PART 1: Comments

	Reviewer's comment Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.	Author's Feedback (<i>Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here</i>)
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	The study is of significant importance in assessing the prospects for maternal genetic improvement in dairy cattle production. For effective selection programme, it is essential to estimate the environmental variance component for the various traits of economic importance. Crossbreeding has been one of the cornerstones for improvement programmes in livestock production, hence it is important to evaluate their performances.	Thank you for highlighting the significance of our study. This manuscript contributes valuable insights into the genetic evaluation of Jersey x Sahiwal crossbreds, emphasizing the role of both genetic and environmental factors in lactation traits. By estimating variance components and assessing model efficiency, our findings support the development of more accurate sire selection strategies.
Is the title of the article suitable? (If not please suggest an alternative title)	The title of the article is adequate	Thank you for your positive feedback regarding the title of the article. We are glad to hear that you find it adequate.

<p>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.</p>	<p>The abstract is not adequate as there was no mention of the mean performances for the traits. Also, the likely environmental factors were not stated.</p>	<p>Thank you for your constructive feedback. We have revised the ABSTRACT to include mean performances of lactation traits and have also outlined key genetic (effect of sire) and environmental factors (period and season of calving) influencing performance of the crossbred cattle.</p>
<p>Is the manuscript scientifically, correct? Please write here.</p>	<p>The Materials and Methods section were lacking in the following: Country of study, management practices, production systems in managing the herd. Data collection protocol and data analysis were not shared. For instance, were the data adjusted for any environmental factor like Year, season effects on the parameters. The breeding structure was not stated. Were there any reciprocal crossings? Were the bulls and cows purebreds such that the records were on only 50%Jersey x 50% Sahiwal crossbreds? Were there admixtures at various levels?</p> <p>Table 1 is unnecessary as it was a repetition of figures for all the items</p> <p>Model 4 has no “e” component</p> <p>There should be a table to inform on the mean performances and factors affecting the traits.</p> <p>We do know that crossbreds usually display higher heritability estimates than the purebreds. This was not brought to bear in this paper by comparing the values with the purebreds.</p>	<p>1. Thank you for your valuable and detailed feedback. We have now revised the Materials and Methods section to provide a more comprehensive description of the study. The country of study has been explicitly stated, along with a description of the management practices and production system under which the herd was maintained. Additionally, we have provided a comprehensive explanation of the data collection protocol, including adjustments for environmental factors such as the year and season of calving.</p> <p>We have also clarified the breeding structure, confirming that the study exclusively focused on first-generation (F1) Jersey x Sahiwal crossbred cattle with a fixed genetic composition of 50% Jersey x 50% Sahiwal, without reciprocal crossings or admixtures at varying levels. The breeding program was designed to stabilize Jersey blood levels at 50% while incorporating Sahiwal inheritance.</p> <p>2. We have removed Table 1 to avoid redundancy and improve clarity.</p> <p>3. The residual error component (‘e’) was inadvertently omitted in Model 4. We have now included it to ensure the model is correctly specified.</p> <p>4. We have now incorporated a new Table 1 in the RESULTS AND DISCUSSION section of the manuscript that presents the mean performances of the studied traits along with the effect of</p>

		genetic (sire effect) and non-genetic (period and season of calving) factors. 5. We have included a discussion comparing the heritability estimates of the studied crossbred population with reported values for purebred Jersey and Sahiwal cattle.
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	Mrode R. (2013). Linear models for the prediction of animal breeding values. 3rd Edition Paperback: ISBN : 978-1-84593-981-6343 pages2014 Raphael A. Mrode, Ivan Pocrnic (2023). Linear Models for the Prediction of the Genetic Merit of Animals. 4th Edition Paperback: ISBN : 978-1-80062-048-3412 pages2023	Thank you for your insightful recommendation. The suggested references provide fundamental and advanced insights into the prediction of breeding values, aligning well with the methodological framework of our study. We will incorporate these references where relevant to enhance the scientific rigor and contextual depth of our manuscript.
Is the language/English quality of the article suitable for scholarly communications?	The author(s) should work on the editing of the article. One single paragraph for results and discussion for each trait is not good enough.	Thank you for your valuable feedback. We have expanded the Results and Discussion section by restructuring the content, ensuring that each trait is discussed in greater detail with separate paragraphs for better organization and comprehension.
<u>Optional/General</u> 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)	