بسم الله الرحمن الرحيم

قال تعالى :

) يَا أَيُّهَا النَّاسُ ضُرِبَ مَثَلٌ فَاسْتَمِعُوا لَهُ إِنَّ الَّذِينَ تَدْعُونَ مِن دُونِ اللَّهِ لَن يَخْلُقُوا ذُبَابًا وَلَوِ اجْتَمَعُوا لَهُ وَإِن يَسْلُبْهُمُ الذُّبَابُ شَيْئًا لَّا يَسْتَنقِذُوهُ مِنْهُ ضَعُفَ الطَّالِبُ وَ الْمَطْلُوب(

الآية (73) الحج

صدق الله العظيم

Dedication

To soul of my father, to my dear mother, sisters and brothers. To my dear husband and friends with love and respect.

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ABSTRACT

Field and laboratory studies were undertaken at Khatoum State (Elkadarew, Elezergab, and Elkhujlab), and Sennar State (Senga) for three successive guava seasons 2006- 2009 .

The collected species identified in the laboratory from guava fruits at the University of Sudan in August 2007, as *Ceratitis capitata* (Wiedmann) 45%, *Ceratitis cosyra* (Walker) 27.]

5 %, and the Asian fruit fly, *Bactrocera invadens* 20 % (Drew Trusta and White) and *Pardalaspis quinaria* (Bezzi) 7.5%. *Ceratitis capitata* was found to be the dominant fruit fly species in the three selected areas.

Among the different fruit flies attractants investigated, food traps proved to be an effective lure for trapping large numbers of both sexes of *Ceratitis capitata.* . Monitoring of fruit fly species were carried out using food bait traps

A comparison of med fly population among the three selected areas showed that population in July and August 2006 was significantly bigger than September2007. Also it demonstrates that population of Elezergab was significantly higher than both Elkadrew and Elkhujlab. The result of seasonal abundance of the med fly in Khartoum State (Khartoum North - Elezergab) surveyed during the period May 2007-April-2008 showed two peaks of med fly Populations. One peak was recorded in July, August, September, and October 2007 with values 84, 82, 81 and 80 respectively. The other peak was found during January 2008 with value 81. Significant reduction in population occurred

during June and April 2008 with values 21, 1 and 23 respectively. Drastic reduction recorded during May 2007 which was 1,9. The Population abundance of fruit flies generally increase with the rainy season, high population was recorded during the humid months of July and August, while low population was recorded during dry May 1,9.

In the present study a bigger population of med fly was found in Khartoum State Elezergab than that of Sennar State during August 2009.

In the host preference experiment guava proved to be the most preferred by fruit flies followed by banana , mango, and grapefruit. No infestation was recorded in lemon.

The activity time according to the present study indicated that the mid fly peak activity lies between the period 6-8 am , followed by a period between -8 -10 am and the period between 4-6 pm . The least activity was recorded during 12-2 pm.

The number of Mediterranean fruit fly ovipucuters ranged from 11-120 with the an average of 48,6 punctures per guava fruit within the study area . All attempts for counting number of eggs per ovipuncture in the field ended up in vain , even with use of the eye- lens .The oviposition was usually on the middle side , while it was very rare near the fruit stalks.

On the effect of guava fruit color on fruit fly infestation, yellow guava was the most susceptible 80% followed by yellow-green 60%.

Green shows slight infestation 20%, while dark green was the least susceptible 10%.

A laboratory study was carried out to investigate med fly life cycle. Mean developmental time of egg + larvae was found to be 16 days, mean developmental time of pupae was found to be 10 days, mean longevity time of adult was found to be 25 days and the total of developmental time for all stages was recorded as 51 days.

The chemical control experiment in the laboratory showed a Significant difference among insecticides used .Malathion (57%) was the most effective which gave 98 % mortility of fruit fly, followed by cypermethrin (0.03%) which gave 60%, neem ethanolic extract (4 ml) which gave 48 % then cafure powder (20 mg) which gave 20%,mortility.

Despite the fact that synthetic chemicals were more effective than botanical extracts, but the botanicals proved to be more safe and biodegradable.

ملخص البحث

أجريت الدراسات الميدانية والمعملية في ولاية الخرطوم(الكدرو، الازيرقاب والخوجلاب)، وولاية سنار (سنجة) لمدة ثلاثة مواسم متتالية للجوافة 2006-2009. تم التعرف على الأنواع التي تم جمعها في المعمل من ثمار الجوافة في جامعة السودان في أغسطس 2007 ، مثل ذبابة البحر الأبيض *المتوسط* *Ceratitis capitata* (Wiedmann) 45 ٪، ذبابة فاكهة *المانجو* *Ceratitis cosyra* (Walker) 27،5 ٪ ، وذبابة الفاكهة الروديسية 7.5 *Padralaspis quinaria* (Bezzi) وذبابة الفاكهة الآسيوية الغازية، (*Bactrocera invadens* Drew Trusta and White) 20 ٪ . كانت *Ceratitis capitata* هي ذبابة الفاكهة السائدة في المناطق المختارة الثلاثة ومن بين الطرق المختلفة الجاذبة لذبابة الفاكهة التي تم التحقق منها، ثبت أن مصائد الأغذية كانت فعالة لجذب أعداد كبيرة من كلا الجنسين من *Ceratitis capitata*.

تم رصد أنواع ذبابة الفاكهة باستخدام شراك الطعم الغذائية. أظهرت المقارنة بين أعداد ذبابة البحرالابيض المتوسط في المناطق الثلاث المختارة في شهري يوليو وأغسطس كان أكبر بكثير من سبتمبر. كما أنه يدل على أن العدد الموجود في الازيرقاب كان أعلى بكثير من كل من الكدرو والخوجلاب أظهرت نتيجة المسح الذي تم لذبابة البحر المتوسط في ولاية الخرطوم (الخرطوم بحري-الازيرقاب) خلال الفترة من مايو 2007 -أبريل 2008 ذروتين لمجموعات ذبابة البحر المتوسط. وسجلت ذروة واحدة في يوليو وأغسطس وسبتمبر وأكتوبر 2007 مع القيم 84 ، 82 ، 81 و 80 على التوالي. سجلت أخرى خلال شهر يناير 2008 بقيمة 81. حدث انخفاض كبير في عددها خلال شهر يونيو وابريل مع القيم,23و 1,21 على التوالي. سجل انخفاض حاد خلال شهر مايو الذي كان 1.9 .

وكانت كثافة مجموعات ذباب الفاكهة تزيد بصورة عامة، مع موسم الأمطار، وسجلت الكثافة العالية خلال الأشهر الرطبة في شهري يوليو وأغسطس، بينما تم تسجيل انخفاض في العدد خلال شهر مايو الجاف حيث كان .1.9 وجد في هذه الدراسة أن عدد أسراب الذبابة كان اكبر في ولاية الخرطوم الازيرقاب عن ولاية سنار خلال شهر أغسطس 2009.

في تجربة العائل المفضل ثبت أن الجوافة كانت الأكثر تفضيلا من قبل ذبابة الفاكهة يليها الموز والمانجو والقريب فروت. لم تسجل أية إصابة في الليمون. وتأكد وفقا لهذه الدراسة أن ذروة وقت نشاط الذبابة يقع بين الفترة 06-8 صباحا، تليها الفترة ما بين -8 -10 صباحا والفترة ما بين 4-6 مساء. وسجلت أقل نشاطا بعد الظهر خلال الساعة 12-2 مساء.

تراوح عدد ثقوب البيض لذبابة الفاكهة البحر التوسط بين 11-120 بمتوسط 48.6 ثقب لفاكهة الجوافة الواحدة في منطقة الدراسة. لم تنجح جميع المحاولات في الحقل الرامية لحساب عدد البيض للثقب الواحد، وحتى مع استخدام عدسة العين. وكان عادة موقع وضع البيض على الجانب الأوسط ، في حين كان نادرا للغاية بالقرب من سيقان الفاكهة.

حول تأثير لون فاكهة الجوافة على غزو ذبابة الفاكهة كانت الجوافة الصفراء

الأكثر عرضة ٪ 80 تليها الأصفر المخضر ٪ 60. أظهرت الجوافة الخضراء إصابة طفيفة بنسبة 20 ٪، في حين الخضراء الداكنة كانت الأقل عرضة بنسبة 10 ٪.
وأجريت دراسة معملية للتحقق من دورة حياة الذبابة. وجد أن متوسط وقت النمو من البيض + اليرقات كان 16 يوما، ومتوسط وقت نمو العذارى 10 يوما ، ومتوسط وقت العمر للطور البالغ 25 يوما ، وكانت الفترة لكل الأطوار 51 يوما. وأظهرت تجربة المكافحة الكيميائية في المختبر فرقا كبيرا بين المبيدات الحشرية المستخدمة. كان المالاثيون (57 ٪) الأكثر فعالية الذي أعطى 98 ٪ من معدل فناء ذبابة الفاكهة يليه (0.03 ٪ cypermethrin) والذي أعطى 60 ٪ ، ومستخلص النيم الكحولي (مل) الذي أعطى 48 ٪ ثم cafure مسحوق الكافور (ملغ) الذي أعطى 20 ٪ ، من معدل الوفيات للذبابة. على الرغم من الحقيقة أن المواد الكيميائية الاصطناعية كانت أكثر فعالية من المستخلصات النباتية ولكن ثبت أن المستخلصات النباتية هى الأكثر أمانا والقابلة للتحلل.