

DEDICATION

To my mother

TO my father

To all my family

ACKNOWLEDGMENTS

I would like to express my gratitude and sincere thanks to my supervisor Dr. Saif El deen. M. kheir for his kind guidance and supervision.

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ABSTRACT

The groundnut borer, *Caryedon serratus* is a serious pest of stored groundnuts, *Arachis hypogaea* in some parts of the world. It causes heavy

losses in stored groundnuts in Western Kordofan state especially El Nohoud area. In this study the survey covered fields and stores. The survey revealed that, *C. serratus* was absent in the fields during October. While it was present in stores and infestation become severe with time. This study revealed that the mean of loss in weight reduced from 100 gm in May 2005 to 38.85 gm in February 2006. The pest consumes all inner contents of infested seeds. Adults escape from excessive heat by burrowing among nuts. Adult female usually lays eggs singly on shelled or unshelled groundnuts. The eggs are small, semi-ovoid in shape and yellowish in colour during the first day, and turns to whitish after hatching. Translucent shriveled eggs indicate unfertilized or dead embryo. Larvae of *C. serratus* were creamy whitish in colour. They were observed to bore and enter into groundnut seeds and feed on it soon after hatching. The pupal cocoons, made by the full grown larvae. Cocoons usually were formed on the surface of the seeds or inside the seed. The cocoon was ovate in shape. The empty cocoon was paper like. The average number of eggs laid by 10 females per day was 63.8 eggs under room condition when the pest reared on shelled groundnut. The oviposition period and post oviposition period was 6.1 and 2.3 days respectively. The longevity of male and female was 8.5 and 9.5 days respectively. The incubation period, larval period, pupal period and generation period of *C. serratus* were 6, 25.5, 12 and 45 respectively. The

percentage of egg hatchability, the percentage of the larvae which reached the pupal stages, the percentage of pupae matured to the adult stage and the total percentage of survival in all stages were 82%, 88%, 94% and 68 respectively. In this study the life tables data analysis revealed that the net rate of reproduction (RO), weight generation time (T) the innate capacity for numerical increase (rm) and the doubling generation time (DT) were 8.057, 48.48, 0.0142 and 48.59 respectively. All botanicals used in this experiment as neem leaf ethanolic extract at dose 5, 2.5 and 1.5ml/50gm, neem seed kernel powder at dose 5, 3 and 1gm/50gm and neem oil at dose 5, 2.5, and 1.5ml/50gm exhibited very good ovicidal effect against *C. serratus* and caused mortality between 78.8% to 100%. Also all botanicals at all doses showed strongly larvicidal effect against *C. serratus* and caused mortality between 95% to 100%. When *C. serratus* was fumigated by kafor oil 100% mortality of .adults was recorded within 24 hours at dose 10ml/28.3cm²

خلاصة الأطروحة

تعتبر ثاقبة الفول السوداني *Caryedon serratus* من آفات المخازن الخطيرة

علي الفول السوداني (*Arachis hypogaea*) في بعض أجزاء العالم. هذه الآفة تسبب

ضررا كبيرا علي الفول السوداني بغرب كردفان وخاصة منطقة النهود.

في هذه الدراسة غطي المسح الحقول والمخازن. أظهر المسح عدم وجود الآفة خلال شهر

اكتوبر في الحقول، بينما تتواجد في المخازن وتصبح الاصابة خطيرة مع الزمن. أظهرت

هذه الدراسة نقصا في متوسط وزن الحبوب من 100 جرام في شهر مايو 2005 الي

38.85 جرام في شهر فبراير 2006. هذه الآفة تستهلك كل محتويات الحبوب المصابة.

الحشرات البالغة تهرب من الحرارة الشديدة بالاختباء داخل حبوب الفول. تضع الأنثي

البيض فرادي علي الفول السوداني المقشور أو غير المقشور. البيض صغير، وشبه

بيضاوي في الشكل ولونه اصفر باهت خلال اليوم الأول يتحول الي اللون الابيض بعد

الفقس. البيض شبه الشفاف الضامر يدل علي عدم التخصيب أو موت الجنين. يرقات

ثاقبة الفول السوداني لونها كريمي أبيض، لوحظ أنها تتقب حبوب الفول السوداني

وتتغذي عليها مباشرة بعد الفقس. شرانق العزاري تصنعها اليرقات كاملة النضج ويتم

التشترق علي سطح الحبوب أو داخلها. الشرنقة بيضاوية الشكل. الشرنقة الفارغة

يصبح شكلها كالورقة.

متوسط عدد البيض الذي وضع بواسطة عشرة اناث في اليوم 63.8 بيضة تحت ظروف

الغرفة العادية عندما تربي الحشرة علي الفول المقشور. فترة وضع البيض وفترة ما

بعد وضع البيض هي 6.1 و 2.3 يوما علي التوالي. الذكر والأنثي يعيشان لفترة 8.5 و

9.5 يوما علي التوالي. وفترة حضانة البيض، الفترة التي تعيشها اليرقة، فترة العزراء

وفترة الجيل لثاقبة الفول السوداني كانت 6، 25.5، 12، و 45 يوما علي التوالي. نسبة

فقس البيض من مجموع 200 بيضة، نسبة اليرقات التي تطورت الي عزاري من 164

يرقة، نسبة العزاري التي تم نضجها الي حشرات كاملة من 144 عزراء والنسبة المئوية

لمعدل الحياة لكل الأطوار كانت 82%، 88%، 94% و 68% علي التوالي.

في هذه الدراسة أظهر تحليل جداول الحياة قيمة نسبة صافي التكاثر (Ro)، قيمة زمن

الجيل (T)، قيمة القدرة التقريبية لمعدل الزيادة العددية الموروثة (rm) وقيمة زمن

تضاعف الأجيال (DT) كانت 8.057، 48.48، 0.0142 و 48.59 علي التوالي.

كل المبيدات من أصل نباتي عند الجرعة التي أستخدمت في هذه التجربة كالمستخلص

الكحولي لورق النيم، عند الجرعة 5، 2.5، 1.5 جم/50جم ، بودرة بذرة النيم عند

الجرعة 5، 3، 1 جم/50جم وزيت النيم عند الجرعة 5، 2.5، 1.5 جم/50جم بينت تأثير

جيد جدا علي بيض ثاقبة الفول السوداني وأحدثت نسبة موت بين 78.8% الي 100%.

ايضا أوضحت كل المبيدات من أصل نباتي عند كل الجرعة تاثير قوي علي يرقات ثاقبة

الفول السوداني وأحدثت نسبة موت بين 95% - 100%.

عند تبخير ثاقبة الفول السوداني بزيت الكافور سجلت نسبة موت 100% علي الحشرات

الكاملة خلال 24 ساعة عند الجرعة 10مل/28.3سم²

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