

### Review Form 3

Journal Name:	<b>Journal of Advances in Biology &amp; Biotechnology</b>
Manuscript Number:	<b>Ms_JABB_123209</b>
Title of the Manuscript:	<b>Induction of physical mutations in <i>Gladiolus grandiflorus</i> L. through gamma irradiation</b>
Type of the Article	<b>Original research paper</b>

#### **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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#### **Important Policies Regarding Peer Review**

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**PART 1: Review Comments**

<b>Compulsory</b> REVISION comments	Reviewer's comment	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. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	This manuscript contributes valuable insights into the field of mutation breeding, particularly in <i>Gladiolus grandiflorus</i> , an important ornamental plant. The study identifies the optimal lethal dose for gamma irradiation and explores the induction of physical mutations, which can lead to the development of new, commercially valuable gladiolus varieties. This research is significant for the scientific community, as it provides a foundation for further studies on the use of gamma irradiation in other ornamental plants and potentially other crops.	
Is the title of the article suitable? (If not please suggest an alternative title)	The current title is clear and appropriately reflects the content of the manuscript.	
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 is generally comprehensive but could be more impactful by strengthening its structure. At the beginning, addition of introducing statement is suggesting. At the end, explicitly stating the broader implications of the findings is suggested. Additionally, clarifying the significance of the observed morphological and color mutations would help readers understand the potential commercial applications. E.g. "The findings highlight the potential of gamma irradiation to induce beneficial mutations in gladiolus, paving the way for the development of new varieties with enhanced ornamental traits."	
Are subsections and structure of the manuscript appropriate?	The manuscript is well-organized, with clear sections that facilitate easy reading and comprehension. The structure is appropriate for an original research paper. However, in the materials and methods part, 2.1 is Materials and Methods at the last part. The best way is either to add subheadings from the beginning of the methodology and give another subsection number for 2.1 or avoid use of subheadings altogether, rather than having one subsection in a section.	
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.	The manuscript is scientifically robust and technically sound. The methods used are appropriate for the study's objectives, and the results are presented in a logical sequence. The use of probit analysis to determine the LD50 is a strength, and the detailed statistical analysis lends credibility to the findings. However, the manuscript would benefit from a more detailed discussion of the molecular and physiological mechanisms underlying the observed mutations and their effects.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. -	The references are adequate and relevant, drawing from a wide range of studies.	

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<p>Minor REVISION comments</p> <p><b>Is the language/English quality of the article suitable for scholarly communications?</b></p>	<p>The language is generally suitable for scholarly communication</p>	
<p><b>Optional/General</b> comments</p>	<p>1. In the introduction section, paragraph 2 contains three different ideas. It needs to be refined removing redundances and expanding different ideas into separate paragraphs. Also, the ideas in paragraph 6 are mostly repetitions. Cut the repetition and add the objective to the last part of paragraph 5.</p> <p>2. Merge the pictures in Fig.3 into a single figure with separate panels. If the number of pictures is even, it can be arranged in panels containing rows and panels, otherwise, can be arranged in a single row. Finally Figure legend should be added.</p> <p>3. In Materials and Methods section, paragraph, there statement "...Six treatments of each variety were evaluated...". What does it mean? The radiation dose is a treatment. Variety is also a treatment.</p> <p>4. In Materials and Methods, Paragraph 4, there is a statement, "The characteristics under study were days to sprouting, number of leaves per plant, length of leaf blade (cm), width of leaf blade (cm), plant height (cm), days to spike initiation, number of spikes per plant, spike length (cm), length of the floret (cm), diameter of the floret (cm), number of florets per spike, field life (number of days), corm weight (g) and number of cormels per corm.". The "traits" could be more suitable than characteristics, that is too general.</p> <p>5. The conclusion succinctly summarizes the key findings and their implications. The determination of LD50 and the observed effects. The following are suggested:</p> <p>a) The conclusion could be expanded to include a brief discussion on the potential for future research, such as exploring the long-term stability of the induced mutations or their impact on other desirable traits in tuberoses.</p> <p>b) Consider emphasizing the study's contribution to the broader field of mutation breeding and its potential applications.</p>	

**PART 2:**

	<p><b>Reviewer's comment</b></p>	<p><b>Author's comment</b> (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)</p>
<p><b>Are there ethical issues in this manuscript?</b></p>	<p><i>(If yes. Kindly please write down the ethical issues here in details)</i></p>	

**Reviewer Details:**

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