Dedication

To my family with sincere love.

Mecca

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# ABBREVIATIONS

| | |
|---|---|
| °C | Degree centigrade |
| RH | Relative humidity |
| Kg | Kilogram |
| G | Gram |
| Mg | Milligram |
| Lbs | Pounds |
| Cu | Cubic |
| Ft | Foot |
| m | Meter |
| mm | Millimeter |
| ml | Milliliter |
| > | Greater than |
| < | Less than |
| IPM | Integrated pest Management |
| Sov | Source of variance |
| d.f | Degree of freedom |
| LSD | Least significant difference |
| CV | Coefficient variation |
| SE | Standard error |

## ABSTRACT

The potential usage of ethanolic extracts of neem and datura seeds in addition to the neem seed oil as pest control agents was investigated under laboratory conditions against the cowpea weevil (*Callosobruchus maculatus* F.).

Evaluations were based on the oviposition repellent effect, insecticidal and the effect on development of *C. maculatus* (F.). The investigation was also extended to cover the evaluation of the loss in weight of cowpea seeds.

The concentration extracts that used were 2.5%, 5% and 10%.

The results of this investigations showed that there was a significant repellent effect on egg laying. Insecticidal activities of this extracts were observed during the first four days of the experiment in particular.

Post-oviposition treatments of cowpea seeds with the neem oil, ethanolic extracts of neem and datura seeds, showed strong inhibition to the egg viability and percentage of adult emergence.

The results generally indicated the order of effectiveness: neem seed ethanolic extract > neem oil > datura seed ethanolic extract.

Also the extracts decreased the percentage of weight loss of treated cowpea seeds.

The results reported here indicated the good potential of these plants as promising alternatives to synthetic pesticides, and the mode of efficacy was discussed.

# خلاصة الأطروحة


أختبرت إمكانية استخدام المستخلص الإيثانولى لبذور النيم والداتورا بالإضافة إلى زيت بذور النيم كعنصر مكافحة آفات تحت ظروف المعمل ضد خنفساء اللوبيا (*Callosobruchus maculatus* F.) .

وكان التقييم بناء على الأثر الطارد لوضع البيض والقاتل للحشرة الكاملة والتأثير على نمو الحشرة. وكذلك إمتدت الدراسة لتشمل الأثر على كمية الفاقد من الحبوب المعاملة.

وكانت التركيزات المستخدمة لهذه المستخلصات (٢.٥%، ٥% و ١٠%).

أظهرت النتائج الأثر الفعال لهذه المستخلصات فى طرد الحشرات من وضع البيض على الحبوب المعاملة بفارق معنوى. أيضاً من ضمن الملاحظات الأثر القاتل لهذه المستخلصات للحشرات الكاملة خاصة خلال الأيام الأربعة الأولى من بداية التجربة.

عند معاملات بعد وضع البيض أظهرت النتائج الأثر المثبط القوى لهذه المستخلصات على نقص البيض وخروج الحشرة الكاملة.

وكان ترتيب الأثر الفعال لهذه المستخلصات كما يلى: المستخلص الإيثانولى لبذور النيم > زيت بذور النيم > المستخلص الإيثانولى لبذور الداتورا.

كذلك قللت هذه المستخلصات نسبة الفاقد من وزن الحبوب المعاملة.

النتائج التى تم الحصول عليها أظهرت مقدرة المستخلصات النباتية كبدائل واعدة للمبيدات المصنعة وقد ناقش البحث طريقة تأثير هذه المستخلصات الطبيعية.