FICACY OF FOUR PLANT EXTRACT AS MOLLUCICIDES AND OF SILECTED ATTRACTAMES FOR AMTERIALMEN SNAM (Macrocaus specialistic Pheimer)

THESIS

BANCY B. PESA

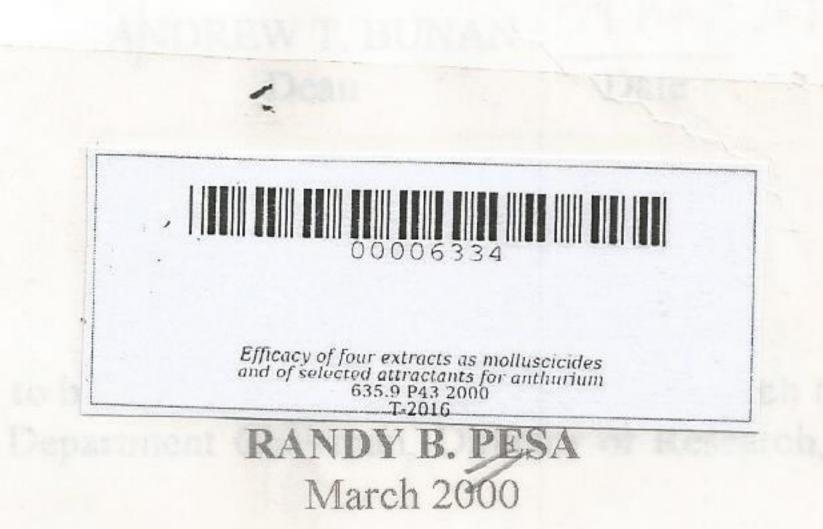
Department of Gree Receives
CAVITE STATE UNIVERSITY
Induse, Cavics

March 2000

EFFICACY OF FOUR PLANT EXTRACTS AS MOLLUSCICIDES AND OF SELECTED ATTRACTANTS FOR ANTHURIUM SNAIL (Macroceras spectabilis Pfeiffer)

Undergraduate Thesis
Submitted to the Faculty of the
Cavite State University
Indang, Cavite

In partial fulfillment
of the requirements for the degree of
Bachelor of Science in Agriculture
(Major in Crop Protection)



ABSTRACT

PESA, RANDY B. Cavite State University, Indang, Cavite. March 2000.

Efficacy of Four Plant Extracts As Molluscicides and of Selected Attractants for Anthurium Snail (Macroceras spectabilis Pfeiffer). Adviser: Dr. Evelyn Oquias Singson.

Two sets of experiments were conducted to evaluate nontraditional control measures against anthurium snails. The study evaluated four pesticidal plant extracts against anthurium snails. The experiment was laid out in Completely Randomized Design (CRD) with three replications.

The study was conducted at the Research Laboratory of the Department of Crop

Protection and Benguet State University, La Trinidad, Benguet from November 1999 to

February 2000.

Results showed that among the four plant extracts evaluated, calamansi extract the most effective against anthurium snails. Water stargrass, sambong and psychic were less effective as molluscicides.

Among the attractants evaluated, beer was the most effective followed by sweet potato. White potato and cabbage were less effective attractants for anthurium snails.

TABLE OF CONTENTS

	Page
BIOGRAPHICAL DATA	111
ACKNOWLEDGMENT	iv
ABSTRACT	vi
LIST OF TABLES	X
LIST OF APPENDIX TABLES	xi
LIST OF APPENDIX FIGURE	xii
INTRODUCTION	1
Importance of the Study	2
Objectives of the Study	3
Time and Place of the Study	3
Limitation of the Study	4
REVIEW OF RELATED LITERATURE	5
Pesticidal Plant Extracts	6
Sambong	6
Calamansi	7
Psychic nut	7
Water stargrass	8
Attractants	8
Beer	8

White potato	8
Cabbage	9
Sweet Potato	9
METHODOLOGY	10
Experiment 1. Evaluation of Selected Pesticidal Plants Against Anthurium Snails	10
Preparation of Pesticidal Plants	10
Application of Pesticidal Plants	11
Data Gathering	11
Experiment 2. Evaluation of Some Attractants for Anthurium Snails	11
Preparation of Attractants	12
Application of Attractants	12
Data Gathering	12
ESULTS AND DISCUSSION	13
Experiment 1. Evaluation of Selected Pesticidal Plants Against Anthurium Snails	13
Comparative Analysis of the Different Treatments as Affected by Exposure Period	13
Ten minutes after treatment	13
One hour after treatment	13
Six hours after treatment	15
Twenty-four hours after treatment	15
Forty-eight hours after treatment	16

Experiment 2. Evaluation of Some Attractants for Anthurium Snails	17
Comparative Analysis of the Different Treatments as Affected by Exposure Period	18
Ten minutes after treatment	18
One hour after treatment	18
Three hours after treatment	19
Six hours after treatment	19
Nine hours after treatment	19
Eleven hours after treatment	20
SUMMARY, CONCLUSION AND RECOMMENDATION	21
Summary	21
Conclusion	21
Recommendation	22
LITERATURE CITED	23
APPENDICES	25
APPENDIX FIGURE	37

LIST OF TABLES

Table		Page
	Mean percent mortality of anthurium snails as affected by different pesticidal extracts and period of exposure	14
2	Mean number of anthurium snails attracted to the treatments at various time intervals	17

LIST OF APPENDIX TABLES

Appendix T	able	Page
1a	Number of dead anthurium snails as affected by different plant extracts at 10 minutes after treatment	26
1b	Number of dead anthurium snails as affected by different plant extracts at one hour after treatment	26
1c	Number of dead anthurium snails as affected by different plant extracts at six hour after treatment	27
1d	Number of dead anthurium snails as affected by different	
1e	plant extracts at 24 hour after treatment Number of dead anthurium snails as affected by different	27
2a	plant extracts at 48 hour after treatment Analysis of variance for mean percent mortality of	28
2a	snails as affected by different pesticidal extracts at 10 minutes after treatment	29
26	Analysis of variance for mean percent mortality of snails as affected by different pesticidal extracts at one hour after treatment	29
2c	Analysis of variance for mean percent mortality of snails as affected by different pesticidal extracts at six hours after treatment	30
2d	Analysis of variance for mean percent mortality of snails as affected by different pesticidal extracts at 24 hours after treatment	30
2e	Analysis of variance for mean percent mortality of snails as affected by different pesticidal extracts at 48 hours after treatment	31
3a	Number of anthurium snails attracted to the different attractants at 10 minutes after treatment	3.2

3b	Number of anthurium snails attracted to the different attractants at one hour after treatment	3:
3c	Number of anthurium snails attracted to the different attractants at three hours after treatment	3:
3d	Number of anthurium snails attracted to the different attractants at six hours after treatment	3.
3e	Number of anthurium snails attracted to the different attractants at nine hours after treatment	3.
3f	Number of anthurium snails attracted to the different attractants at 11hours after treatment	3.
4a	Analysis of variance for mean number of anthurium snails attracted to the different attractants at	
4b	Analysis of variance for mean number of anthurium snails attracted to the different attractants at	34
4c	one hour after treatment Analysis of variance for mean number of anthurium	34
70	snails attracted to the different attractants at three hours after treatment	35
4d	Analysis of variance for mean number of anthurium snails attracted to the different attractants at six hours after treatment	35
4e	Analysis of variance for mean number of anthurium snails attracted to the different attractants at nine hours after treatment	36
4f	Analysis of variance for mean number of anthurium snails attracted to the different attractants at 11 hours after treatment	36

LIST OF APPENDIX FIGURES

Appendix Figure		Page
1	Lay-out of Experiment 2	38
2	Macroceras spectabilis	39
3	Kalliella doliolum	40
4	Tornatellina exilis	41
5	(a) Sambong leaves; (b) Calamansi leaves	42
6	(a) Mature seeds of Psychic nut; (b) Water stargrass	43

The miniprests of South America, Colombia and Hawall, Hawaiton breeders

EFFICACY OF FOUR PLANT EXTRACTS AS MOLLUSCICIDES AND OF SELECTED ATTRACTANTS FOR ANTHURIUM SNAIL (Macroceras spectabilis Pfeiffer)^{1/}

Randy B. Pesa

L'A thesis manuscript presented to the faculty of the Department of Crop Protection, College of Agriculture, Forestry, Environment and Natural Resources, Cavite State University, Indang, Cavite in partial fulfillment of the requirements for graduation with the degree of Bachelor of Science in Agriculture (Major in Crop Protection). Contribution No. <u>BSA-2000-02-002</u>. Prepared under the supervision of Dr. Evelyn O. Singson.

INTRODUCTION

Anthurium (Anthurium andreamum Andre) a terrestrial herb grown for their attractive spathes is used as ornamental foliage plant or as flowering plant. The plant is a member of Aroid family (Araceae). It is naturally grown best in well aerated organic material with good water holding capacity but with excellent drainage. Anthurium is to the rainforests of South America, Colombia and Hawaii. Hawaiian breeders were the first to introduce commercial production of cutflower varieties of anthurium. Commercial production began in 1950 and probably reached the Philippines in the late 70°s (Agribusiness Factbook, 1993).

In the Philippines, anthurium is fast gaining popularity as cutflower and is a molitable venture since it can be grown locally. It thrives very well under local condition