Assessment of Different Broad Beans Varieties to the Infestation by faba bean beetle *Bruchidius incarnatus* (Boh.) (Coleoptera, Bruchidae) in the Store.

By
Afrah Hassan Suliman Ortashi
B.Sc. (Agric.) Honours - 1996
Sudan University of Science and Technology

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Plant Protection.

Supervisor,
Prof. Asim Ali Abdel Rahman

Department of Plant Protection

College of Agricultural Studies

Sudan University of Science & Technology

September - 2004

CONTENTS

DEDICATION	1
ACKNOWLEDGEMENTS	ii
ENGLISH ABSTRACT	iii
ARABIC ABSTRACT	iv
CHAPTER ONE: INTRODUCTION	1
CHAPTER TWO: REVIEW OF LITERATURE	5
2.1 Faba bean (<i>Vicia faba</i> L.)	5
2.1.1 Origin and usage	5
2.1.2 Economic importance	5
2.1.3 Geographical distribution and production	6
2.2.1 Description of <i>Bruchidius incarnatus</i>	6
2.2.2 Distribution	7
2.2.3 Biology of Bruchidius incarnatus	8
2.2.4 The economic importance of the pest	9
2.2.5 Host range	10
2.3 Basis of preference and resistance	11
2.4 Percentage damage and losses	12
CHAPTER THREE: MATERIALS AND METHODS	13
CHAPTER FOUR: RESULTS	21
4.1 The effect of varieties on egg number	21
4.2 The effect of varieties on emergence holes	21
4.3 The effect of seed variety on the number of emerging	22
adults	
CHAPTER FIVE: DISCUSSION	34
CONCLUSIONS AND RECOMMENDATIONS	36
REFERENCES	38
APPENDICES	41
Appendix 1	41
Appendix 2	42
Appendix 3	43

LIST OF TABLES

Table	Title	No
1.	The effect of broad bean variety on egg laying by B .	
	incarbatus	23
2.	Means number of emergence holes of <i>B. incarnatus</i> per	
	18 gms seeds of faba bean varieties	23
3.	Number of emerging adults of <i>B. inarnatus</i> per 18 gms	
	of seeds of faba bean varieties	34
4.	The nutritive values of faba bean seeds as shown by the	
	chemical analysis of four varieties	24

LIST OF FIGURES

Fig.	Title	No.
1.	Mean number of eggs of <i>B. incarnatus</i> laid on the seeds	
	of four broad beans varieties	26
2.	Mean number of emergence hole of <i>B. incarnatus</i> shown	
	by four varieties of broad beans	27
3.	Mean number of adults of <i>B. incarnatus</i> emerged	
	from four broad beans varieties	28
4.	Number of adults of <i>B. incarnatus</i> emerged from Agbat	
	variety	29
5.	Number of adults of <i>B. incarnatus</i> emerged from Selaim	
	variety	30
6.	Number of adults of <i>B. incarnatus</i> emerged from Turki	
	variety	31
7.	Number of adults of <i>B. incarnatus</i> emerged from Habashi	
	variety	32
8.	Number of adults of <i>B. incarnatus</i> emerged from four	
	broad bean varieties	33

LIST OF PLATES

Plate	Title	No.
1.	Eggs of Bruchidius incarnatus laid on the seeds of Turki	
	variety	15
2.	Emergence holes of Bruchidius incarnatus shown by	
	Turki variety	16
3.	Adults of Bruchidius incarnatus emerged from Turki	
	variety	17
4.	Eggs of Bruchidius incarnatus laid on the seeds of	
	Habashi variety	18
5.	Emergence holes of Bruchidius incarnatus shown by	
	Habashi variety	19
6.	Adults of Bruchidius incarnatus emerged from Habashi	
	variety	20