الغلاف.doc

CONTENTS.doc

INTRODUCTION12.doc

DEDICATION.doc

ABSTRACT.doc

الملخص العربى.doc

MORPHOMETRICAL AND BIOLOGICAL STUDIES OF LOCAL CARNIOLAN HONEYBEE COLONIES IN MANZALA REGION

By

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B. Sc. (Plant Protection), Fac. Agric., Mansoura Univ., ٢٠٠٦

THESIS

Submitted in Partial Fulfillment of the Requirements for the Degree of

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In

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(Economic Entomology)

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Faculty of Agriculture
Cairo University
Egypt

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دراسات مورفومترية و بيولوجية على طوائف نحل العسل الكرنيولى فى منطقة المنزلة

رسالة مقدمة من

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للحصول على درجة

الماجستير

فى

العلوم الزراعية
(حشرات اقتصادية)

قسم الحشرات الاقتصادية والمبيدات
كلية الزراعة
جامعة القاهرة
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CONTENTS

	Page
INTRODUCTION ……..……..	١
REVIEW OF LITERATURE ……...……	٣
١. Morphometrical studies……...……...	٣
٢. Biological studies…….…….	٢١
a. Activity of rearing worker brood……...	٢١
b. Activity of rearing drone brood…….	٢٧
c. Activity of storing honey……...	٣٧
d. Activity of storing pollen…….……..	٤١
e. Population density (No. of combs covered with bees)…..	٤٧
f. Production of queen cells and queen cups…….	٥٢
٣. Production of honeybee colonies…..……..	٥٥
a. Divisions production…….	٥٥
b. Honey production……..	٥٩
c. Virgin queens production……..	٦١
١. Age of grafted larvae……...…….	٦١
٢. Number of accepted queen cells……...	٦٣
٣. Weight of virgin queens……	٦٩
MATERIALS AND METHODS……...……...……..	٧٣
RESULTS AND DISCUSSION ……..…...……	٨٣
١. Morphometric characters of the local Carniolan colonies at Manzala region…….	٨٣
a. The proboscis length (PL) (mm./worker/col.)……...	٨٣
b. The forewing length (FWL) (mm./worker/col.)…… ...…	٨٥
c. The forewing width (FWW) (mm./worker/col.)...…… …	٨٨
d. Cubital index (CI) (mm./worker/col.)……..…… ……	٩٠
e. The hind wing length and width (mm./worker/col.)……..	٩٢
f. The hind basitarsus length (HBL) (mm./worker/col.)…...	٩٤
g. The hind basitarsus width (HBW) (mm./worker/col.)…..	٩٥
h. The first wax mirror length (١thWML)(mm./worker/col.).	٩٧

Page

i. The first wax mirror width (١thWMW)(mm. /worker/col.) ٩٩
j. The third sternum length (mm./worker/col.) ……..….. ١٠٠
k. The third sternum width (mm. /worker/col.)...… ….…… ١٠١

٢. Biological activities of Carniolan honeybee colonies at Manzala region……..…… ١٠٤

a. Mean amount of sealed worker brood (in٢./col.)……... ١٠٤
b. Mean number of combs covered with bees / colony……. ١١٨
c. Mean amount of honey storage (in٢./col.)……. ١٢٦
d. Mean amount of pollen storage (in٢./col.)……. ١٣٢
e. Mean amount of sealed drone brood (in٢./col.)……. ١٤٠
f. Mean numbers of queen cups / col. ……..…. ١٤٤
g. Mean numbers of queen cells / col. ……..…. ١٤٨

٣. Evaluation the productivity of the Carniolan honeybee colonies at Manzala region……..... ١٥٨

a. Estimation of honey production (kg./col.)…… ١٥٨
b. The activity of Carniolan colonies in drawing the wax foundations... …….....…….. ١٦٠
c. Production of divisions from the Carniolan bee colonies. ١٦١
d. Production of virgin queens…….…. ١٦٣
١. Acceptance percentage of sealed queen cells……... ١٦٣
٢. Production percentage of virgin queens…….…...… ١٦٤
٣. Weight of produced virgin queens…… ١٦٥

SUMMARY…….……..…….…… ١٧٣

REFERENCES ……..…... ١٨٥

ARABIC SUMMARY

LIST OF TABLES

No.	Title	Page
١.	Mean some morphometrical characters of local *Apis mellifera carnica* workers at Manzala region……	١٠٣
٢.	Mean amount of worker brood (in٢./col.) of honeybee colonies in Manzala region during different inspection dates of the year……..	١٠٨
٣.	Mean some biological activities of honeybee colonies at Manzala region during different months of the year…….	١١٤
٤.	Mean some biological activities of honeybee colonies at Manzala region during different seasons of the year…….	١١٦
٥.	Mean number of combs covered with bees (no./col.) of honeybee colonies in Manzala region during different inspection dates of the year……	١٢٣
٦.	Mean amount of stored honey (in٢./col.) by honeybee colonies in Manzala region during different inspection dates of the year……..	١٢٧
٧.	Mean amount of stored pollen (in٢./col.) by honeybee colonies in Manzala region during different inspection dates of the year……..	١٣٨
٨.	Mean amount of drone brood (in٢./col.) reared by honeybee colonies in Manzala region during different inspection dates of the year…….	١٤١
٩.	Mean no. of produced queen cups /col. by honeybee colonies in Manzala region during different inspection dates of the year…….	١٤٥
١٠.	Mean no. of produced queen cells /col. by honeybee colonies in Manzala region during different inspection dates of the year…….	١٤٩

No.	Title	Page
١١.	Multiple correlation "r٢" of honey storage, pollen storage (in٢./col.) and combs covered with bees /col. with the production of worker brood (in٢./col.), combs covered with bees / col., queen cells and queen cups /col. during different months at the year……..	١٥٦
١٢.	Mean weight of honey production (kg./col.) by the tested colonies during the clover season of the honey (٢٥/٠٥/٢٠٠٩)...	١٥٩
١٣.	The activity of tested Carniolan colonies in drawing the wax foundation……..	١٦١
١٤.	Mean acceptance percentage of grafted larvae during production of queens in honey bee colonies at Manzala region during the period from ١٣/٠٣ to ٠١/٠٣/٢٠١٠……..	١٦٩
١٥.	Production of newly virgin queen from honey bee colonies at Manzala region during the period from ١٣/٠٣ to ٠١/٠٣/٢٠١٠…	١٧٠
١٦.	Mean weight of virgin queen (mg./queen) produced by Carniolan honeybee in Manzala region during the period from ١٣/٠٢ to ٠١/٠٣/٢٠١٠……...	١٧١

LIST OF FIGURES

No.	Title	Page
١.	Proboscis length of honeybee worker (PL) (mm.)…….	٧٥
٢.	The forewing length and width (FWL & FWW) (mm.)……	٧٥
٣.	The cubital index of forewing (CI=A/B)……...	٧٦
٤.	The hind wing length and width (HWL & HWW) (mm.)…….	٧٦
٥.	The hind leg basitarsus length and width (HBL&HBW)(mm.).	٧٦
٦.	The first wax mirror length and width (١thWML & ١thWMW) (mm.) of honeybee worker ……..……..……	٧٧
٧.	The ٣rd sternum length and width (mm.) of honeybee worker..	٧٧
٨.	Frame divided to inches square …….	٧٨
٩.	The differences in proboscis length (mm./worker/col.) of the local Carniolan race between honeybee groups in Manzala region during ٢٠١٠ year.. ……...……..	٨٥
١٠.	The differences in forewing length (mm./worker/col.) of the local Carniolan race between bee workers of the tested colonies in Manzala region during ٢٠١٠ year. …….	٨٦
١١.	The differences in forewing width (mm./worker/col.) of the local Carniolan race between bee workers of the tested colonies in Manzala region during ٢٠١٠ year.…… ……	٩٠
١٢.	The differences in cubital index value of the local Carniolan race between bee workers of the tested colonies in Manzala region during ٢٠١٠ year.……..……	٩١
١٣.	The differences in hind wing length (mm./worker/col.) of the local Carniolan race between bee workers of the tested	٩٣

colonies in Manzala region during ٢٠١٠ year……
……..

No.	Title	Page
١٤.	The differences in hind basitarsus length (mm./worker/col.) of the local Carniolan race between bee workers of the tested colonies in Manzala region during ٢٠١٠ year…….....	٩٥
١٥.	The differences in hind basitarsus width (mm./worker/col.) of the local Carniolan race between bee workers of the tested colonies in Manzala region during ٢٠١٠ year……..	٩٦
١٦.	The differences in first wax mirror length (mm./worker/col.) of the local Carniolan race between bee workers of the tested colonies in Manzala region during ٢٠١٠ year……	٩٨
١٧.	The differences in first wax mirror width (mm./worker/col.) of the local Carniolan race between bee workers of the tested colonies in Manzala region during ٢٠١٠ year.… ……..	١٠٠
١٨.	The differences in third sternum length (mm./worker/col.) of the local Carniolan race between bee workers of the tested colonies in Manzala region during ٢٠١٠ year…… …….	١٠١
١٩.	The differences in third sternum width (mm./worker/col.) of the local Carniolan race between bee workers of the tested colonies in Manzala region during ٢٠١٠ year.…… …….	١٠٢
٢٠.	The mean amount of sealed worker, drone brood, honey and pollen storage (in^{٢}./col.) in honeybee colonies at Manzala region during different inspection dates of the year……..	١١٣
٢١.		١١٥
٢٢.		١١٧
٢٣.		١٢٤

The mean monthly amount of sealed worker, drone brood, honey and pollen storage (in^{2}./col.) in honeybee colonies at Manzala region during different months of the year……

The mean seasonal amount of sealed worker, drone brood, honey and pollen storage (in^{2}./col.) of honeybee colonies at Manzala region during different seasons of the year…….

The mean number of combs covered with bees /col. in honeybee colonies at Manzala region during different inspection dates of the year……

No.	Title	Page
٢٤.	The monthly mean no. of combs covered with bees (no./col.) in honeybee colonies at Manzala region during different months of the year……..……..……	١٢٥
٢٥.	Mean no. of combs covered with bees (no./col.) in honeybee colonies at Manzala region during different season of the year……..……..	١٢٦
٢٦.	The mean number of queen cells & queen cups (no./col.) produced by honeybee colonies at Manzala region during different inspection dates of the year…….	١٥٠
٢٧.	The monthly mean number of queen cells & queen cups (no./col.) produced by honeybee colonies at Manzala region during different month of the year…….	١٥٥
٢٨.	The seasonal mean no. of queen cells & queen cups (no./ col.) produced by honeybee colonies at Manzala region during different seasons of the year…….……	١٥٦
٢٩.	Mean weight of honey production (kg./col.) by the tested colonies during the clover season of honey (٢٥/٠٥/٢٠٠٩)…….	١٦٠
٣٠.	Mean no. of produced divisions from the Carniolan bee colonies……..	١٦٣

INTRODUCTION

Rearing pure Carniolan queens (*Apis mellifera carnica*) in Egypt was practiced in two isolated regions. The first was located in the north in Manzala region and the second was established at the new valley in the south. These two regions produce thousands of virgin and mated queens every year that are usually used for developing the beekeeping (Mazeed, ١٩٩٢).

Morphometrical methods are a powerful research tool. They allow researchers to summarize morphometrical data numerically and graphically for discrimination between the different populations of honeybees (Daly, ١٩٨٥). Kauhausen (١٩٩١) used the length and width and the cubital index of the forewing to differentiate between *A. m. carnica* and the other subspecies of *A. mellifera* in order to protect the home-bred subspecies against the influence of imported honeybees.

In Egypt, morphometrical studies on honeybees started during the second half of the ٢٠th century and the aim of those studies was mainly to establish the specific characters of the Egyptian subspecies *A. m. lamarckii* (Hassanien and El-Banby, ١٩٥٦; Mazeed, ١٩٦٤ and Abou-Zeid, ١٩٨٩). Mazeed (١٩٩٩) used the morphometrical characters to differentiate between the two populations of the Carniolan bees in Egypt (in Manzala and New Valley).

In the last ten years many beekeepers complained from the decrease in honeybee production in their apiaries. The decrease was related to many factors, as expected by the scientists. Inbreeding,