



AGRICULTURE DEPARTMENT



EMEA COLLEGE OF ARTS AND
SCIENCE



MANCHESTER ARTS AND SPORTS CLUB

Paddy Guardian: *A Student Led Comprehensive Study on Pest Attacks in Neighbouring Villages* **REPORT**



AN EXTENSION PROGRAMME
2023- 2024

Organized
by



DEPARTMENT OF BIOTECHNOLOGY
EMEA COLLEGE OF ARTS AND SCIENCE

(Reaccredited with 'A' grade by NAAC)

Kondotti, Malappuram (Dt) Kerala, Pin-673638

CO-ORGANIZERS

DEPARTMENT OF AGRICULTURE, KERALA

&

MANCHESTER ARTS AND SPORTS CLUB
KUMMINIPARAMBA

INTRODUCTION

In the pursuit of sustainable agriculture and the protection of vital food crops, the Department of Biotechnology at EMEA College, Kondotty, has embarked on a pioneering initiative named "Paddy Guardian." This collaborative program, conducted in partnership with the Department of Agriculture, Government of Kerala, and the Manchester Arts and Sports Club, Kumminiparamba, stands as a testament to the power of interdisciplinary cooperation and community engagement.

The agricultural landscape of our region is indispensable to our socio-economic fabric, with paddy cultivation being a cornerstone of our agrarian heritage. However, the specter of pest attacks looms large, posing a significant threat to the livelihoods of farmers and the overall food security of our communities. In response to this pressing concern, Paddy Guardian was conceived as a comprehensive study designed to understand, address, and mitigate the impact of pest attacks on paddy fields in the neighbouring villages.

The driving force behind Paddy Guardian is the commitment of the students at the Department of Biotechnology, EMEA College, who have taken the lead in designing and executing the study. Under the guidance of experienced faculty members and in collaboration with the Department of Agriculture, Government of Kerala, the students have embarked on a journey to explore innovative and sustainable solutions to counteract pest infestations.

The collaboration with the Manchester Arts and Sports Club, Kumminiparamba, adds a unique dimension to Paddy Guardian by fostering community involvement and creating awareness about the importance of protecting our agricultural heritage. Through a series of outreach programs, workshops, and artistic initiatives, the club aims to bridge the gap between scientific research and community understanding, fostering a shared responsibility for safeguarding our agricultural ecosystems.

This report serves as a comprehensive documentation of the methodologies, findings, and recommendations arising from the Paddy Guardian initiative. As we delve into the intricate web of ecological interactions, pest management strategies, and community dynamics, we hope to provide valuable insights that can inform future agricultural practices, policies, and community-driven interventions.

Paddy Guardian is not merely a scientific endeavor; it is a collaborative effort to empower communities, preserve our agricultural heritage, and pave the way for a more resilient and sustainable future. Through this report, we invite readers to join us in our commitment to protecting the heart of our rural landscape – the paddy fields that sustain us all.



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PADDY GUARDIAN

A Student Led
Comprehensive Study
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Dec.
2023
07

An Extension Programme of

DEPARTMENT OF BIOTECHNOLOGY
EMEA COLLEGE OF ARTS AND SCIENCE, KONDOTTI

Re-accredited with 'A' Grade by NAAC

In Collaboration With

**DEPARTMENT OF AGRICULTURE, KERALA &
MANCHESTER ARTS AND SPORTS CLUB
KUMMINIPARAMBA**

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Flyer of the programme

ACTIVITIES

The Department of Biotechnology at EMEA College organized a comprehensive study under the program "Paddy Guardian" to investigate and collect information on paddy pest attacks, focusing primarily on stem borer and rice leaf folder in Pallikkal village. The objective was to understand the severity of pest infestations, their impact on paddy crops, and to propose effective mitigation strategies.

The student visit took place on 07.12.2023 in various paddy fields of Pallikkal and Peruvallur villages, where the team engaged with local farmers and collaborated with the Agriculture Officer for valuable insights.

1. Collaboration with Agriculture Officer:

A key highlight of the program was the interaction with the Agriculture Officer of Pallikkal village. The officer provided valuable information on the historical trends of pest attacks, government interventions, and the efficacy of existing control measures. This collaboration strengthened the research by incorporating professional expertise.



In front of Agriculture office, Pallikkal Panchayath



Agriculture officer interacting with students



Distributing Vegetables seeds to students by the agriculture office staff as a token of love for visiting the office

2. Farm Visits:

Students conducted extensive field visits to various paddy fields in Pallikkal and Peruvallur village to observe, document, and analyze the extent of pest attacks. They collected samples of affected crops for further laboratory analysis.



In paddy field



Major source of water in Ward No. 20, Pallikkal Panchayath



Paddy fields in Peruvallur Village



Visit in Peruvallur Village fields



Pathikuzhi Check Dam one of the major sources of water of paddy fields in Pallikkal and Peruvallur Villages

3. Interaction with Farmers:

Engaging with local farmers played a crucial role in understanding their first-hand experiences and insights. Students conducted interviews to gather qualitative data on pest prevalence, crop damage, and farmers' existing pest control practices.



Students interacting with farmer



FINDINGS

1. Prevalence of Stem Borer and Rice Leaf Folder:

The study identified a significant prevalence of stem borer and rice leaf folder in the paddy fields of Pallikkal village. The pests were observed across multiple stages of crop growth, indicating a potential threat to the overall yield.



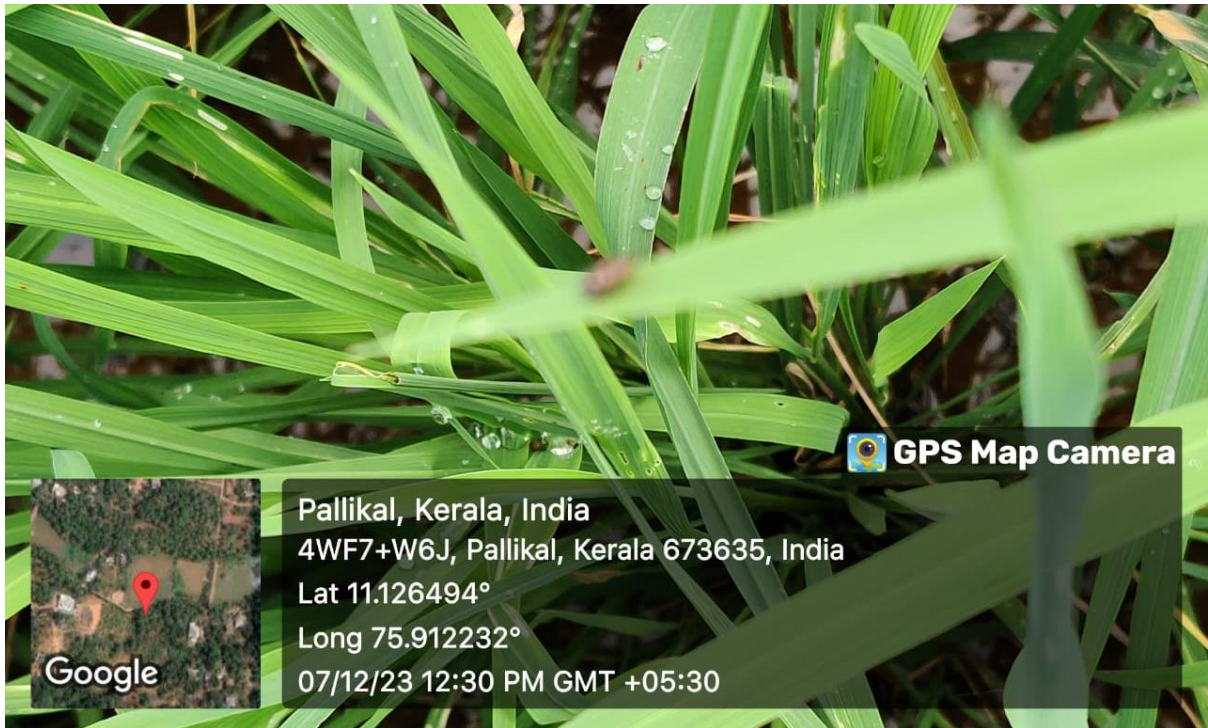
Rice-stem borer insect on paddy



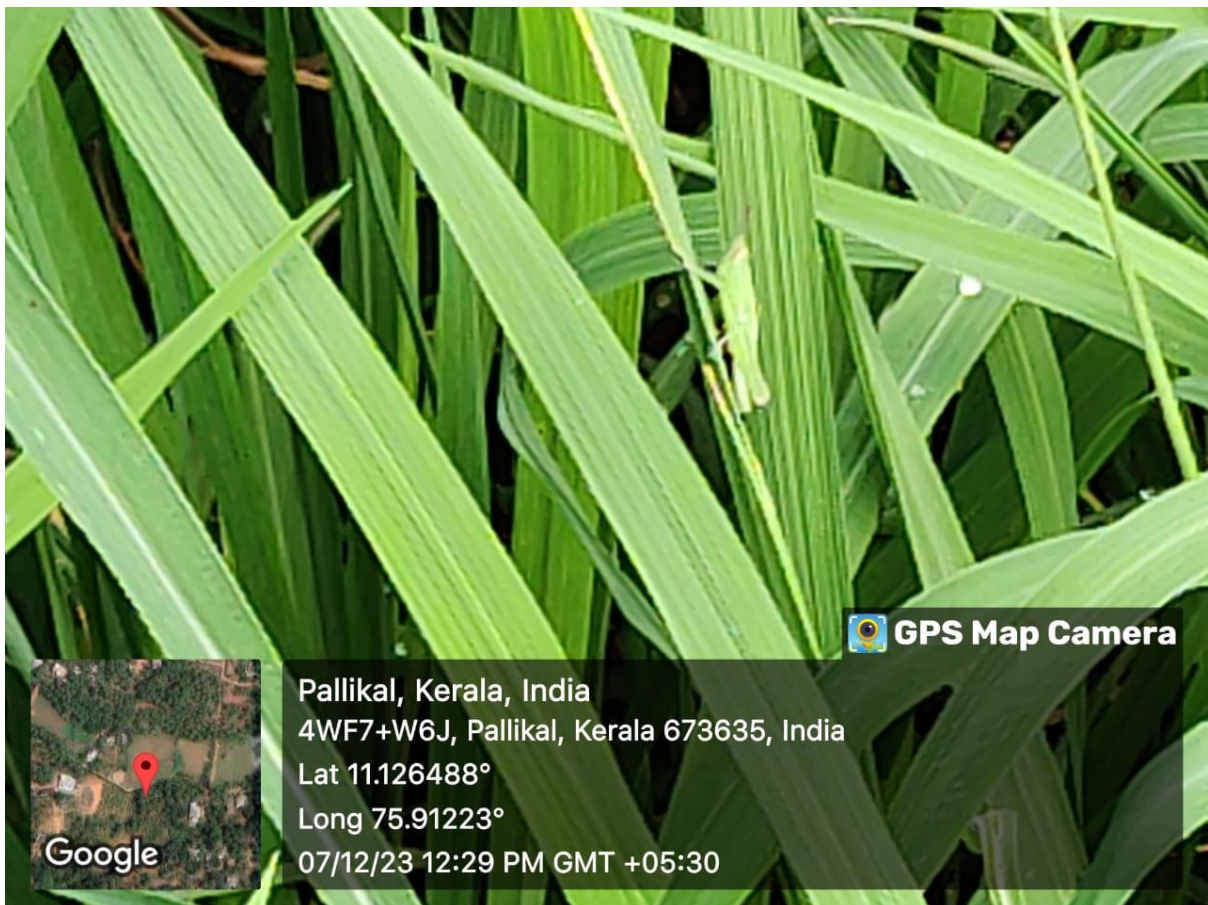
Stem-borer infested Paddy (yellow leaf)



Leaf folder infested paddy (stunted growth)



Leptispa pygmaea, Rice blue beetle



Leaf hoper



Spreading Weeds in paddy field

2. Impact on Crop Yield:

Farmers reported a noticeable impact on crop yield attributed to pest attacks. The damage ranged from reduced grain quality to complete crop loss in some instances, posing a considerable economic challenge for the local farming community.

3. Existing Control Measures:

Insights from farmers and the Agriculture Officer highlighted the use of chemical pesticides as the primary control measure. However, concerns were raised regarding the environmental impact and long-term sustainability of this approach. In some paddy field agriculture Department used Trichogramma (Trichocard) as bio control agent against stemborer and leaf folder.



Using Drones to spray pesticides in paddy field (Photo collected from agriculture office)



Trichogramma (Trichocard) as bio control agent against stemborer and leaf folder.

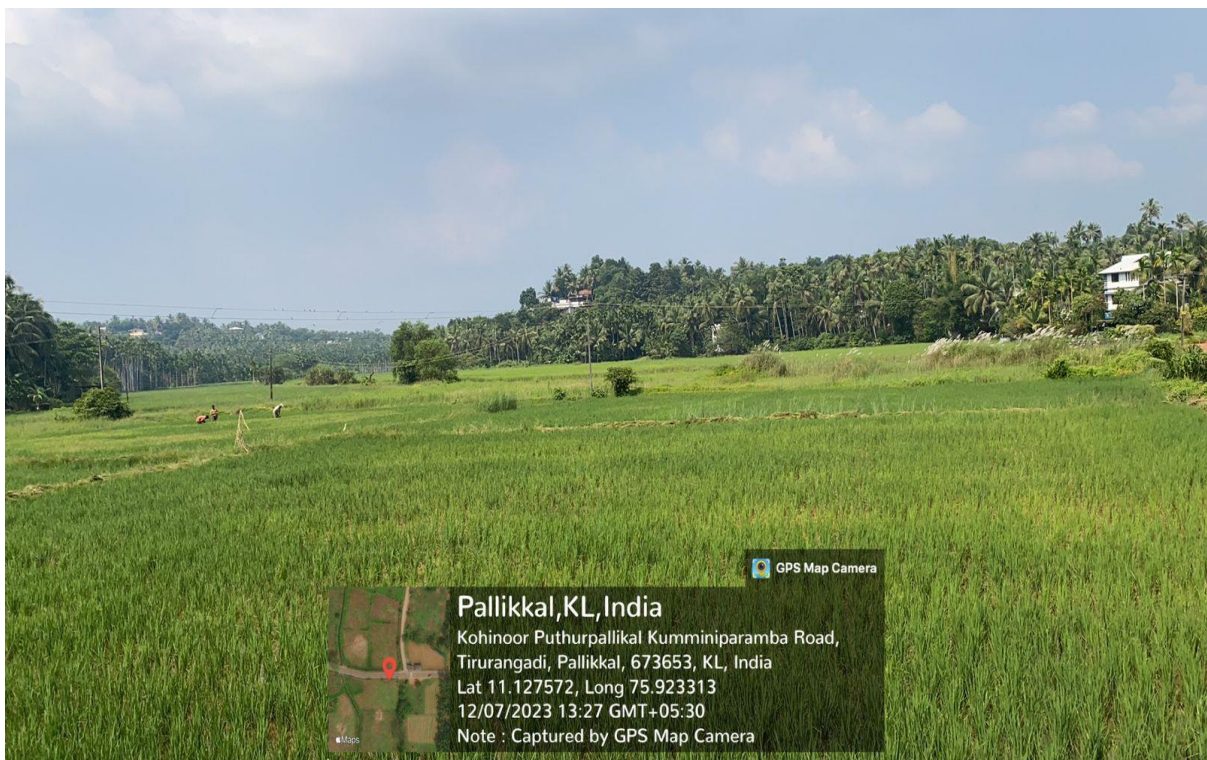
RECOMMENDATIONS

1. Integrated Pest Management (IPM):

The study recommends the implementation of Integrated Pest Management practices, incorporating biological control methods, resistant crop varieties, and cultural practices to minimize reliance on chemical pesticides.

2. Awareness Programs:

To enhance farmers' knowledge on pest management, the program suggests organizing awareness campaigns and workshops. These initiatives can empower farmers with sustainable practices and reduce the indiscriminate use of chemical inputs.



CONCLUSION




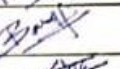
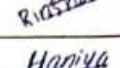

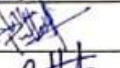

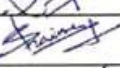


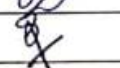
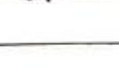


The Paddy Guardian initiative by the Department of Biotechnology at EMEA College provided valuable insights into the challenges posed by stem borer and rice leaf folder in Pallikkal village. The collaborative efforts of students, farmers, and the Agriculture Officer pave the way for informed strategies to address the pest-related issues and promote sustainable agriculture in the region.



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