Name of Candidate: Nasr Mohammad Ahmed **Degree:** M. Sc.

Title of Thesis: Impact of Indigenous, Genetically Modified Host Plants and Oviposition Behaviour on Certain Biological Aspects of *Schistocerca gregaira* (Forskal).

Supervisors: Dr. Ramadan Abdel Kader Salama
Dr. Ezz El-Din Abd El-Samih Elshazly
Dr. Mohammad Ibrahim Mogahed

Department: Economic Entomology and Pesticides

Branch: Economic Entomology **Approval: / /2011**

ABSTRACT

Experimental studies were carried out under laboratory conditions (30±5^{o} C and 60±10% R.H.) to investigate the effect of some local host plants such as field crops (*T. aestivum*, *Z. maize* and *T. trifolium*), vegetable crops (*E. sativa*, *P. sativum*, *R. sativus* and *A. porrum*), medicinal and aromatic plants (*O. basilicum*, *R. communis*, *P. oleracea* and *C. rotundus*) as well as natural and transgenic (corn and tobacco) plants on some biological aspects of the desert locust, *S. gregaria* (Forsk.). Effect of soil types on oviposition behaviour was performed in comparative bioassays.

The results indicate that feeding on wheat or corn increased the rates of food consumption (19626. and 26671. mg) and it was prolonged survival of nymphal stage (37.9and 39.7days), and the pre-oviposition period (28.8 and 29 days, respectively). Significant prolongations of adult longevity (48.3 and 49.8 days, respectively) were recorded. In contrast, a high reduction occurred in the fecundity (173.4 and 157.4 eggs) and hatchability (86. and 85%), respectively.

Concerning the vegetable crops, application of leek and radish increased the consumed food rates (14806 and 18076 mg), while it was decreased fecundity (166. and 175 eggs), and prolonged life span period (65 and 73 days), respectively, great decrease in hatchability (72 and 74 %) and mortality % of nymphal and adult stages (24 and 36%), respectively were recorded. Feeding on parsley and rocket curtailed survival period of nymphal stage (32 and 33 days), these two vegetables shortened the egg laying period (18 and 18 days) and adults longevity (39 and 39 days), respectively compared to clover as a control (41.5 days).

Feeding on castor beans, sweat basil, verdolaga and coco-grass increased the consumed food rates (18841, 19015, 28940 and 15684 mg) causing weight loss, with high reduction in fecundity (226, 151, 155 and 171 eggs) of females, respectively. In all experiments, the medicinal plants increased the food consumption rates, nymphal body weight causing high significant reduction in fecundity. While, they were prolonged adult longevity 97.3, 67.9, 55.0 and 43.5 days, respectively.

In general, all of the treated nymphs with either natural or transgenic tobacco plants died before moulting to the next instar. Both natural and transgenic corn plants increased duration period, food consumption and mortality percentage but reduced the body weight of treated locust.

Concerning soil preference, calcareous soil had the least mean number of egg / pod (51 eggs), longest incubation period (14 days), shortest holes depth (4 cm) and least hatchability (79 %). The medium number of eggs / pod (53), incubation period (14 days), holes depth (4.6 cm) and hatchability (85 %) in the clay soil. The longest holes depth (5 cm) and hatchability (90 %) in the sandy soil.

Key words: Indigenous - *Schistocerca gregaria* – oviposition – investigate – transgenic - fecundity.

Name of Candidate: Essam Osman Khairy Tabozada **Degree:** Ph.D.
Title of Thesis: Effect of Two Compounds(Tracer and Nomolt) on the Activity and Reproduction of Certain Cotton Pests Natural Enemies
Supervisors: Dr. Sayed Ashraf El Arnaouty
Dr. Essam El Den Abd El Raouf Eweis
Dr. Said Ahmed Emara
Department: Economic Entomology and Pesticides
Branch: Economic Entomology
Approval: 29 /12 / 2011

ABSTRACT

Laboratory bioassay were carried out to evaluate the toxicity of the bioinsecticide, Tracer 24% SC and the chitin synthesis inhibitor, Nomolt 15% SC. Direct and indirect toxicity affects on the green lacewing, *Chrysoperla carnea* larvae and the ladybird, *Coccinella undecimpunctata* larvae, the egg parasitoid *Trichogramma evanescens* and the larval parasitoid *Bracon brevicornis.* The two predators were investigated after feeding on treated egg masses, 2nd and 3rd larvae instars of the cotton leafworm, *Spodoptera littoralis* (Boisd.). Results indicated a dose response relationship in which the mortality increased with high concentrations especially the early larval stages. The LC_{50} effects on treated larvae were with significantly different deformations. Higher toxic effects on treated 2nd larval instars of the cotton leafworm with Tracer was observed using contact method rather than dipped method. In general, treatments either by Tracer or Nomolt prolonged larval duration, reduced pupal period and weight that caused a reduction in adult longevity. Pupal duration and adult longevity were decreased and average numbers of hatched deposited eggs/female were reduced significantly. High reduction in pupation and adult's emergence resulted from treated larvae. No effects were observed on 2nd larval instars of the two predators. Other effects on the egg parasitoid *Trichogramma evanescens* adults, immature stages and adults emergence after treated the *Ephestia kuehniella* eggs by Tracer and Nomolt with spray method for 1st , 4th and 7th days of parasitism. While for the larval parasitoid *Bracon brevicornis* by treated after 1st, 3rd and 5th days of parasitism for indirect toxicity effects on the adults, immature stages and adults emergence after treated the 2nd larval instars of *Spodoptera littoralis* by Tracer and Nomolt with contact method that were under laboratory conditions.

Key words: *Chrysoperla carnea, Coccinella undecimpunctata, Trichogramma evanescens, Bracon brevicornis,* pesticides, tolerance, toxicity, cotton pests.

Name of Candidate: Alexandramagdalina Ahmad El-Hellaly **Degree:** Ph.D.
Title of Thesis: Evaluations of certain natural materials as additives for preserving the activity of baculoviruses under exposure to the ultraviolet (UV) in the sun light.
Supervisors: Prof. Dr. Salah Eldin Hassan Elnagar,
Prof. Dr. Mohamed Abd El-Kader El-Sheikh
Dr. Magda Mohammed Khattab
Department: Economic Entomology & Pesticides
Branch: Economic Entomology **Approval: / /2011**

ABSTRACT

This work was carried out at the "Insect Virology Unit", Department of Economic Entomology and Pesticides, Faculty of Agriculture, Cairo University, Giza, Egypt, throughout the period extended from 2006 to 2010. The aim of the study was the laboratory and field evaluations of plant-derived material containing natural antioxidants as UV- protective additives to *Spli*NPV against natural sun light. The study focuses on testing inexpensive, local and natural products to be used as standard additives to *Spli*NPV virus product, in order to sustain effectiveness of virus bio-control agents, the tested additive materials were used at the laboratory evaluation as a plant extracts at 1 % concentration. Twenty plant-derived products were compared in three successive Phases, Phase "One" where materials were tested in groups that could be arranged in descending order as follows: Group A: cacao, carob pods, green tea, sage and vanilla pods. Group B: green coffee, lemon grass, wheat, doum palm, and coriander leaves. Group C: red cabbage, green cabbage, parsley, rucola and coriander seeds. And Group D: grape vine, grape seed, pomegranate, garlic, and onion. Phase "Two" where the best two additives of each group (*i.e.*, 8 additives, beside green tea as a comparative additive known from literature as a superior protective material), were pooled out and further investigated, with a maximum exposure test period to UV irradiation. The results determined the nine tested additives arranged in a descending following order of efficiency: cacao, red cabbage, green cabbage, coffee, grape vine, carob tea, green tea, lemon grass, and grape seeds. These additives retained 58.30, 30.98, 50.34, 49.99, 28.46, 43.22, 45.35, 28.66, and 50.36 OAR% (10hr), respectively

and 821.44, 711.16, 686.05, 594.42, 590.83, 530.02, 505.45, 449.38 and 439.32 LIT_{50} values (min), respectively (14.40 OAR% (10hr) and 222.14 LIT_{50} value (min) for the virus alone treatment). In Phase "Three", the best four additives resulted from Phase "Two" were further investigated under natural field sunny conditions, and evaluated at 5and 10% concentrations. At 5% concentration: The tested additives were in the following order of efficiency: cacao, red cabbage, green cabbage and green coffee; giving 83.34, 49.78, 53.57 and 44.96 LIT_{50} values (hr), respectively (7.69 LIT_{50} value (hr) for the virus alone treatment). At 10% concentration**:** cacao was again the best protective additive followed by green coffee, red cabbage and green cabbage; giving 113.11, 58.40, 59.22 and 51.91 LIT_{50} values (hr), respectively. (7.69 LIT_{50} value (hr) for the virus alone treatment).

In conclusion, cacao gave the maximum protection rate for the NPV at 1%, 5% and 10% concentrations as evident in both laboratory and field evaluations. The other three top additives (green coffee, red cabbage and green cabbage) were promising in the laboratory but not so long in the field as cacao.

Name of Candidate: Sahar Sayed Ali **Degree:** Ph.D.

Title of Thesis: Effects of four entomopathogenic fungi isolates on larvae of the sugar beet worm, *Spodoptera exigua* (Hübner) (Lepidoptera: Noctuidae)

Supervisors: Dr. Monir Mohamed El-Husseini
Dr. Esam Abdel Megeed Agamy
Dr. Hassan Kassem Bekhiet

Department: Economic Entomology and Pesticides

Branch: Economic Entomology **Approval:** / /

ABSTRACT

This study was conducted to clear the difference in virulence among four fungi isolates . (Two isolates of *Metarhizium anisopliae,* M1 & M2, and another two isolates of *Beauveria bassiana*, B1 & B2 were isolated from soil and dead insects.

The most important results could be summarized as follows:

Variation in quantity of spores produced was studied on different solid media; grains media , rice, wheat, maize and soybean produced conidia and Czapek Dox Agar medium with small glass balls, (CzDA+b.) and CZA medium as the control for comparison.

Temperature of 25°C was found optimum. It gave maximum production of spores for all isolates. M1 produced the highest amount of conidia (11.2×10^9 spore / plate) on (CzDA+b.) ,M2 gave 10.09×10^9 spore / plate on the same medium, B1 produced 1.92×10^9 spore / plate and B2 gave 2.02×10^9 spore / plate.

The isolate M1(*M. anisopliae*) was the most effective against *S. exigua* 3rd instar larvae. M1 at high concentration (1.0×10^9) achieved 87.0 % mortality within 5.6 ± 1.9 days. The highest effective toxin was produced by *M. anisopliae* (M1) inducing mortality percentage of 92.15% .

The maximum activity of enzymes was recorded in M1; chitinolytic activity(0.597µg NAGA/min./ml) . In case of protease, M1 recorded the greatest activity (1017.0 O.D. unit $\times 10^3$ / hr./ml). The same trend in the activity pattern was obtained for lipase (42.980 U/ml).

Complete extraction of destruxins from the crude toxins of *M. anisopliae* isolates showed that M1 contained the molecular weights of destruxins A,B and D, M2 contained the molecular weights of dex. D ,B and cytochalasin A.

Key words: *Metarhizium anisopliae*, *Beauveria bassiana*, Isolation, Selective media, Enzymes activity, Destruxins, *Spodoptera exigua*

/استمارة معلومات الرسائل التى تمت مناقشتها

الكلية: الزراعة جامعة القاهرة **القسم: الحشرات الاقتصادية والمبيدات**

١ - **الدرجة العلمية :** ماجستير [√] دكتوراه [ ]

٢ - بيانات الرسالة :

عنوان الرسالة باللغة العربية : دراسات المقارنة البيولوجية بين المفترسات *Chrysoperla carnea* Stephens (Neuroptera: Chrysopidae);*Orius albidipennis* Reuter (Hemiptera: Anthocoridae) and*Adalia bipunctata* Linnaeus (Coleoptera: Coccinellidae)

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عنوان الرسالة باللغة الأجنبية : **COMPARATIVE BIOLOGICAL STUDIES ON *Chrysoperla carnea* Stephens (Neuroptera: Chrysopidae); *Orius albidipennis* Reuter (Hemiptera: Anthocoridae) AND *Adalia bipunctata* Linnaeus (Coleoptera: Coccinellidae)**

التخصص الدقيق : مكافحة بيولوجية

تاريخ المناقشة : ٢٤ /٣/ ٢٠١١

٣ - **بيانات الطالب :**

الاسم : سلمى محجوب محمد عبد الله الجنسية : سودانية النوع : انثى

العنوان :أول فيصل تقسيم عمرو بن العاص تليفون: ٠١١٢٢١٩٠٢٠

جهة العمل : كلية الدراسات الزراعية – جامعة السودان للعلوم والتكنلوجيا

رقم الفاكس : البريد الإلكتروني :

٤ - **المشرفون على الرسالة :**

أ. د./ محمود مصطفى البلك **أ.د./ سيد أشرف الأرناؤوطى**

أستاذ الحشرات الاقتصادية – كلية الزراعة – جامعة القاهرة. أستاذ الحشرات الاقتصادية – كلية الزراعة – جامعة القاهرة.

٥ - مستخلص الرسالة (Abstract)

٥ - ١ باللغة العربية : بشرط ألا يزيد عن ٧ أسطر

أجريت الدراسات المعملية لبحث توابع التغذية والقدرة الافتراسية لثلاث أنواع من المفترسات *Chrysoperla carnea* و *Orius albidipennis* و *Adalia bipunctata*، المربأة على eggs *kuehniella* *Anagasta* nymphs *Aphis craccivora* تم حساب معدل التطور والنمو ونسبة الموت والقدرة الافتراسية خلال فترة الأطوار غير البالغة والأطوار البالغة وقد أظهرت التغذية على بيض *An.kuehniella* حدوث تطور أسرع و نسبة موت أقل مقارنة بالتغذية على *A. craccivora*. إما الإناث لأنواع المفترسات قيد البحث فقد وجد زيادة القدرات الإنتاجية عند تغذيتها على بيض الفرائس البديلة eggs *An. kuehniella*. وفي تجربة نصف حقلية على زراعات الخيار أظهرت نتائجها أن المفترسات ا___لثلاث أمكنها أن تحقق درجة من السيطرة على المن. وكان *Ch. carnea* هو الأكثر تكيف مع بيئة الصوبة

الكلمات الداله (مفترسات - فرائس – بيولوجى - القدرة الافتراسية - اسد المن - بق الإزهار – ابو العيـــد ذو النقطتين .)

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٥ ـ ٢ باللغة الأجنبية : بشرط ألا يزيد عن ٧ أسط

Anagasta kuehniella eggs and *Aphis craccivora* nymphs were used as preys for the predators *Chrysoperla carnea, Adalia bipunctata and Orius albidipennis.* Feeding capacity and feeding competition of the three predators were estimated Obtained results showed that the type of prey can strongly influence the rate of development, mortality and the predation capacity of the three predators. *An. kuheniella* eggs induced a faster development and less mortality compared to *A. craccivora*. A semi-field experiment was conducted on cucumber plantations.

(Key Words: predators, preys, biology, predation capacity, *Chrysoperla carnea*, *Adalia bipunctata, Orius albidipennis*)

٦ – **أهم النتائج التطبيقية التي تم التوصل إليها :**

(لا تزيد عن سطرين لكل منها)

٦ – ١ أظهرت النتائج أن نوع الفريسة يمكن أن تؤثر بشدة على معدل النمو ، ونسبة الموت للمفترسات قيد البحث. حيث سجلت فروق عالية عند التغذية على النوعين من الفريسة

٦ – ٢ أظهرت النتائج أن نوع الفريسة يمكن أن يؤثر على الكفاءة الافتراسية للمفترس وان قدرات الافتراس في مرحلة الحوريات من *O. albidipennis* ومرحلة اليرقات من *A. bipunctata* و *Ch. carnea*، تتأثر بنوعية الفريسة

٦ – ٣ ويمكن الإشارة إلى أن *Ch. carnea* كان هو أفضل الأنواع التي يمكن التكيف والبقاء على قيد الحياة في ظرف وجود المنافسين الآخرين اللذين أستهلكا مصدر الغذاء نفسه تليها *A. bipunctata*

٦ –٤ أظهرت النتائج أن المفترسات الثلاث أمكنها أن تحقق درجة من السيطرة على المن. وان المفترس *Ch.carmea* كان الأكثر تكيف مع بيئة الصوبة وقد حقق سيطرة اكبر على المن تلاه *A. bipunctata* ثم *O. albidipennis*

٧ – ما هى الجهات التى يمكن أن تستفيد من هذا البحث :

(اذكر هذه الجهات مع شرح أهمية البحث لهذه الجهة بما لا يزيد عن أربعة سطور لكل جهة

٧ –٢ المزارع والشركات المهتمة بالزراعة الحيوية بمصر والسودان.

٧ – ٣ محطات وزارة الزراعة بجميع محافظات مصر والسودان.

٧–٤ المرشدين الزراعيين.

٨ – هل توجد علاقة قائمة بإحدى هذا الجهات : **نعم** [ ] **لا** [√]

فى حالة نعم اذكر هذه الجهات :

٨ – ١

٨ – ٢

٨ – ٣

ما هى طبيعة العلاقة :

مشروع بحثى [ ]

تعاون أكاديمى [ ]

مشروع ممول من جهة ثالثة [ ] (اذكر :)

أخرى [ ] (تذكر)

٩ – **هل توافق على التعاون مع جهات مستفيدة من خلال الجامعة :**

نعم [√] لا [ ] (لماذا)

(أ) لتطبيق البحث : [ ]

(ب) لاستكمال البحث : [√]

(ج) أخرى [ ] (تذكر)

١٠ – **هل تم نشر مستخرجة من الرسالة في مجلات أو مؤتمرات علمية**

(تذكر مع جهة النشر و المكان و التاريخ)

١٠–١ تم نشر بحث بعنوان:

Predation Capacity of *Chrysoperla carnea* (Stephens) (Neuroptera; Chrysopidae), *Orius albidipennis* (Reuter) (Hemiptera: Anthocoridae) and *Adalia bipunctata* (Linnaeus) (Coleoptera; Coccinellidae) on Two Prey Species

جهة النشر: مجلة الجمعية المصرية للمكافحة البيولوجية للأفات: عدد يناير ٢٠١١

١١ – **هل سبق التقدم لتسجيل براءات اختراع** (تذكر مع الجهة و المكان و التاريخ)

١٢ – **هل توافق على إعطاء البيانات المذكورة في هذه الاستمارة لجهات أخرى)**

نعم [√] لا [ ]

توقيع الطالب : توقيع المشرفين :

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وكيل الكلية (المعهد) للدراسات العليا و البحوث : التاريخ

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/استمارة معلومات الرسائل التى تمت مناقشتها

الكلية / المعهد : الزراعة جامعة القاهرة **القسم:** حشرات الإقتصادية والمبيدات

١ - **الدرجة العلمية :** ماجستير [✓] دكتوراه [ ]

٢ - بيانات الرسالة :

عنوان الرسالة باللغة العربية : أثر منظمات النمو الحشرية مجتمعة مع معاملات فيروس البوليهيدروسيز النووي ضد حشرة *Spodoptera littoralis*

عنوان الرسالة باللغة الأجنبية : EFFECT OF INSECT GROWTH REGULATORS COMBINED WITH NUCLEAR POLYHEDROSIS VIRUS TREATMENTS AGAINST *Spodoptera littoralis*

التخصص الدقيق : حشرات اقتصادية

تاريخ المناقشة : ٢٠١١/١١/٢٨

٣ - بيانات الطالب :

الاسم : آمال ثابت ثابت حسين الجنسية : مصرية النوع : أنثي

العنوان : القلج- مركز الخانكة – القليوبية تليفون : ٠١٠٧٧٥٦٧٠٣

جهة العمل : مركز البحوث الزراعية- معهد بحوث وقاية النباتات رقم الفاكس :

البريد الإلكترونى : amal_hosseine@yahoo.com

٤ - المشرفون على الرسالة :

الاسم	القسم	الكلية	الجامعه
ا.د/ صلاح الدين النجار	حشرات اقتصادية	الزراعة	القاهرة
ا.د/ محمد عبد القادرالشيخ	حشرات اقتصادية	الزراعة	القاهرة

د./عزيزة السيدعبد العال بحوث دودة ورق القطن معهد وقاية النباتات مركزالبحوث الزراعية

٥ - مستخلص الرسالة (Abstract)

٥ - ١ باللغة العربية : بشرط ألا يزيد عن ٧ أسطر

تم إضافة خمسة مركبات من منظمات النمو الحشرية لزيادة حساسية دودة ورق القطن *S. littoralis* للعمر اليرقي الثانى للإصابه بفيروس النيكلوبوليهيدروسز المعزول منها. أحدث الخليط خفض لقيم LC_{50} و LT_{50} للفيروس ولفترة العمر اليرقي حدث خفض في نسبة التعذير وخروج الحشرات الكاملة عند المعامله بـ Flufenxuron ، Triflumuron مقارنة باليرقات غير المعاملة، وجود تشوه في العذارى و الفراشات في معاملات الخليط .أحدث الخليط خلل في نشاط الإنزيمات، أدي إضافة Flufenxuron إلي ظهور فجوات وانفصال للخلايا العمادية وتهتك للـ PMعند تشريح المعي الأوسط

الكلمات الداله: منظمات النمو الحشرية، النيكلوبوليهيدروسز فيروس، دودة ورق القطن، الصفات البيولوجية، النشاط الإنزيمى.

٥ – ٢ باللغة الأجنبية : بشرط ألا يزيد عن ٧ أسطر

Five IGR's were tested to increase the susceptibility of *S. littoralis* to its homologous nucleopolyhedrovirus **(***Spli*MNPV). Mixture reduced the LC_{50} and LT_{50} and appears malformation. Flufenoxuron or Triflumuron values of *Spli*MNPV slightly prolongated larval duration and reduced the pupation and adult emergence compared to the control. Addition of Flufenxuron caused disturbance in activity of enzematic system, also, destroyed the PM, vaculation and exfoliation of the columnar cells.

Key words:-Insect growth regulators (IGR's), Nucleopolyhedrovirus (NPV), *Spodoptera littoralis,* biological aspects, enzymatic activity

٦ - **<u>أهم النتائج التطبيقية التى تم التوصل إليها</u> :**

(لا تزيد عن سطرين لكل منها)

٦ - ١ تأكيد حدوث تأثير منشط لدرجة الإصابة بالفيروس عند خلطة بمنظمات النمو الحشرية حيث انخفض مستوي LC_{50} و LT_{50}.

٦ - ٢ ظهر بوضوح التأثير الممتد للمعاملة المشتركة علي اليرقات تحت المعاملة وذلك في أغلب النواحي البيولوجية.

٦ - ٣ ادي اضافة Flufenoxuron إلي تهتك في الغشاء حول البلعة الغذائية (PM) مما سهل ذلك من اختراق الفيروس للخلايا الطلا ئية واحداث وضرر لحق بكل اجهزة الحشرة.

٦ - ٤ ادي اضافة Flufenoxuron إلي حدوث خلل في نشاط انزيمات محللات الجليكوسيدات بالإضافة إلي حدوث خفض في انزيم البروتيز.

٧ – ما هى الجهات التى يمكن أن تستفيد من هذا البحث :

(اذكر هذه الجهات مع شرح أهمية البحث لهذه الجهة بما لا يزيد عن أربعة سطور لكل جهة

٧ –1 جهات البحث العلمي المهتمه بهذا المجال.

نظرا لان استخدام الفيروس في مكافحة الأفات يعتبر من الطرق الأمنة فإن المحافظة علي فاعليته ونشاط هذا biocontrolagiant (عامل المكافحة الحيوي) يعتبر ذات أهمية قصوي لتعظيم الإستفادة منه وحيث ان إضافة IGR's قد أكدت حدوث تأثير منشط للإصابة بفيرس عند خلطه به.بمعني ان تستفيد جهات البحثيه في تجريب IGR مع مسببات مرضية أخري.

٧ – 2 القطاع الخاص و الشركات المهتمة بإنتاج المبيدات الحيويه.

لما أكدة البحث من حدوث تأثير منشط للإصابه بفيرس عند خلطه بمنظمات النمو الحشرية فمن ثم يمكن إضافة هذه المركبات إلي المنتج الفيرس وذلك عند إنتاج المبيدات الحيوية (الميكروبيه).

٧–3

٨ – هل توجد علاقة قائمة بإحدى هذا الجهات : **نعم** ☐ **لا** ☐

فى حالة نعم اذكر هذه الجهات :

٨ – ١

٨ – ٢

٨ – ٣

ما هى طبيعة العلاقة :

مشروع بحثى ☐

تعاون أكاديمى ☐

مشروع ممول من جهة ثالثة ☐ (اذكر ما هى :)

أخرى ☐ (تذكر)

٩ – <u>هل توافق على التعاون مع جهات مستفيدة من خلال الجامعة :</u>

لا ☐ **(لماذا** **)**

نعم ☑

(أ) لتطبيق البحث : ☑

(ب) لاستكمال البحث : ☐

(ج) أخرى ☐ **(تذكر** **)**

١٠ – <u>هل تم نشر بحوث مستخرجة من الرسالة فى مجلات أو مؤتمرات علمية</u>

(تذكر مع جهة النشر و المكان و التاريخ)

١٠ – ١ المجلة العلمية لكلية الزراعة جامعة القاهرة

لا

١٠ – ٢

١٠ – ٣

١١ – <u>هل سبق التقدم لتسجيل براءات اختراع</u> (تذكر مع الجهة و المكان و التاريخ)

لا

١٢ – <u>هل توافق على إعطاء البيانات المذكورة فى هذه الاستمارة لجهات أخرى</u>

نعم ☐ لا ☐

توقيع الطالب : توقيع المشرفين :

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وكيل الكلية (المعهد) للدراسات العليا و البحوث : التاريخ

Name of Candidate: Assmaa El-Metwally Abd allaa **Degree:** M.Sc.
Title of Thesis: Biological Studies on the Predator *Cryptolaemus montrouzieri* Mulsant (Coleoptera, Coccinellidae)
Supervisors: Dr. Amal Ibrahim Afifi
Dr. Sayed Ashraf Gamal El-Deen El Arnaouty
Dr. Angel Roshdy Atiaa
Department: Economic Entomology and Pesticides
Branch: Economic Entomology **Approval: 7 / 4 / 2011**

ABSTRACT

This study was conducted to evaluate the efficiency of the predator, *Cryptolaemus montrouzieri* Mulsant in the open field and laboratory. All biological studies have been conducted in **"**Mass Rearing Unit**"**Faculty of Agriculture, Cairo University under optimum temperature of 27± 2 ˚ C and a relative humidity of 60-70%. Data obtained show that the different preys used did not significantly affect the incubation period. The shortest total larval period (16.7 days) was recorded for *Ephestia kuehniella* eggs, while the longest (20. 27 days) was for *Planococcus citri* eggs. The lowest egg productivity (89.5 eggs /female) was associated with the shortest longevity reported for females fed on *Schizaphis graminus* nymphs. However, with *P. citri* eggs, the female deposited the greatest number of eggs (1049.70/ female), which was significantly greater than that reported for *E. kuehniella* eggs and *S. graminus* nymphs. Consumption study showed that the greatest numbers of prey were consumed by the third and fourth instars. The adult female is considered the most efficient predatory stage as it consumed a great number of mealybug eggs as much as that consumed by the larva. This is may be due to the larger size and longer longevity of the adult. The order of predatory preference of adult predator on different preys was *P. citri* eggs > *E. kuehniella* eggs > *P. citri* nymphs > *S. graminus* nymphs. Obtained results showed that predator adult could be stored for one month at a temperature not below 15°C and 50 ± 10 % R.H. without effect on female fertility. In view of chemical analysis, the highest constituent of carbohydrates, lipids, calcium and potassium in egg of *P. citri* compared to other tested preys may interpret the preferability of this prey.The coccinellid predator, *C. montrouzieri* was used to control the citrus mealybug, *P. citri* on the croton ornamental shrubs at Giza governorate, Egypt. Adults of the predator were released once in the open field, with 50 *Cryptolaemus* adults / Croton shrub. Obtained results indicated that percentage of reduction among the egg masses, nymphs and adults of *P. citri* reached to 41.45, 42.29 and 57.45 %, respectively after one month of releasing the predator. After two months of releasing, the corresponding rates were 80.63, 86.45 and 91.54 %. Finally، after three months of releasing the predator reduction rates reached to 100% for all stages of the pest. On the basis of the obtained data, it is quite safe to state that mealybug eggs is the most suitable prey for the predator, but in case of the scarcity of mealybug eggs, predator can be successfully reared on the alternative host (*Ephestia* eggs) .

Key Words: biological studies, *Cryptolaemus montrouzieri*, citrus, mealybug, predator, biology, *Ephestia kuehniella*, *Planococcus citri*, Croton shrub

Name of Candidate: Saeed Ali Saeed Alawaash **Degree:** M. Sc.

Title of Thesis: Evaluation of the Entomopathogenic Fungus *Beauveria bassiana* and its Prospects In Controlling the Red Palm Weevil *Rhynchophorus ferrugineus* Olivier

Supervisors: Dr. Gamal Hassan Sewify
Dr. Mohamed Helmy Belal
Dr. Refat El-Moursy El-Sufty

Department: Economic Entomology and Pesticides

Branch: Entomology **Approval: 8/8/2010**

ABSTRACT

The entomopathogenic fungus, *Beauveria bassiana* (Bals.) Vuill. was evaluated as a biological control agent against the red palm weevil *Rhynchophorus ferrugineus* (Oliv.) in United Arab Emirates and Egypt. In UAE, the fungus was studied using a local strain. For adult weevils, the calculated LC_{50} was $6.3x10^6$ conidia /ml. Duration of the parasitic phase of the fungus was 9.6 days. Most of insects died between the 8th and 13th days. In the first 6 days after contamination, no symptoms were observed. In the 7th day, diseased adults appeared sluggish in their movement and the insects were unable to get up of their back. Larvae differed in their susceptibility to infection due to their age. For adults, duration of the saprophytic phase was 14.1 days and the fungus successfully developed on 81.5% of the dead insects and mycosed cadaver produced $2.12X10^9$ conidia. For young larval instars, duration of the saprophytic phase was 6.6 days and the fungus successfully developed on 85.7% of dead larvae. Mycosed cadaver produced $4.3X10^7$ conidia. The optimum temperature for conidia germination ranged 25-30 ^oC while, the optimum temperature for sporulation was 25 or 30 ^oC. Application of the fungus in date palm plantations by two methods caused mortalities ranged 61.5-76.1% and 52.6-63.8% in adult population in the 3rd month after application for spraying and dusting application respectively, in two successive seasons.. Reduction of infestation resulted from spraying the fungus was 29.5% , two months after treatment increased to 39.9% after six months. In the dusted block, reduction of infestation resulted from dusting was 23.9% in the two months following application, increased to reach 35.7% after six month.

In Egypt, an endigenous isolate of *B. bassiana* isolated from red palm weevil cadaver was evaluated as a biological control agent againsr red palm weevel. Field application was conducted with the fungus against the red palm weevil at Elkassasin, Ismailia Governorate through 2007 – 2008. Three methods were carried out:

1. injection of *B. bassiana* in naturally infested palm trees. The success of the treatment was up 90 %,
2. periodical dusting application of fungal spores on palm trees in March and September. A reduction of palm trees infestation following field application was noticed and
3. release of contaminated males of red palm weevil with fungal spores.

These methods proved considerable reduction in the palm weevil population. The results suggest that fungus *B. bassiana* is a promising agent for use as bio-insecticide to control the red palm weevil

Key words: Red palm weevil, *Rhynchophorus ferrugineus*, entomopatho-genic fungus *Beauveria bassiana*, Biological control, field applications.

Name of Candidate: Manar Mohammed Ahmed **Degree:** M. Sc.

Title of Thesis: Ecological and Biological Studies of Parasitoids Associated with Olive Bark Beetle, *Phloeotribus scarabaeoides* Bern. (Coleoptera: Scolytidae)

Supervisors: Dr. ABDEL- AZIZ MAHMOUD AHMED
Dr. AMAL IBRAHIM AFIFY
Dr. HAZEM ABD- ELRAOUF ABD- ELKADER

Department: Economic Entomology and Pesticides
Branch: Economic Entomology **Approval:** 12 / ٧ /2011

ABSTRACT

This study was conducted to survey and ecological studies of olive bark beetle, *Phloeotribus scarabaeoides* Bern. and its associated parasitoids in Fayoum Governorate during two successive years 2008 - 2009. and to discrip the different stages and biological studies of the parasitoid, *Cheiropachus quadrum* (Fab.) (Hymenoptera: Pteromalidae) which may provide some basic knowledge of using these natural enemies an effective control.

Six hymenopterans species were recorded related *with P. scarabaeoides*, in Fayoum Governorate; *Cheiropachus quadrum* (Fab.), *Rhaphitelus maculates* (Walk.), *Cerocephala cornigera* Westw. (Fam.: Pteromalidae). *Eurytom morio* Bohme. (Fam.:Eurytomidae), *Cephalonomia* sp. (Fam.: Bethylidae) and the parasitoid *Dendrosoter protuberans* Ness. (Fam.: Braconidae), which recorded for the first time in Egypt on this host.

Population fluctuation of *P. scarabaeoides* beetles show that four generation were observed during 2008 and 2009, while the parasitoids population fluctuation showed one generation during 2008 and three generation were observed during 2009. Monthly abundance of the different recorded parasitoid species revealed that the parasitoid *C. quadrum* was the dominant specie; the relative annual percentage of this parasitoid was 75.8 and 39.8 during 2008 and 2009, respectively.

The highest percentages of parasitism (10.43 and 17.9) were recorded through winter during 2008 and 2009, respectively.

The results indicated that parasitoids had a considerable effect of the population of *P. scarabaeoides* beetles and so it is advisable not to interfere with pesticides and choose the most suitable timing for control this pest while avoiding damage parasitoids.

The biological studies on the parasitoid *C. quadrum* indicated that the pest degree for rearing the parasitoid is 25^0C where the percentage of pupation and emergence were100% and the percentage of female increased to 84.9 % when the parasitoid reared at this temperature. The laboratory rearing of the parasitoid showed that the parasitoid prefer the pupal stage of the host and also that the parasitoid has two generation for each generation of the host.

Key words: *Phloeotribus scarabaeoides* Bern., Population fluctuation, *Cheiropachus quadrum* (Fab.) Description of different stages , Biological studies.

Name of Candidate: Jamal Mahmoud Hassan Mahmoud **Degree:** M.Sc.

Title of Thesis: **Feeging Behaviour And Microbial Profile From Gut of Red Palm Weevil, *Rhynchophorus ferrugineus* OLIVIER. (CURCULIONIDAE : COLEOPTERA)**

Supervisors: Dr. AbdelAziz Mahmoud Ahmed Ibrahim
Dr. Eman Badawey Moursy
Department: Entomology and Pesticides
Branch: Entomology **Approval:** 9/7/2011

ABSTRACT

The anatomical analysis of the alimentary canal of the fourth instar larvae of the Red Palm Weevil, *R. ferrugineus* , has been examined by light microscopy. It is approximately one and one-half times the larval body length and situated in the center of larval body. It consists of the foregut, the midgut and the hindgut. The fat-body forms a sheath almost completely surrounding the tract. The salivary gland of the larvae consists of a single anterior duct, beginning at the labium, followed by two lateral ducts, leading into two flattened reservoirs. The midgut is bounded anteriorly by the oesophageal valve and the gastric caeca, and posteriorly by the pyloric valve and Malpighian tubules. The hindgut is formed by the pylorus, ileum, and rectum. It is surrounded by numerous tracheoles .The Malpighian tubules cross the rectal wall forming the cryptonephric excretory system. Histological Studies with Transmission Electronic Microscope (TEM) The entire epithelium of the foregut of *R. ferrugineus* fourth larval instar at its different regions(pharynx, oesophagus, and provintriculus), appears to have a uniform structure. The single layer of midgut epithelium is rests on a conspicuous basement membrane .It consists of three types of cells; the cylindrical cells, the goblet cells and the regenerative cells. The posterior pylorus has a smaller lumen; irregular shaped cubical epithelial cells. The development of peritrophic membrane is weaken. The hindgut epithelium layer is continuous and varies in thickness .There are many of goblet cells, rectal glands and blood vessels in the rectum than in the ileum. The ultrastructural analysis of the salivary gland regions,showed the presence of vesicles and dilatation of the intercellular space at both of the reservoir and secretory regions . The secretory region has a simple cubical, flattened epithelium, with rounded or oval nuclei. Several vacuoles in the cytoplasm are detected into the flattened cells and the microvilli appeared well structured. The Malpighian Tubules consist of a cellular layer varying in size and shape .The distal ends of tubules become associated with the rectal wall. The biology and feeding behavior of the weevil have been investigated on sugarcane at 26 C^{o}. and 70 – 75 % R.H. the preoviposition and oviposition period recorded 3.3 and 19.2 days, respectively. The total mean number of egg 154 eggs and the percentage of hatching recorded 79.8%. The longevity of female was longer than male and the duration of generation was 110.6 days. The average larval and pupal duration were 83.2 and 19.8 days, respectively

In this study we focused on the distribution and the percentage of aerobic and facultative anaerobic bacteria in red palm weevil larvae. Low number of forty microbial isolates was isolated; identified and classified from the gut of larvae grew on sugarcane sticks, palm hearts and leaves diets. The taxonomical studies on the forty isolates revealed that the microbial isolates represented eight genera; *Bacillus* spp. (8 isolate); *Actinomycetes* spp. (2 isolates); *Enterococcus* spp. (6 isolates); *Saccharomyces* spp. (2 isolates); *Lactobacillus* spp. (3 isolates) and *Pseudomonas* spp. (5 isolates); *Enterobacter* spp. (13 isolates) and *Xanthomonas* spp. (1 isolates). Neither enrichment selective media nor conditions were adequate for red palm weevil gut microflora.

Key Words: Intestinal microbiota, red palm weevil, date palm, microorganisms - Histology- Anatomy- Alimentary Canal.

Name of Candidate: Ihab Dahab Ibrahim **Degree:** M. Sc.

Title of Thesis: Studies on some pests of tomatoes and their biological control in the southern valleyof Egypt

Supervisors: Dr. SAYED A. EL ARNAOUTY Dr. Amal I. Afifi
Dr. AHMED H. EL-HENEIDY

Department: Economic Entomology and Pesticides

Branch: Economic Entomology **Approval:** / /

ABSTRACT

The present study focused on survey the important pests attack tomato crop in the Nasser Lake region Aswan Governorate and the application of biological control using natural enemies. Has been survey to insect pests affecting tomato yield and appreciation of their harm on 20 plants / acre have been selected randomly biweekly in just one season 2006/2007. Infestation rates with tomato fruit worm were estimated. Evaluation the releases of natural enemies on the pest population and the effect of whiter factors biweekly in 2006/2007 and 2007/2008 in the three replicates and control. the result showed that the mean rate of infestation with *S. exigua* was 4.1%. Infestation rates of the other pest species were relatively very low; *E. discipenus* and *liriomyza* spp. (0.9 %), *T. urticae* (0.75 %), *Aphis* spp. (0.5%) and *B. tabaci (*0.33 %). General mean rate of infestation by *H. armigera* larval for the whole season was 9.6%., general mean number of moths for the whole season was 9.8 moths/ trap in the first season 2006/2007 compared with second season 2007/2008 were 10.2% and 9.8 moths/ trap respectively. Statistical analysis showed that There was a negative correlation between the rate of infestation and temperature while there was a positive correlation between the rate of infestation and humidity. Generally, percentages of reduction due to the releases of *T. evanescens* was 41.4 %. In the second season 2007/2008 evaluation of releases different ages of *T. evanescens* and *T. evanescens* + *Chrysoperla carnea* as a predator. Results showed that the combined release of the predator and the parasitoid at treatment (C) gave highest percentage of reduction (63.7 %) in the pest larval infestation, compared with reduction percentages of (59.8 and 50.9 %), at the treatments (A) and (B), respectively.

Effect of weather factors on pupae of *T. evanescens* under field conditions pupal period prolonged in low temperatures. Lowest pupal period was four days when the parasitoid was released by 7 days old pupae, at temperature 24.9 ºC and 32.6% humidity. Longest period was 13 days was recorded at 15.3 ºC and 33.2% humidity when the parasitoid was released by 4 days old pupae. Lowest pupal period was 7 days at 25.1 ºC and 33.2% humidity. Longest period (17 days) was recorded at 13.9 ºC and 28.4% humidity. Estimated the rate of parasitism of *T. evanescens* results showed that the percentage of parasitism attained 89.9±٠,٣, 86.5±1.3 on *H. armigera* and *S. cerealella*, respectively. Sex ratio (M**:** F) was; 1: 3.9 and 1: 3 in *H. armigera* and *S. cerealella*, respectively. Estimated the efficacy of *Ch. carnea* larval consumption, when fed on eggs of *H. armigera* total duration of the larval stage was 8.3 and 9.16days in the larvae reared on *H. armigera* eggs and the aphid, respectively. The percentages of larval mortality were relatively higher in case of rearing the predator's larvae on *A. craccivora.* Durations of the pupal stage of *Ch. carnea* were 8.2± 0.66 and 8.4± 0.68 days, respectively. Rates of adult emergence of *Ch. carnea* from the pupae 92.7 and 93.5 %, respectively. Sex ratio 1: 0.93 and 1: 0.9, respectively. Mean longevity of males of *Ch. carnea* 35.7± 0.7 and 41.5± 0.88 days, respectively. Female longevity total period 40±0.7 and 36.2±1.8 days. Mean number of eggs/ female of *Ch. carnea* was 912±1.28 and 778.6±1.62 eggs/ female, respectively.

Key words: tomato, *T. evanescens, Chrysoperla carnea,* the Nasser Lake, *H. armigera*

Name of Candidate: Mohammed Abdel-Wahab Ibrahem Hamada **Degre:** M.Sc.
Title of Thesis: Morphometrical And Biological Studies Of Local Carniolan Honeybee Colonies In Manzala Region
Supervisors: Dr. Mahmoud El-Sayed Nour
Dr. Mohamed Attia Ewies
Dr. Mahmoud Ezzat Zakaria
Department: Entomology and Pesticides
Branch: Entomology
Approval: / 1 / 2012

ABSTRACT

This study was carried out in a private apiary at Meet Salseel, Manzala region, Dakahlia governorate which is considered as isolated area for rearing Carniolan race (*Apis mellifera carnica*), during the period from October, 2008 to March, 2010 to investigate the following objectives: 1. Morphometric characters of the local carnica colonies at Manzala region. 2. Biological activities of honeybee colonies 3. Evaluation the productivity of this race

1. Clear significant differences in the mean value and the range of the following measured characters of the worker bees of the tested Carniolan colonies in Manzala region; 1. The length of proboscis (mm./worker/col.). 2. The length and width of the forewing (mm./worker/col.). 3. The cubital index of the forewing (mm./worker/col.). 4. The length and width of hind wing (mm./worker/col.). 5. The length and width of basitarsus of the hind leg (mm./worker/col.). 6. The length and width of the first wax gland (mm./worker/col.). 7. The length and width of the 3rd sternum (mm./worker/col.).

2. The tested Carniolan colonies in Manzala region showed significant differences in the mean amount of sealed worker brood (in^2./col.) between the different inspection dates, months and seasons.

3. There were very low values of sealed drone brood (in^2./col.) reared by the tested colonies during the different dates of inspection in and between the different months and seasons of the year. However, the inspection late winter and spring seasons recorded the highest values during the year.

4. The highest values of combs covered with bees were recorded in May and April, whereas, the lowest were showed in November, September and February.

5. Spring season detected the highest mean amount of honey storage (in^2./col.) and followed by, summer and autumn seasons whereas, winter season showed the lowest seasonal mean value.

6. Spring season detected the highest mean amount of pollen storage (in^2./col.) and followed by, summer and winter seasons whereas, autumn season showed the lowest seasonal mean value.

7. The tested colonies were able to draw the added wax foundations in different dates from 17/4 to 7/5/2009. Ten, seven and six wax foundations were added to 10, 7 and 6 colonies, respectively, at 17/4, 24/4 and 7/5/2009, respectively. The mean time needed for drawing each wax foundation was 36.6, 37.7 and 48 hr./wax foundation/col.

8. The Carniolan bee colonies at Manzala region, were able to rear and produce high number with high weight of virgin queens (mg./queen) in late winter. The highest value was noticed in experiment no. 2 (182.27 mg./queen) and followed by experiment no. 1 (178.26 mg./queen), while experiment no. 4 and 3 indicated the lowest values (171.58 and 175.20 mg./queen, respectively).

Key Words: *Apis mellifera carnica*, morphometrical characters, biological studies, Carniolan race