Review Form 1.7

Journal Name:	**Journal of Experimental Agriculture International**
Manuscript Number:	**Ms_JEAI_119728**
Title of the Manuscript:	**Genetic Diversity Analysis for Forage Yield and Quality Traits in Sorghum [Sorghum Bicolor L. Moench] Germplasm**
Type of the Article	**Original Research Article**

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
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PART 1: Review Comments

	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)*
Compulsory REVISION comments 1. **Is the manuscript important for scientific community?** (Please write few sentences on this manuscript) 2. **Is the title of the article suitable?** (If not please suggest an alternative title) 3. **Is the abstract of the article comprehensive?** 4. **Are subsections and structure of the manuscript appropriate?** 5. **Do you think the manuscript is scientifically correct?** 6. **Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.** **(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)**	**1. Importance of the Manuscript for the Scientific Community** This manuscript provides valuable insights into the genetic diversity of sorghum germplasm, focusing on forage yield and quality traits. The investigation of 280 sorghum germplasm lines through hierarchical cluster analysis reveals significant genetic diversity, which is crucial for breeding programs aimed at improving forage yield and quality traits. This research is important for the scientific community as it contributes to understanding the genetic variability in sorghum, potentially leading to the development of superior sorghum varieties with enhanced traits. **2. Suitability of the Title** The current title, "Genetic Diversity Analysis for Forage Yield and Quality Traits in Sorghum [Sorghum Bicolor L. Moench] Germplasm," accurately reflects the content and focus of the manuscript. It is suitable and informative, clearly indicating the subject of the study. **3. Comprehensiveness of the Abstract** The abstract is comprehensive, summarizing the objectives, methods, key findings, and implications of the study. It effectively highlights the genetic diversity found in sorghum germplasm and its potential use in breeding programs. However, it could be improved by explicitly mentioning the statistical methods used and the significance of the results. **4. Appropriateness of Subsections and Structure** The manuscript is well-structured with appropriate subsections, including an introduction, materials and methods, results and discussion, and conclusions. This structure facilitates a clear and logical flow of information, making it easy to follow the research process and findings. **5. Scientific Accuracy of the Manuscript** The manuscript appears to be scientifically accurate, with detailed descriptions of the experimental design, data collection, and statistical analysis. The use of hierarchical cluster analysis is appropriate for evaluating genetic diversity, and the results are presented with sufficient detail. The conclusions drawn from the data are logical and supported by the findings. **6. Sufficiency and Recency of References** The references are sufficient and include both recent and foundational studies relevant to the topic. The manuscript cites important works in the field, ensuring a comprehensive background and context for the study. However, incorporating a few more recent references from the past five years could enhance the manuscript's relevance. **Additional Suggestions/Comments** • The manuscript could benefit from a more detailed discussion on the practical implications of the findings for sorghum breeding programs. • Consider adding visual representations, such as cluster dendrograms or graphs, to	

	illustrate the genetic diversity and clustering results. • Ensure consistency in the format and citation style of the references. Overall, the manuscript is well-prepared and provides significant contributions to the understanding of genetic diversity in sorghum germplasm.	

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Minor REVISION comments **1. Is language/English quality of the article suitable for scholarly communications?**	**Minor Revision Comments:** 1. **Language/English Quality:** The language and English quality of the article is generally suitable for scholarly communications. However, there are several areas where minor revisions can enhance clarity and readability. Below are specific suggestions: **Abstract:** • Current: "The present investigation was carried out with two hundred eighty sorghum germplasm lines in augmented block design at GBPUAT Pantnagar under normal sown condition during the Kharif season 2019." • Suggested: "This study investigated 280 sorghum germplasm lines using an augmented block design at GBPUAT Pantnagar under normal sowing conditions during the 2019 Kharif season." • Current: "The hierarchical cluster analysis revealed that significant amount of genetic diversity was present in sorghum germplasm with respect to different yield related traits quality traits and biochemical traits." • Suggested: "Hierarchical cluster analysis revealed significant genetic diversity in the sorghum germplasm concerning various yield-related traits, quality traits, and biochemical traits." **Introduction:** • Current: "Sorghum is one of the most important and widely grown crops in the world having the area of 41.14 million hectare with the production of about 58.72 million tonnes globally whereas 5.00 million hectare and 4.50 million tonnes grain production in India (USDA Foreign Agricultural Services 2019)." • Suggested: "Sorghum is one of the most important and widely grown crops globally, covering an area of 41.14 million hectares with a production of approximately 58.72 million tonnes. In India, sorghum covers 5.00 million hectares with a grain production of 4.50 million tonnes (USDA Foreign Agricultural Services 2019)." **Materials and Methods:** • Current: "All the recommended package of practices for sorghum was followed to raise a healthy crop." • Suggested: "All recommended agronomic practices for sorghum were followed to ensure healthy crop growth." • Current: "The statistical analysis was performed by Indostat Hyderabad." • Suggested: "Statistical analysis was conducted using Indostat software in Hyderabad." **Results and Discussion:** • Current: "Knowledge about genetic diversity of parents in hybridization programme is essential as the crosses involving genetically diverse parents who are likely to produce not only high heterotic effects but it also produce desirable transgressive segregants in the later segregating generations." • Suggested: "Understanding the genetic diversity of parents in hybridization programs is essential, as crosses involving genetically diverse parents are likely to produce not only high heterotic effects but also desirable transgressive segregants in later generations." • Current: "The highest inter-cluster distance was observed between clusters-III and VI (334.554) suggested distant relationship between members of these two clusters and upon	

	crossing the members of these two clusters will give more genetic diversity in segregating generation." • Suggested: "The highest inter-cluster distance was observed between clusters III and VI (334.554), suggesting a distant relationship between members of these two clusters. Crossing these members is likely to result in greater genetic diversity in the segregating generation." **Conclusion:** • Current: "In order to increase the possibility of isolating good trangressive segregants in the segregating generations it would be logical to attempt crosses between the diverse genotypes belonging to clusters separated by large inter-cluster distances." • Suggested: "To increase the likelihood of isolating desirable transgressive segregants in segregating generations, it would be logical to attempt crosses between diverse genotypes from clusters separated by large inter-cluster distances." By implementing these minor revisions, the manuscript will improve in clarity and readability, making it more 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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