THE ABUNDANCE OF INSECT PESTS IN PADDY CULTIVATION OVER A YEARS IN TWO SEASONS ASSOCIATED WITH PLANT PHENOLOGY

SITI HAJAR BT HARRY NASUTION

Final Year Project Report Submitted in
Partial Fulfilment of the Requirement for the
Degree of Bachelor of Science (Hons.) Plantation Technology and Management
in the Faculty of Plantation and Agrotechnology
Universiti Teknologi MARA

DECLARATION

This Final Year Project is a partial fulfillment of the requirements for degree of

Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of

Plantation and Agrotechnology, Universiti Teknologi MARA.

It is entirely my own work and has not been submitted to any other University or

higher education institution, or for any other academic award in this University.

Where use has been made of the work of other people it has been fully acknowledged

and fully referenced.

I hereby assign all and every right in the copyright to this Work to the Universiti

Teknologi MARA ("UiTM"), which henceforth shall be the owner of copyright in this

Work and that, any reproduction or use in any form or by any means whatsoever is

prohibited without a written consent of UiTM.

Candidate's signature: Date: W 18 /2015

Name: SITI HATAR BT HARPY WASUTION

I hereby declare that I have checked this project and in my opinion, this project is

adequate in terms of scope and quality for the award of the degree of Bachelor of

Science (Hons.) Plantation Technology and Management, Faculty of Plantation and

Agrotechnology, Universiti Teknologi MARA.

Signature:

Name of Supervisor:

Position:

Date:

iii

| TABLE OF CONTENT | | |
|---|--|---|
| | | Page |
| ACKNOWLEDGEMENTS TABLE OF CONTENTS LIST OF FIGURES LIST OF TABLE ABSTRACT | | iv v-vi vii viii ix |
| ABS | TRAK | X |
| <u>CHA</u> | <u>APTER</u> | |
| 1 | INTRODUCTION 1.1 : Background and problem statement 1.2 : Objective of study 1.3 : Significance of study 1.4 : Scope of study | 1-3 3 4 4 |
| 2 | LITERATURE REVIEW | |
| | 2.1: Paddy in FELCRA 2.1.1 Variety MR219 2.1.2 Variety MR220 2.2: Biology of brown planthopper (BPH) 2.2.1 Life cycle of brown planthopper (BPH) 2.2.2 Ecology of brown planthopper (BPH) 2.2.3 Chemical control 2.3: Biological control 2.3: Biology of white backed planthopper (WBPH) 2.3.1 Symptom and damage by white backed planthopper (WBPH) 2.3.2 Life cycle of white backed planthopper (WBPH) 2.4: Biology of rice black bug (RBB) 2.4.1 Life cycle of rice black bug (RBB) 2.4.2 Biological control agent of rice black bug 2.5: Biological of rice hispa 2.5: Life cycle of rice hispa 2.6: Biology of rice stink bug (RSB) 2.6.1 Life cycle of rice stink bug (RSB) 2.7: Biology of rice thrips 2.7.1 Life cycle of rice thrips 2.8: Natural enemies of insect pests in paddy field 2.9: Plant phenology 2.9.1 Flowering phenology 2.9.2 Fruiting phenology 2.9.2 Fruiting phenology | 5 6 6 7-12 13 14 14 15-16 17 17 18 19-20 21 22 23 24 25 26 27-28 28-29 30 31 31 32 |

3 MATERIALS AND METHOD / RESEARCH **METHODOLOGY** 3.1: Location of Study 33 3.2: Host crop for insect collection 34 3.3: Sampling method 34-35 3.3:1 Data collection 36 3.5:2 Processes and procedures of conducting experiment 37 3.4: Parameters of study 38 3.4:1 Distribution and abundance of insect pests 38 3.5: Statistical analysis 38 3.6: Equipments 38 4 RESULTS 4.1: Plant phenology and the abundance of insect pests in paddy 4.1:1 Abundance of insect pests in block 1 (L1B1) 39 4.1:2 Abundance of insect pests in block 1 (L1B1) 40 4.1.3 Abundance of insect pests in block 2 (L1B2) 41 4.1.4 Abundance of insect pests in block 2 (L1B2) 42 4.1.5 Abundance of insect pests in block 3 (LIC) 43 4.1.6 Abundance of insect pests in block 3 (L1C) 44 4.2: Anova test 45-48 4.3: Correlation between natural enemies with brown planthopper (short wing), brown planthopper (long wing) and white backed planthopper (WBPH) 49 5 **DISCUSSION** 50-52 6 CONCLUSION AND RECOMMENDATION 53-54

CITED REFERENCE

CURRICULUM VITAE

APPENDICES

55-59

62-63

61

ABSTRACT

THE ABUNDANCE OF INSECT PESTS IN PADDY CULTIVATION OVER A YEARS IN TWO SEASONS ASSOCIATED WITH PLANT PHENOLOGY

The study was carried out to determine the abundance of insect pests in paddy cultivation over a year in two seasons associated with plant phenology. Plant phenology is the study of observation, recording and interpretation of the timing of their life history. Plant phenology include leafing, flowering and fruiting. The abundance of insect pests can be relate to the plant phenology. By knowing the growth pattern of paddy crops, from the time of seedling until maturity, the abundance of insect pests can be oberved. The abundance of insect pests also influence by climate, farmer's control practices, temperature and migration of insect pests. This will help the farmers to plan a schedule to control the insect pests from becoming worst.