

DEDICATION

To the Soul of My Father
And My Sister Marwa
Be love Mother
Precious Brothers
Lovely Sisters
All My Friends.

ACKNOWLEDGEMENTS

First of all , I render my gratitude and praise to the Almighty "Allah." I wish to express my sincere gratitude to my supervisor Dr. Ensaf Skiekh Idris for her helpful guidance encouragement and supervision of this research .

I am deeply grateful to professor siddig Ahmed siddig for his valuable information. Thanks are also extend to Dr. Dieya Eldin. M.Y. Elajwah for his efforts and helpful on this research .

I acknowledge with thanks , the help rendered to my colleagues and staff of the department of the crop protection, Collage of Agricultural Studies, Sudan University of Science and Technology.

Sincere thanks are also extended to those who helped me in various ways and encouraged me to achieve and finish my research work. I would like to name Dr. Abd Elgadir Ahamed ,Dr. Kawther H. Dawood, Ustaz Hatium, Ustaz Hamed Zayid, Ustaz omer Ibrahim Elzobidy and the field team staff for their helps.

I am deeply grateful to staff and members of ELneleen university computer center (wad Elbashir center) for their help and specially to Ustaz Omer ELmamoon who typed this thesis .

Finally , special thanks are extend to my family for financing my studies and helping me in many ways to comfortably finish this work.

Abstract

Onion thrips *Thrips tabaci* is the principal pest of economic importance attacking onion in most growing areas, damage in the Sudan may reach 40%.

This experiment was conducted at Shambat Research Station, Agricultural Research and Technology Corporation (Khartoum Bahari). During winter season (2004/2005), to evaluate the performance of Nimbecidine (Azadirachtin) 0.03% EC for the control of onion thrips *T. tabaci*.

Nimbecidine with four dosage rates was compared with Decis (deltamethrin) 2.5% EC at recommended dose (2g a.i./fed) and untreated control.

The experiment laid out in randomized complete block design with six treatments with three replications. All cultural practices were adopted according to Agricultural Research and Technology Corporation recommendations.

The results indicated that Nimbecidine with all tested doses significantly reduced the number of thrips populations compared with the untreated control.

The performance of Nimbecidine increased with dosage rates increased and 1.5ml\litre was the most effective. Nimbecidine was less effective compared with standard insecticide (Decis).

Nimbecidine and standard insecticide significant increased onion yield (Ton\ fed) compared with the untreated control.

ملخص الأطروحة

تعتبر حشره تربس البصل الآفة الوحيدة ذات الأهمية الاقتصادية التي تصيب البصل في معظم مناطق زراعته وتسبب أضرار قد تصل إلى 40% من إنتاج البصل في السودان.

أجريت هذه التجربة بمحطة بحوث شمبات هيئة البحوث والتقانة الزراعية (الخرطوم بحري) خلال الموسم الشتوي (2004/2005م) لدراسة كفاءة مبيد نيمبسيدين (أزديترين 0.03%) لمكافحة تربس البصل.

أختبر مبيد نيمبسيدين بأربعة جرعات و قورنت بالمبيد القياسي دسيس (دلتا مثرين) 2.5% مستحلب بالجرعة الموصى بها 2جم مادة فعالة والشاهد غير المعامل . صممت التجربة بنظام القطاعات الكاملة العشوائية حيث احتوت على ست معاملات مكررة ثلاثة مرات وطبق جميع العمليات الفلاحية الموصى بها.

أوضحت النتائج أن المعاملات بمبيد النيم المصنع (نيمبسيدين) ذات فعالية عالية في خفض أعداد التربس مقارنة بالشاهد غير المعامل، وترداد فعالية هذا المبيد بزيادة الجرعة ولكن كل هذه الجرعات أقل فعالية مقارنة بالمبيد القياسي دسيس.

كل المعاملات بمبيد النيم نيمبسيدين ودسيس أدت إلى زيادة الإنتاجية مقارنة بالشاهد غير المعامل.

List of Contents

	Page
Dedication.....	i
Acknowledgements.....	ii
Abstract.....	iii
Arabic Abstract.....	iv
List of Contents.....	v
List of Tables.....	viii
List of Plates.....	ix
Chapter One :Introduction	1
Chapter Two :Review of Literature	3
2.1 Onion Production in Sudan.....	3
2.2 Onion thrips (<i>Thrips tabaci</i>).....	4
2.2.1 Distribution.....	4
2.2.2 Host Plants.....	5

2.2.3 The life cycle.....	5
2.2.4 Damage.....	6
2.3 Control Measures.....	7
2.3.1.Culture Control.....	7
2.3.1.1 Planting Season.....	7
2.3.1.2 Irrigation.....	7
2.3.1.3 Seeding.....	8
2.3.1.4 Inter-cropping.....	8
2.3.2 Mechanical control.....	9
2.3.3 Biological Control.....	9
2.3.4 Resistant Varieties.....	10
2.3.4 Chemical Control.....	10
2.4 The Neem tree (<i>Azadirachta indica</i> A. Juss).....	12
2.4.1 Mechanism of action.....	13
2.4.2 The active ingredient in neem tree.....	13
2.4.3 Effect of neem on beneficial insects.....	16
2.4 Effect on human health.....	16
2.5.1 Commercial products of neem.....	16
2.6 Nimbecidine.....	17
2.6.1 Chemistry of Nimbecidine.....	17
Chapter Three : Materials and Methods.....	19

3.1 Treatment and dosage rate per feddan.....	19
3.2 Data analysis.....	20
Chapter Four : Results.....	22
4.1 First spray.....	22
4.2 Second spray.....	23
4.3 Third spray.....	23
4.4 Forth spray.....	24
4.5 Onion yield.....	24
Chapter five : Discussion.....	36
Recommendations.....	37
References.....	38

List of Tables

Table	Page
Table 1:The effect of Nimbecidine against onion thrips First spray.....	25
Table 2:The effect of Nimbecidine against onion thrips second spray..	26
Table 3:The effect of Nimbecidine against onion thrips third spray.....	27
Table 4:The effect of Nimbecidine against onion thrips fourth spray...	28
Table 5:The effect of thrips control on onion yield.....	29

List of Plates

Plate	Page
Plate 1:Treated by Nimbecidine 0.75ml (Saggai Red).....	30
Plate 2:Treated by Nimbecidine 1.0ml (Saggai Red).....	31
Plate 3:Treated by Nimbecidine 1.3ml (Saggai Red).....	32
Plate 4:Treated by Nimbecidine1.5ml (Saggai Red).....	33
Plate 5:Treated by Decis 2.5% 2ml (Saggai Red).....	34
Plate 6:Untreated Control (Saggai Red).....	35