

Review Form 3

Journal Name:	International Journal of Environment and Climate Change
Manuscript Number:	Ms_IJECC_122277
Title of the Manuscript:	The Role of Volatile Organic Compounds (VOCs) in Determining Seed Physiological Quality – A Review
Type of the Article	Review Article

Review Form 3

PART 1: Review Comments

Compulsory 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>
<p>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.</p>	<p>This manuscript is important for the scientific community as it highlights the potential of volatile organic compounds (VOCs) as biomarkers for assessing seed physiological quality, which is crucial for enhancing agricultural productivity. By synthesizing current knowledge on VOCs emitted by seeds, the review provides valuable insights into their role in indicating seed vigor, viability, and deterioration, thereby offering a non-destructive alternative to traditional germination tests. I appreciate this manuscript for its comprehensive approach and its emphasis on the relationship between VOC emissions and seed quality, which could lead to innovative methods for seed testing and management. However, the challenges mentioned regarding standardization and marker identification across different seed types suggest that further research is needed to fully realize the practical applications of VOC analysis in seed quality assessment.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>The title of the article is suitable as it accurately reflects the content of the research. It is clear and concise, providing a good initial understanding of the study's 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>	<p>The abstract of the article is generally comprehensive, effectively summarizing the key points regarding the role of volatile organic compounds (VOCs) in assessing seed physiological quality. It outlines the significance of VOCs as biomarkers, discusses their correlation with seed deterioration, and highlights the potential for non-destructive testing methods. However, I suggest the following additions for further clarity and depth: Specific Examples of VOCs: Including specific examples of the types of VOCs (e.g., particular alcohols, aldehydes, and ketones) that are associated with seed deterioration could enhance the reader's understanding of the subject matter. Implications for Agricultural Practices: Briefly mentioning how the findings could influence agricultural practices or seed management strategies would provide a practical context for the research. Future Directions: Adding a sentence about potential future research directions or applications of VOC analysis in seed quality testing could strengthen the abstract by indicating the ongoing relevance of the topic.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>The subsections and structure of the manuscript are not appropriate due to the inconsistency in the numbering and formatting of the section titles. The use of both Roman numerals (e.g., 2.3, 4.1, 5.4, 8) and Arabic numerals (e.g., 3.1, 6.1) creates confusion for the reader regarding the hierarchy and organization of the content. Additionally, some section titles are only bolded without any numbering (e.g., 3.2, 3.3), which further complicates the manuscript's structure. To improve clarity and coherence, I recommend standardizing the numbering system throughout the manuscript. All sections and subsections should consistently use either Roman or Arabic numerals, and all titles should be numbered to reflect their position in the hierarchy. This will help readers easily navigate the manuscript and understand its structure more effectively.</p>	
<p>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.</p>	<p>This manuscript demonstrates scientific correctness and robustness through its comprehensive review of volatile organic compounds (VOCs) and their implications for seed physiological quality. The authors effectively synthesize current research, providing a clear connection between VOC emissions and seed vigor, viability, and deterioration. The methodologies discussed for collecting and analyzing VOCs are well-established and appropriate for the study, ensuring that the findings are grounded in sound scientific practices. Additionally, the manuscript addresses the biological significance of VOCs in seed interactions, which adds depth to the discussion and highlights the potential applications of VOC analysis in agricultural practices. Overall, the combination of thorough literature review, appropriate methodologies, and relevant biological context contributes to the manuscript's scientific robustness.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>The references in the manuscript are recent, which is a positive aspect; however, the overall quantity of references is insufficient to adequately support the authors' claims and viewpoints. A more extensive reference list would enhance the manuscript's credibility and provide a stronger</p>	

Review Form 3

:	<p>foundation for the arguments presented. I suggest that the authors consider including additional references that cover recent studies on volatile organic compounds (VOCs) in relation to seed quality, as well as relevant research on the methodologies for VOC analysis. This could include articles from journals focused on plant physiology, seed science, and agricultural practices. Expanding the reference list will not only strengthen the manuscript but also provide readers with a more comprehensive understanding of the topic.</p>	
<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>I can't make professional evaluations of the language in the manuscript.</p>	
<p>Optional/General comments</p>	<p>1. The title "Methods for collecting and analyzing seed VOCs VOC Collection Methods" in section 2.3 is unclear and should be revised for clarity. A more concise title that accurately reflects the content would improve reader understanding.</p> <p>2. In the manuscript, the abbreviation for volatile organic compounds is inconsistently presented as both (VOCs) and VOC. It is essential to standardize the abbreviation throughout the entire paper to avoid confusion for the readers.</p> <p>3. Section 2.1 already introduces the types of VOCs, yet there is a redundant mention of this information in the second paragraph of section 2.3b-i. This repetition should be eliminated to enhance the manuscript's conciseness and clarity.</p> <p>4. In the title of section 3.1, the phrase "vigor, and viability" contains an unnecessary comma. The comma should be removed to align with the conventions of scientific writing.</p> <p>5. In section 3.1, the author presents five points discussing the relationship between VOC content and seed germination, vigor, and viability. However, points 1, 2, and 4 all describe how the emission of VOCs can indicate seed vigor. It would be more effective to consolidate these points into a single statement to avoid redundancy. Additionally, points 3 and 5 summarize existing research to support the authors' claims, but the references used are insufficient to substantiate these arguments.</p> <p>6. The authors have not provided explanations or analyses for the references listed in the table, resulting in a disconnect between the table's content and the main text. It is important to integrate the table's findings into the discussion to enhance the manuscript's coherence and provide context for the data presented.</p>	

PART 2:

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

Reviewer Details:

<p>Name:</p>	<p>Ying Gu</p>
<p>Department, University & Country</p>	<p>Shenyang Agricultural University, China</p>