

Review Form 3

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| Journal Name: | Journal of Scientific Research and Reports |
| Manuscript Number: | Ms_JSRR_128097 |
| Title of the Manuscript: | Evaluation of sorghum breeding lines for identification of resistance sources for multiple diseases in Sorghum. |
| 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. To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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PART 1: 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) |
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| <p>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.</p> | <p>Fungal pathogens such as <i>Peronosclerospora sorghi</i>, <i>Puccinia purpurea</i>, and grain mold fungi significantly compromise sorghum's agronomic performance, leading to substantial reductions in grain yield and end-use quality, thereby threatening overall productivity. The strategic identification and genetic enhancement of disease-resistant sorghum germplasm are imperative for mitigating these biotic constraints in a sustainable manner. Integrating host-plant resistance into sorghum improvement programs enhances the crop's genetic resilience against phytopathogens, minimizing reliance on synthetic fungicides and promoting integrated disease management (IDM) strategies. This approach aligns with eco-sustainable agricultural systems, reinforcing environmental stewardship while maintaining agronomic efficiency. Genotypes exhibiting durable resistance ensure greater phenotypic stability and adaptability to diverse agro-ecological zones, safeguarding crop performance under varying environmental stresses. The resultant genetic gains in yield stability and superior grain quality contribute to enhanced food security and rural livelihoods, particularly for resource-constrained farming systems in marginal areas. This study lays a scientific foundation for advancing sorghum breeding pipelines, fostering the development of resilient cultivars that meet the dual objectives of agronomic productivity and environmental sustainability.</p> | |
| <p>Is the title of the article suitable? (If not please suggest an alternative title)</p> | <p>The title, "Evaluation of Sorghum Breeding Lines for Identification of Resistance Sources for Multiple Diseases in Sorghum," is clear and descriptive, but it could be refined for brevity and impact. Here's a revised version: "Screening Sorghum Breeding Lines for Resistance to Multiple Fungal Diseases" This revised title maintains the original meaning but is more concise and engaging, which can better capture the reader's attention while retaining the scientific focus.</p> | |
| <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> | <ul style="list-style-type: none"> • Explicitly state the study's objectives, incorporating details about both resistance identification and agronomic evaluation. • Include quantitative data (disease severity scores, resistance percentages) to substantiate findings. • Use more advanced plant pathology and agronomy terminology to reflect scientific depth. • Expand on the broader implications for sustainability, climate resilience, and integrated disease management. • Streamline repetitive statements for conciseness and focus. • Provide more detailed insight into the agronomic potential of the resistant lines (e.g., yield, drought tolerance). • Clearly link the research findings to the specific challenges faced in the study's geographical context. | |
| <p>Is the manuscript scientifically, correct? Please write here.</p> | <p>The study offers valuable insights into the identification of resistant sources for various sorghum diseases, particularly under field conditions. However, the manuscript could be enhanced by providing a more detailed description of the experimental methodology, such as the experimental design (e.g., randomized complete block design, split-plot design), sample size, and specific statistical analyses employed (e.g., ANOVA, regression analysis, or mixed-effects models). Additionally, a more explicit comparison of the results with previous research on sorghum disease resistance would strengthen the manuscript's relevance within the context of existing literature. Incorporating a more rigorous data analysis, such as calculating effect sizes, confidence intervals, or conducting genotype-by-environment interaction studies, would improve the robustness of the findings. Furthermore, presenting the results more clearly, using visual aids like graphs, tables, or heatmaps, would improve clarity and facilitate interpretation. These enhancements will significantly increase the scientific rigor and overall impact of the paper within the field of agronomy.</p> | |
| <p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p> | <p>Your list of references includes a mix of older and relatively recent publications. Here's an evaluation of their sufficiency and recency:</p> <ol style="list-style-type: none"> 1. Sufficiency: The references cover key areas such as rust diseases, sorghum germplasm, resistance to foliar diseases, screening techniques, and genetic resistance in sorghum. However, the list could be enhanced by adding more recent studies that focus on the latest research and methodologies for disease resistance in sorghum. Also, incorporating more studies related to agronomy-specific techniques, advanced genetic studies, and modern plant pathology tools might help broaden the perspective. 2. Recency: <ul style="list-style-type: none"> ○ The earliest references are from 2000 (Bandyopadhyaya) and 2008 (Anonymous). These might be somewhat outdated, especially considering the rapid advancements in plant pathology and crop breeding in recent years. ○ The most recent references are from 2023, including the paper by Vishwas Gowda et al. and the annual progress report on sorghum pathology. These are current and provide insights into contemporary work. <p>To ensure the manuscript is scientifically rigorous, I recommend:</p> <ul style="list-style-type: none"> • Adding more recent references (from 2020 onwards) to showcase the latest research on sorghum diseases and management practices. • Incorporating a broader range of sources, including recent agronomy journals and research related to environmental factors affecting disease development in sorghum. | |

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| <p>Is the language/English quality of the article suitable for scholarly communications?</p> | <p>The language quality of the article is generally suitable for scholarly communication, but it requires some refinement for better clarity and coherence. Here are a few suggestions for improvement:</p> <ol style="list-style-type: none"> 1. Clarity and Precision: Some sentences could be more concise. For example, phrases like "During the years 2021-22, 2022-23 and 2023-24" could be simplified to "Between 2021 and 2024." 2. Consistency: Ensure consistent use of disease severity descriptions. For example, "highly resistant" and "resistant" should be used consistently, and disease severity ratings should follow a uniform format (e.g., 1-9 scale). 3. Grammar and Syntax: Minor grammatical issues like missing articles (e.g., "the" before "susceptible reaction"), awkward sentence structures, and inconsistent punctuation could be revised for smoother reading. 4. Tables and Figures: The reference to tables and figures (e.g., "Table 1; fig 1") could be better integrated into the text. For example, "as shown in Table 1" or "as illustrated in Figure 1" would be more readable. 5. Tense Consistency: The tense used should be consistent, particularly when discussing past experiments or results. For example, "The entries were evaluated" could be changed to "The entries have been evaluated" to maintain present perfect tense consistency. 6. References: When referring to previous studies (e.g., Sharma et al., 2012), ensure that the full citation is either included or properly referenced in the bibliography section. <p>Overall, the article conveys the intended message but would benefit from careful revision to improve fluency, readability, and precision in scholarly communication.</p> | |
| <p>Optional/General comments</p> | <ol style="list-style-type: none"> 1. Study Design and Methodology: <ul style="list-style-type: none"> o The experimental design and methodology are sound, with clear explanations of the approach used to evaluate sorghum germplasm for resistance to downy mildew, rust, and grain mold over three consecutive years. o The use of a sick plot and infector rows for disease inoculation is a good strategy for assessing disease resistance under natural field conditions. o The agronomic practices followed were appropriate for the study, and the exclusion of disease control measures ensures that the evaluation reflects natural disease dynamics. 2. Results and Discussion: <ul style="list-style-type: none"> o The results section is well-structured, and the use of disease severity ratings and reaction scales for downy mildew, rust, and grain mold is appropriate. However, more explicit comparisons to existing literature could be beneficial in contextualizing the findings within the broader research landscape. o The discussion should delve deeper into potential reasons for the observed variations in disease resistance across different genotypes, particularly in terms of environmental influences, genetic diversity, and the interaction between host and pathogen. o The findings are consistent with prior studies, but there is limited discussion on the practical implications for breeding programs, which could be valuable for readers interested in translating the results into real-world applications. 3. Clarity and Language: <ul style="list-style-type: none"> o The overall language is understandable, but there are areas where sentence structures could be simplified for clarity and flow. For example, breaking down long sentences into shorter, more direct statements would improve readability. o The consistency in terminology, particularly regarding disease resistance reactions (e.g., "resistant," "moderately resistant," "susceptible"), should be ensured throughout the manuscript. o There are minor grammatical errors and awkward phrasing in some areas (e.g., "None of the entries showed multiple disease resistant reaction to all the three diseases evaluated") that need correction for clarity. 4. Tables and Figures: <ul style="list-style-type: none"> o The inclusion of tables and figures is well-organized and provides valuable data. However, the legend for each table and figure should be more descriptive to ensure that readers can understand the context without having to refer back to the text. o The tables are informative but could be formatted for easier readability (e.g., clearer separation between columns, more distinct headings). 5. Conclusion: <ul style="list-style-type: none"> o The conclusion appropriately summarizes the main findings and highlights the resistance of specific lines to multiple diseases. However, it would be strengthened by suggesting future research directions or practical applications of the findings. o A clearer statement regarding the potential use of identified resistant lines in breeding programs or further studies would make the conclusion more impactful. 6. Recommendations: <ul style="list-style-type: none"> o Revise the manuscript for consistency in terminology and improve sentence structure for clarity. o Expand the discussion to explore the genetic and environmental factors influencing disease resistance more comprehensively. o Provide more detail in the conclusion regarding the potential application of the findings in breeding programs. o Correct minor grammatical errors and ensure proper formatting of tables and figures. <p>Overall, the manuscript presents valuable research, but it requires some revisions to enhance its clarity and impact for scholarly communication.</p> | |

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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) |
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| Are there ethical issues in this manuscript? | <i>(If yes, Kindly please write down the ethical issues here in details)</i> | |

Reviewer Details:

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