

REVIEWER'S REPORT

Manuscript No.: IJAR-56886

Title: Evaluation of a biopesticide containing essential oils from *Ocimum gratissimum* L., *Cymbopogon citratus* L., and *Zingiber officinale* Roscoe, and propiconazole, on the growth of strains of *Sporisorium scitamineum*, the causative agent of smut disease, collected in Côte d'Ivoire

Recommendation:

Accept as it is
☒ **Accept after minor revision.....**
 Accept after major revision
 Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance		✓		

Reviewer Name: Dr S. K. Nath

Detailed Reviewer's Report

Strengths of the Study

- **Originality:** The study addresses an important agricultural problem sugarcane smut disease and investigates the potential of botanical biopesticides as sustainable alternatives to chemical fungicides. The comparative approach involving multiple essential oils and a standard fungicide adds value.
- **Relevance:** Given the economic significance of sugarcane in Côte d'Ivoire and the environmental concerns over synthetic fungicides, this research is highly relevant for sustainable crop protection.
- **Methodology:** Utilizes standard and well-documented methods for essential oil extraction, in vitro fungal growth inhibition, and spore germination assays, with appropriate controls and varying doses.
- **Data Quality:** Provides quantitative data on essential oil yields, fungal growth inhibition, spore production, and germination rates, allowing for thorough analysis.
- **Contribution:** Demonstrates the potential effectiveness of specific essential oils as eco-friendly alternatives for controlling sugarcane smut, opening avenues for further application and research.

Weaknesses of the Study

- **Limited Scope of In Vivo Evaluation:** All results are based on in vitro assays; the efficacy in field conditions or on actual sugarcane plants remains untested.
- **Sample Size and Replication Details:** The number of replicates and statistical power analyses are not explicitly described, possibly affecting the robustness of the conclusions.
- **Statistical Analysis:** While some statistical tests (e.g., Newman-Keuls) are mentioned, comprehensive statistical data, such as confidence intervals or p-values for all comparisons, are lacking.
- **Ethical Considerations:** No mention of ethical approval or permissions for plant collection or laboratory work, which could be necessary depending on local regulations.
- **Presentation and Formatting:** Some figures and tables are not fully clear or well-labeled; figures are referenced but not always included with adequate captions. Minor typographical and grammatical errors are present.
- **References and Citations:** Some references are incomplete or embedded without proper formatting, making follow-up difficult.

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Reviewer Comments

- **Title and Abstract Clarity:** The title accurately reflects the content but could be more concise. The abstract effectively summarizes objectives, methods, and findings; however, a clearer statement of the study's significance and potential applications would improve reader engagement.
- **Introduction and Objectives:** The introduction provides sufficient background on sugarcane's economic importance and the impact of smut disease. The objectives are clear, focusing on evaluating essential oils against a standard fungicide.
- **Methodology and Statistical Analysis:** The experimental procedures are generally well described, but details on the number of replicates, experimental design, and statistical analyses should be more explicit. Incorporation of more advanced statistical tools could strengthen the results interpretation.
- **Results and Discussion:** Results are presented systematically, with appropriate use of tables and figures. The discussion appropriately relates findings to previous literature but could better analyze the variance between oil yields and their antifungal activities. Some interpretations are somewhat speculative and should be supported by more data.
- **Conclusion and Implications:** The conclusion appropriately summarizes the main findings. However, recommendations for field trials or practical applications are lacking, which is necessary for translational impact.
- **Ethical Clearance:** There is no mention of ethical approval or permission procedures, which may be necessary depending upon local regulatory requirements and should be addressed.
- **Language and Grammar:** Overall, the language is understandable but contains occasional grammatical errors and awkward phrasing. A thorough language editing is recommended.
- **Tables, Figures, and References:** Tables and figures are relevant but sometimes lack clarity in labels. References are present but need standard formatting consistent with journal requirements.