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REVIEWER'S REPORT

Manuscript No.: IJAR-52027 Date: 02-06-2025

Title: " Efficacité biologique de Metarhizium anisopliae isolat Bme2-cnra contre coelaenomenodera lameensis (Coleoptera : chrysomelidae) ravageur des feuilles du palmier à huile (elaeis guineensis) en Côte d' ivoire. "

Recommendation:
Accept as it is……**YES……**
Accept after minor revision……
Accept after major revision ……
Do not accept (*Reasons below*) ……

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

Reviewer's Name: Tahir Ahmad

Reviewer's Decision about Paper: **Recommended for Publication.**

Comments (*Use additional pages, if required*)
.

Reviewer's Comment / Report

Research Focus:

The manuscript explores the biological control potential of a local isolate of the entomopathogenic fungus *Metarhizium anisopliae* (Bme2-cnra) against the leaf miner *Coelaenomenodera lameensis*, a major pest causing significant losses in oil palm plantations in Côte d'Ivoire.

Abstract and Content Clarity:

The abstract effectively outlines the severity of the pest problem, indicating over 40% annual production loss due to *C. lameensis*. It clearly presents the study's goal to assess the fungal isolate's pathogenicity through laboratory and semi-field trials, describing experimental doses,

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measured parameters (mortality, LT50, LT90, LT100), and results. The quantitative outcomes (100% mortality at specific spore concentrations and timelines for lethal times) are clearly communicated.

Methodology:

The study uses both laboratory bioassays and semi-field trials to assess fungal efficacy, which provides comprehensive insight into the isolate's potential. The dose-response approach with escalating spore concentrations is appropriate to determine effective lethal doses. The evaluation of biological parameters such as oviposition sites, sex ratio, larval stage durations, and total life cycle length adds valuable biological context to the pest's life history, which is critical for timing control interventions.

Results and Findings:

Results demonstrate high efficacy of *Metarhizium anisopliae* Bme2-cnra, with complete mortality achieved at defined spore concentrations in both laboratory and field settings. The presentation of lethal time values (LT50 and LT100) adds robustness to the assessment of pathogen speed and effectiveness. This data confirms the isolate's potential as a biocontrol agent against *C. lameensis*.

Context and Relevance:

The introduction provides a thorough background on the economic importance of oil palm in Côte d'Ivoire and Africa, including production statistics and contribution to GDP, situating the pest's impact within an economic framework. The description of *C. lameensis* biology and its damage mechanism supports the rationale for exploring alternative pest management strategies beyond synthetic insecticides.

Scientific Contribution:

This research advances knowledge on sustainable pest management by investigating a local

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fungal isolate's applicability as a biocontrol agent, contributing to reduced reliance on chemical insecticides in palm oil cultivation. The findings have direct implications for integrated pest management (IPM) programs in Côte d'Ivoire and similar agro-ecological zones.

Organization and Language:

The manuscript is well-structured, progressing logically from problem statement and pest biology to methodology and results. The language is clear and formal, suitable for scientific communication. Technical terms and measurements are used correctly and consistently.

Overall Assessment:

The manuscript presents a well-conceived study that addresses a critical agricultural problem through biological control. The methodology is sound, results are clearly reported with quantitative support, and the study is relevant for advancing sustainable pest management practices in oil palm cultivation. It makes a meaningful contribution to entomology, plant pathology, and agricultural sustainability literature.
