Review Form 3

Journal Name:	**Journal of Experimental Agriculture International**
Manuscript Number:	**Ms_JEAI_120871**
Title of the Manuscript:	**Genetic variability studies in the interspecific derivatives (S. indicum x S. mulayanum) of Sesamum**
Type of the Article	**Original Research Article**

General guidelines for the 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

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.	This manuscript is of significant value to the scientific community as it addresses the genetic variability within sesame populations developed through interspecific hybridisation, a crucial aspect for improving the agronomic traits of the crop. The results highlight the importance of wild relatives in broadening the genetic base for breeding programs, which is particularly important given the current low production levels in major growing areas such as India. Furthermore, the emphasis on traits such as seed yield and harvest index underlines the practical implications for agricultural improvement. I appreciate this manuscript for its thorough analysis and methodology, which not only adds to the existing body of knowledge but also provides a clear path for future sesame breeding strategies to improve sesame varieties. Its focus on genetic parameters ensures that the knowledge gained can be effectively applied in practical breeding scenarios, thus making a meaningful contribution to the field.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	The title "Genetic variability studies in the interspecific derivatives (*S. indicum x S. mulayanum*) of Sesamum" is suitable as it accurately reflects the focus of the research on genetic variability in the specific interspecific hybrids of sesame. However, it could be made more concise and informative. A suggested alternative title might be: "Exploration of genetic variability in interspecific hybrids of Sesamum (*S. indicum x S. mulayanum*)". This title emphasises the exploratory aspect and highlights the importance of the study while maintaining scientific specificity.	
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.	The abstract provides a detailed overview of the study, including the purpose, methodology, results, and implications of the findings. However, it could benefit from some adjustments to improve clarity and comprehensiveness. Some suggestions for improvement: 1. Clarify the Objectives: The purpose of the study could be stated more explicitly at the beginning. For example, start with "This study aims to assess genetic variability for agronomic characters in the interspecific population developed by hybridization between *Sesamum indicum* (Swetha til) and *Sesamum mulayanum* (IC-43144-1)." 2. Specify Traits Studied: While some traits are mentioned in the middle of the abstract, consider introducing them earlier or creating a clearer list of key traits being evaluated to provide readers with a quick overview. 3. Results Presentation: Instead of stating "significant variability in the interspecific derivatives for all the traits studied," provide a brief comparative statement or context, such as the number of traits assessed or the significance levels. 4. Add Statistical Methods: Briefly mention any specific statistical methods used beyond ANOVA, such as tests for heritability or genetic advance calculations, to enhance methodological transparency. 5. Conclusions and Implications: The conclusion could be more strongly stated. For instance, you might indicate the practical applications of the findings for sesame breeding programs. 6. Language and Clarity: Review for clarity and conciseness. For example, rather than "the selection based on these traits is to be given due importance," consider revising it to "selection based on these traits should be prioritized." By implementing these suggestions, the abstract will become clearer and more informative, better serving the reader's understanding of the study's scope and significance.	
Are subsections and structure of the manuscript appropriate?	The manuscript structure you've outlined seems appropriate for a scientific paper. 1. Abstract: This article contains a well-written abstract that provides a concise summary of the study, summarising the aims, methods, key findings, and conclusions. The abstract is concise and effectively communicates the main points of the research without going into excessive detail. 2. INTRODUCTION: This section provides background information, sets the context, highlights the importance of the study, and presents the research question. A brief review of the relevant literature is included here to identify the gaps that your research addresses. All this helps to justify the rationale for your study. 3. MATERIALS AND METHODS: This section clearly describes your experimental design, the materials used, the procedures followed, and the methods of analysis. In addition, this section includes the description that allows for reproducibility; the specific details of sample sizes, statistical analyses, and controls used in the study. 4. RESULTS AND DISCUSSION: It is common to combine these two sections, where the results are presented, followed by a thoughtful discussion. This is important to increase clarity for the reader.	

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	5. CONCLUSION: This section succinctly summarises the main findings, their significance and potential implications. 6. REFERENCES: This section consists of the citation of sources used throughout the manuscript, acknowledging previous research. References include all works cited in the text. 7. Appendices of statistical data: It is good practice to include appendices with detailed statistical data to support the findings, especially if there are extensive tables and graphs. In addition, the appendices are clearly labeled, organised and, where appropriate, referenced in the main text. This allows the interested readers to delve deeper into the data that support your conclusions. In conclusion, the overall structure and subdivisions you outlined are appropriate for a scientific manuscript.	
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.	This manuscript demonstrates scientific robustness and technical soundness through its clear articulation of research objectives, methods, and analytical approaches. The use of an Augmented Randomised Complete Block Design (ARCBD) for the evaluation of interspecific hybrids not only ensures rigorous statistical treatment of the data but also enhances the reliability of the results. In addition, the detailed analysis of phenotypic and genotypic coefficients of variation, heritability, and genetic advance strengthens the interpretation of the results and indicates a thorough understanding of the genetic basis of the traits studied. Overall, the comprehensive assessment of genetic variability in sesame breeding, combined with appropriate statistical methods, indicates a scientifically rigorous effort that provides valuable insights into agronomic trait improvement.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	The references in the manuscript are sufficient, but not very recent. 1. Relevance: The references cited are directly related to the research topic, the methods used, and the results presented. 2. Recency: In most scientific fields, especially in rapidly developing areas such as genetics and agronomy, references from the last 5-10 years are usually preferred. This ensures that the research is based on the latest scientific knowledge. In this article, 21 sources (68%) are recent publications (from 2014 to 2024), 4 sources (13%) are relatively recent (2010-2012), 2 sources (6%) are outdated (1986 and 1990), one source from 1975 (3%) and 3 sources (10%) are very outdated (1953 and 1956). In 21 source (MANEPALLI SB. Genetic Studies for Yield....) the necessary publication dates are missing. 3. Diversity of sources: A well-rounded reference list includes a mix of primary research articles, reviews, and key baseline studies that provide comprehensive background information. Any gaps should be filled by including recent and relevant studies focusing on genetic variability, heritability, and breeding strategies in sesame or related crops. This approach will enhance the credibility and scientific impact of the manuscript. For examples: - Varma, S. et al. (2022). Genetic variability and characterization of sesame (Sesamum indicum L.) accessions for oil yield and quality. Plant Genetic Resources; - Kumar, A., & Gupta, P. (2021). Advances in sesame breeding: Challenges and opportunities. Journal of Crop Improvement; - Gomez, K. A., & Gomez, A. A. (2023). Statistical Procedures for Agricultural Research. New Edition. Wiley-Blackwell).	
Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	Peer Review: Check the manuscript for clarity and coherence. Proofreading: Thoroughly proofread the manuscript for grammatical errors and typos, of which there are many. If this quality is achieved and all issues are corrected, the manuscript will be well prepared for submission to an academic journal, increasing the readability and impact of the manuscript. For example: Genetic variability for agronomic characters ~~were~~ was assessed…; Pre-fertilization barriers between..; The genotypic coefficient of variation (GCV) and phenotypic coefficient of variation (PCV) ~~was~~ were estimated…; The critical difference (CD) (**Table 2**) for any two test treatments of the different blocks showed marginally higher values than ~~that~~ the same two test treatments for the same blocks…; The highest value of ~~co-efficient~~ coefficient of variation..; adequate variation ~~in~~ the interspecific population..; Vamshi *et al*. [14] reported low variation ~~for~~ in capsule length and test weight among the ~~advance~~ advanced breeding lines derived from *S.indicum* crosses.., etc.	
Optional/General comments	Here are some optional/general comments that can be considered for the article: A thorough proofreading by a native English speaker or a professional editing service can also help improve the overall quality. If applicable, don't forget to include an Acknowledgements section to acknowledge any contributions, funding sources, or collaborations that helped your research. By addressing these points, you can improve the overall quality and impact of the article, making it more appealing to readers.	

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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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