INFLUENCE OF TEMPERATURE AND RELATIVE HUMIDITY ON COFFEE PESTS AND THEIR NATURAL ENEMIES

THESIS

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INFLUENCE OF TEMPERATURE AND RELATIVE HUMIDITY ON COFFEE PESTS AND THEIR NATURAL ENEMIES

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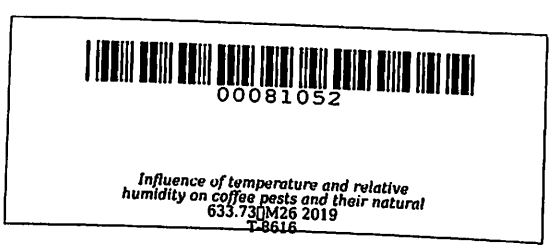
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ABSTRACT

MADRAZO, RACHEL S. Influence of Temperature and Relative Humidity to Coffee Pests and their Natural Enemies Undergraduate Thesis, Bachelor of Science in Agriculture major in Crop Science, Cavite State University, Indang, Cavite, June 2019. Adivser: Dr. Evelyn O. Singson

The study was conducted at two locations: Non-shaded and shaded areas at the National Coffee Research Development and Extension Center (NCRDEC). This study was conducted for 10 months, from June 2018 to March 2019. This study aimed to: identify the different insect pests and natural enemies of coffee in non-shaded and shaded areas in the coffee plantation; determine infestation rate of coffee pests in non-shaded and shaded areas; and determine the effect of temperature and relative humidity on coffee pests and their natural enemies

The insect pests collected and observed belong to order Hemiptera (green coffee scale and aphids). Coleoptera (beetles), Lepidoptera (butterflies and moths), Orthoptera (grasshopper), and Diptera (flies). Meanwhile, natural enemies commonly belong to order Hymenoptera (Wasps) and Coleoptera (Malaysian lady beetle). Infestation rate of common insect pests show that Coffee berry borer is higher in non-shaded area while coffee green scale is higher in shaded area. The result of the study show that temperature has significant influence on the number of insect pests. The statistical analysis reveal that for every increase per unit of temperature, there is a double increase in species of the insect pests. However, relative humidity is not an indicator of population of natural enemies and insect pests

TABLE OF CONTENTS

	Page
BIOGRAPHICAL DATA	iii
ACKNOWLEDGMENT	iv
ABSTRACT	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF APPENDIX TABLES	xi
LIST OF APPENDIX FIGURE	xii
LIST OF PLATES	xiii
INTRODUCTION	1
Objectives of the study	3
Significance of the Study	3
Scope and Limitations of the Study	4
REVIEW OF RELATED LITERATURE	5
MATERIALS AND METHODS	11
RESULT AND DISCUSSION	15
Description of study sites	15
Insects pests in Non-shaded area	15
Natural enemies in Non-shaded area	23
Insect pests in Shaded-area	29
Natural enemies in Shaded area	37

Infestation rate of non-countable insect pests in non-shaded area 38

Infestation rate of non-countable insect pests in Shaded area 40

Total count of Coffee berry borer on the ground in non-shaded area 41

Total count of Coffee berry borer on the ground in shaded area 42

Influence of Temperature on Coffee Pests and their Natural Enemies 43

Influence of Relative Humidity on Coffee Pests and their Natural Enemies 45

SUMMARY, CONCLUSION AND RECOMMENDATION 46

Summary 46

Conclusion 47

Recommendation 47

REFERENCES 48

APPENDICES 54

PLATES 68

LIST OF TABLE

Table		Page
1	Insects pests encountered in non-shaded area	16
2	Infestation of non-countable insect pests in non-shaded area	22
3	Abundance of natural enemies in non-shaded area	24
4	Abundance of insect pests in shaded area	31
5	Infestation of non-countable insects in shaded area	35
6	Abundance of natural enemies in shaded area	38
7	Total count of larva and adult coffee berry borer in non-shaded area	41
8	Total count of larva and adult coffee berry borer in shaded area	42
9	Influence of Temperature to Insect pests	44
10	Influence of Temperature to Coffee Natural enemies	44
11	Influence of Relative Humidity to coffee insect pests	45
12	Influence of Relative humidity to Coffee Natural enemies	45

LIST OF FIGURES

Figure		Page
1	Top eight insects pests in encountered in non-shaded area.....	20
2	Total count of the different species of insect pests in Non-shaded area	23
3	Total population of two most abundant species of natural enemies encountered in the non-shaded area.....	28
4	Total count of the different species of Natural enemies in Non-shaded area	29
5	Top three most abundant pest encountered in shaded area.....	34
6	Total count of the different species of insect pests in Shaded area	35
7	Total count of the different species of natural enemies in shaded area.....	36
8	Monthly infestation rate of non-countable coffee insect pests in non-shaded area.....	39
9	Monthly infestation rate of non-countable coffee insect pests in Shaded area	40

LIST OF APPENDIX TABLE

Table		Page
1	Abundance of insect pests in non-shaded area	55
2	Infestation rate of coffee pests in non-shaded area	56
3	Infestation rate of coffee pests in shaded area	56
4	Over all data of pests, natural enemies, temperature and relative humidity	57
5	Data of coffee berry borer of larva and adult in non-shaded area on March 06, 2019.....	57
6	Data of coffee berry borer of larva and adult in non-shaded area on March 13, 2019.....	58
7	Data of coffee berry borer of larva and adult in non-shaded area on March 20, 2019.....	59
8	Data of coffee berry borer of larva and adult in non-shaded area on March 27, 2019.....	59
9	Data of coffee berry borer of larva and adult in shaded area on March 6, 2019.....	60
10	Data of coffee berry borer of larva and adult in shaded area on March 13, 2019	60
11	Data of coffee berry borer of larva and adult in shaded area on March 20, 2019	60
12	Data of coffee berry borer of larva and adult in shaded area on March 27, 2019.....	61

LIST OF APPENDIX FIGURE

Figure		Page
1	Materials used in collection and preservation of insects	62
2	Tagging of the sampled coffee trees.....	63
3	Data gathering in Non-shaded area	64
4	Data gathering in shaded area	65
5	Insect preservation using vials, forceps and alcohol.....	66
6	Identification of insects under the microscope	67

LIST OF PLATES

Plate		Page
1	Black horned gem, *Microchrysa polita* (Stratiomyidae,Diptera)	69
2	Blowfly, *Calliphora sp* (Calliphoridae, Diptera).....	70
3	Common Housefly, *Musca domestica* (Muscidae, Diptera)	71
4	Pomacefly, *Drosophila melonogaster* (Drosophilidae, Diptera).....	72
5	Green Coffee Scale, *Coccus viridis* (Coccidae,Homoptera).....	73
6	Coffee berry borer, *Hyphothenemus hampei* (Curculionidae, Coleoptera)	74
7	Leafhopper, *Nephotettix sp.* (Cicadellidae,Hemiptera)	75
8	Malaysian black beetle, *Chilocorus nigrita* (Coccinellidae, Coleoptera)	76
9	Mealybug destroyer, *Cryptolaemus montrouzieri* (Coccinellidae, Coleoptera)	77
10	Mediteranean mantis, *Heirodula parviceps* (Mantidae,Mantodea).....	78
11	Weaver ant, *Oecophylla smaragdina* (Formicidae, Hymenoptera).....	79

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INTRODUCTION

Coffee is the second internationally transacted commodity in the world next to petroleum oil (Bongase, 2017). It is primarily cultivated in the equatorial regions of Central and South America, Africa and Southeast Asia. Coffee plants are now raised in more than 70 countries. In the Philippines, coffee farmers usually own a land with an average size of 1 to 2 hectares. The most common coffee species used is *Coffea canephora* which contributes to over 75% of production followed by *C. arabica, C. liberica and C. excelsa.* The total land production allocated in the Philippines for coffee production is 113,738 hectares. SOCCSKSARGEN has the highest portion with 26,731 hectares. Meanwhile CALABARZON produced 2,272 metric tons of coffee beans in 2015 and increased in 2016 with 2,817 metric tons. Coffee is the most traded tropical crop that is being exported throughout the world. However Craparo *et al.* (2015) and Bongase (2017) concluded that the harsh effects of climate change lowered the