

## *Dedication*

*To My:*

*Parents,*

*Brothers,*

*Sisters,*

*Uncles,*

*Aunts,*

*Teachers,*

*Friends,*

*And all date palm growers.*

*Khalid*

## **Acknowledgements**

First of all I would like to express my thanks to Almighty Allah (The Greatest), who helped me to complete this research.

I would like to express my deepest thanks to my supervisor Dr. Awad Khalafalla for his supervision and interest throughout the research.

I am especially indebted to my co-supervisor Dr. Tagelsir Ibrahim for his patience and continuous guidance, fruitful directions and follow up throughout this work.

Special thanks are due to Ustaz Fakhreldeen Awad Hussein and Omer Ahmed for their cooperation in the statistical analysis and Omer Eldoush for typing the thesis

Thanks are extended to Mr. Salah Mobashar for his help and hosting me in his house at Elghaba during the field part of the research.

Appreciation also extended to the staff of the agricultural office of Elghaba locality, and the farmers in Elghaba Scheme especially Mahadi Mohi-Eldin, Abd-Elmonaim Elshaigy, Abdelrahiem Abdelhafiez and Dafa-Elseed Hashas.

Finally, special thanks are due to my family for their financial and moral support.

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## **Abstract**

This study was undertaken at Elghaba Agricultural Scheme, Eldabba locality, Northern State to evaluate the effectiveness of the extracts of two plants argel and usher against the green date palm pit scale insect (*Asterolicanium phoenicis*) and their effect on the productivity. The experiments were carried out in 4 villages in the area (Arab Narti, Wad-diab, Gharab Dongola and Elkinduwa people's scheme).

Argel and usher powder were used by three methods of soil leaf powder application (dose 100 gm/palm), spray of leaves water extract (dose 100 gm/palm) and soil + spray of leaves water extract (dose 100gm soil + 100 spray/ palm). Actara 25 W.G Thimethoxam (Neonicotinoid group) (dose 20gm/palm) was used as recommended and for comparison.

To evaluate the effects of the plant extract after each treatment, 8 leaflets were chosen randomly from the 4 directions from each tree at biweekly intervals. From these 4 leaflets were chosen and each one was inspected under a binocular microscope to calculate the adult and immature mortality in an area of 1 cm<sup>2</sup>.

The results showed that, the application of argel and usher in all treatments caused higher percent mortality of both adult females and immature stages compared to untreated control up to the 8<sup>th</sup> week after application.

Also all treatments increased the yield compared to the untreated control.

According to the results of the present study, the soil argel application at 100gm/tree at 6 week intervals should be recommended as an effective treatment to control the green date palm pit scale insect.

ملخص الدراسة

اجريت هذه الدراسة تحت ظروف الحقل فى مشروع الغابة الزراعى بمحافظة الدقهية الولاية الشمالية خلال موسمى 2005-2006 و 2006-2007 لتقييم فعالية كل من نبات الحرجل ونبات العشر فى السيطرة على الحشرة القشرية الخضراء التى تصيب نخيل التمر بصورة وبائية ودراسة الأثر الممتد على الانتاجية.

اجريت التجارب فى 4 قرى فى المنطقة هى: عرب نارتي - ود دياب - غرب دنقلا -ومشروع الكندوة الاهلى.

تم استخدام الحرجل والعشر بثلاثة طرق هى: الاضافة المباشرة لمسحوق الأوراق الى التربة (الجرعة 100 جم /نخلة)؛ الرش بالمحلول المائى للأوراق (الجرعة 100جم/نخلة)؛ والمعاملة المشتركة بالاضافة المباشرة الى التربة + الرش بمستخلص الأوراق (الجرعة: 100جم للتربة + مستخلص 100 جم لرش كل نخلة). بجانب ذلك تم استخدام المبيد الموصى به من هيئة البحوث الزراعية لمقاومة الحشرة وهو اكتارا WG 25 (Neonicotinoid group) (Thimethoxam) بمعدل 20 جم لكل نخلة بغرض مقارنة فعالية النباتين.

لتقييم فعالية مستخلصات النباتين بعد كل معاملة تم اختيار 8 وريقات عشوائية من أربعة اتجاهات من كل نخلة كل اسبوعين بعد بدء التجربة ومن هذه تم اختيار 4 وريقات ليتم فحص كل منها تحت الميكروسكوب لحساب موت الاطوار الكاملة وغير الكاملة فى مساحة واحد سنتيمتر مربع من كل وريقة.

اوضحت النتائج ان استخدام الحرجل والعشر فى كل المعاملات ادى الى زيادة عالية فى نسبة موت الاناث والاطوار غير البالغة للحشرة مقارنة مع الاشجار غيرالمعاملة (الشاهد) حتى الاسبوع الثامن بع المعاملة. اضافة لذلك فان كل المعاملات أدت الى زيادة فى الانتاجية مقارنة بالشاهد غير المعامل

بناء على نتائج هذه الدراسة فان استخدام الحرجل بجرعة 100 جم/ نخلة معاملة التربة على فترة كل 6 أسابيع يمكن أن يوصى به كمعاملة فعالة لمكافحة الحشرة القشرية الخضراء على النخيل

.