CONTENTS

	Page
1. INTRODUCTION	1
2. REVIEW AND LITERATURE	3
A- Control of Varroa destructor	3
1- Natural products	3
2- Essential oils	9
3- Dusting the fine white sugar	14
4-Natural Smoke products	15
5- Pollen Traps	16
6- Integrated pest management I.P.M	17
7- Formic acid	21
B- Control of chalk brood	23
1- Natural products	23
2- Essential oil	24
C- Control of Vespa Orientalis	27
3. MATERIALS AND METHODS	33
A. Survey of honeybee diseases and pests in	
Qualubia Government	33
B. The experiment	34
I. Varroa mites (Varroa destructor)	35
I.1. Estimation of % infestation	35
I.1.1.Mites (Varroa destructor) on adult	
workers	35
I.1.2.Varroa mites in sealed brood	35
I.2.Control of Varroa destructor used by Natural	
Products	36

13 Effect of volatile oils (Versey 1) V	-
I.3. Effect of volatile oils (Varroazol) on Varroa	
mites	38
I.4.Effect of sugar powder as dusting on Varroa	
mite control	40
I.5. Effect of using the natural products in	• •
smoking	41
I.6. Effect of pollen traps and formic acid on	41
Varroa mite control	42
I.7. Effect of formic acid 85% on Varroa mite	44
control	43
I.8.Effect of volatile oils on Varroa destructor	43
I.8.1. Evaluation of some volatile oils for	40
controlling the Varroa mites	12
I.8.2.Effect of some volatile oils by sugar	43
species	¥9 — 9
I 8.3 Effect of some valetile oils by	45
I.8.3.Effect of some volatile oils by carton	
strips	46
I.8.4. Effect of some volatile oils by cotton	
strips	46
I.9. Effect of substitutes for reduction the Varroa	
mites	47
I.10. Comparative between production and	
infestation by Varroa destructor (2003-	
2004)	47
II. Chalkbrood	48
II.1.Effect of natural temperature for controlling	70
chalkbrood	48
	40

II.2. Effect of Varroazal for controlling	
chalkbrood	49
II.3. Effect of sugar powder for controlling	
chalkbrood	49
III. Oriental hornet Vespa orientalis	50
III.1. Effect the best time from the day for queen	
capture Vespa orientalis	50
III.2.Comparative between some material for	
trapping the wasps	50
III.3. Comparative between some baits for	
trapping wasps	51
III.4. Comparative between some traps for	
trapping queens and workers wasps	51
IV. Statistical analysis	51
4. RESULT AND DISCUSSION	59
I. Control of Varroa destructor by natural products	62
I.1Effect of Spraying some plant extracts on	
Varroa mite	65
I.2.Effect of dusting some Natural Products for	
Controlling Varroa mite	68
I.3.Effect of some Natural Products as a cake for	
controlling Varroa mite	72
II. Control varroa mite	73
II.1. Effect of dusting with some varrozal	76
II.2. Effect of difference methods of Varroazol	
application for control Varroa destructor	
during winter 2001	79

I.2.3. Effect of difference methods of Varroazol	
application for control Varroa destructor	
during winter 2002	82
I.2.4. Effect of spraying Varroazal on honeybee	
colonies for controlling of Varroa	
destructor during winter 2002	86
I.2.5. Effect of Varroazal dust on honeybee	
colonies for controlling of Varroa	
destructor during winter of 2004	89
I.3. Dusting the fine white sugar	90
I.3.1. Effect of sugar powder on honeybee	
colonies of control Varroa mite during	
winter 2002	93
I.3.2. Effect of menthol leaves dusting added	
powder sugar on bees and combs for	
control Varroa destructor during winter	
2002	96
I.4. Natural Smoke Products	99
I.4.1. Effective of Natural Products as a Smoke	
for controlling Varroa destructor during	
winter of 2002	100
I.5. Pollen Traps	103
I.5.1.Trapped Varroa destructor population by	
pollen traps during summer of 2002	104
I.6. 85% Formic acid	107
I.6.1. Effect of 85% formic acid for controlling	320.5
Varroa destructor	107

I.7.1. Evaluation of some volitial oils for	
controlling the Varroae mites	110
I.7.2. Effect of some volatile oils on reduction	
the Varroa mite	113
I.7.3. Effect of some volatile oils on reduction	
the Varroa mite population before season	
activity by cotton strips	116
I.7.4. Evaluation of some volatile oils for	
controlling the Varroa mites on	
honeybee colonies before activity two	
seasons 2004 and 2005	116
I.8. Effect of supplements to reduced the population	
of Varroa destructor during winter 2004 as a	
method for I.P.M	121
I.9.Comparative between production and	
infection by Varroa destructor for honeybee	
colonies in queen rearing station at two	
seasons 2004 and 2005	127
II. Control of Chalk brood	133
II.1. Effect of powder sugar as dusting on bees	
and combs for control of chalkbrood	
during winter (2002)	133
II.2. Effect of Varroazal by fed honeybee	
colonies for controlling chalkbrood during	
winter 2003	133
II.3. Effect of formic acid 85% on honeybee	
colonies of chalkbrood control during	
winter 2003	138

II.4. Effect of Natural temperature on chalkbrood	er water as
during a constant temperature on charkbrood	
during summer 2003	142
III. Control the wasps	145
III.1. Comparative between some baits for	145
trapping Vespa orientalis in screens	
traps monthly summer 2004	145
III.2.Comparative between some traps for	110
control Vesps orientalis on daily 2004	148
III.3. Effect of the Best time from the day	
queen capture vespa orientalis during of	
2005	153
III.4. Comparative between some materials in	100
trapping for controlling of wasps during	
September of 2005	150
5. SUMMARY	156
5. SUMMARY	160
6. REFERENCES	167
ARABIC SUMMARY	- 1