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| Journal Name: | [**International Journal of Plant & Soil Science**](https://journalijpss.com/index.php/IJPSS) |
| Manuscript Number: | **Ms\_IJPSS\_140779** |
| Title of the Manuscript: | **Assessment of Genetic diversity and Characterization of Sunflower Inbreds for breeding improvement** |
| Type of the Article | **Original Research Article** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** (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. A minimum of 3-4 sentences may be required for this part.** | The present study revealed significant genetic variability among sunflower inbred lines for key agronomic and quality traits. High heritability coupled with high genetic advance for most traits indicates the predominance of additive gene action, suggesting effective improvement through direct selection.  Morphological characterization showed wide diversity, and cluster analysis grouped genotypes into seven distinct clusters with maximum genetic divergence between Cluster VI and VII, indicating potential for heterosis breeding. These findings provide a strong foundation for genetic enhancement and hybrid development in sunflower. | The genetic variability presents among sunflower inbred lines, which is essential for crop improvement. The identification of traits with high heritability and genetic advance provides valuable guidance for breeders to make effective selections in breeding programs. The clustering of genotypes based on morphological traits offers insights into genetic diversity and potential parent combinations for hybrid development. Overall, the findings support the development of improved sunflower varieties with better yield and quality, which is highly relevant for both researchers and farmers. |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | I think that title is appropriate | Yes |
| 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. | Yes, I believe this abstract of the article is comprehensive | Yes |
| Is the manuscript scientifically, correct? Please write here. | Yes | Yes |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | No, Reference sources should be supported with fewer, more articles for this type of studies.  <https://fiver.ifvcns.rs/bitstream/handle/123456789/2476/bitstream_6780.pdf?sequence=2&isAllowed=y>  <https://www.cambridge.org/core/journals/journal-of-agricultural-science/article/abs/classification-of-confectionary-sunflower-genotypes-based-on-morphological-characters/6885AA9D337C56D6FE4E2F4306436896>  <https://www.researchgate.net/publication/346717065_Variability_of_morphological_traits_in_sunflower_inbred_lines> | Yes, I have added sufficient research paper |
| Is the language/English quality of the article suitable for scholarly communications? | Yes, I think so | Yes |
| Optional/General comments |  | No comment |

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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)* | No ethical issue |