

Dedication

To my family, mother, father, brothers, sisters,
and

To all my friends with love and respect

Acknowledgments

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Abstract

This research was conducted at the laboratory of the department of Plant Protection College of Agricultural Studies (Shambat) Sudan University of Science and Technology.

The purpose of this study was to evaluate the efficacy of different concentrations of NeemAzal-T/S, Malathion57 and a combination of both insecticides against larvae and adults of the red flour beetle *Tribolium castaneum*. All concentrations of NeemAzal-T/S gave a significantly higher mortality percentage among the 3rd instar larvae than the adults.

In fact the recommended dose of NeemAzal-T/S did not cause any mortality among the adults until the 7th day (6.7%) and it reaches (13.3%) by the 11th day. On the other hand the larvae experienced mortality since the first day (3.3%) and reaches 43.3% on 7th day, 63.3% on the 8th day and 83.3 on the 11th day.

On the other hand the recommended dose of Malathion57 caused 43% mortality among the larvae on the 1st day as opposed to 87% mortality among the adults. By the 2nd day all treated adults were dead compared to 83% of the larvae, on the 3rd day the percentage mortality among the larvae reach 97% and on the 4th day it reaches 100%.

The mortality percentage of the combination of Malathion57 and NeemAzal-T/S showed that 60% of the adult died on the first day as opposed to 57% of the larvae, the percentage mortality among the adults on the 2nd, 3rd, 4th day was 80, 93 and 100% respectively. Where the mortality percentage among the larvae for the same days was 70, 77 and 97% respectively. It is clear from the results that Malathion57 caused a fast mortality compared to NeemAzal-T/S which start to kill the pest after along period of exposure.

ملخص البحث

تم تنفيذ هذا البحث فى قسم و قاية النبات كلية الدراسات (شربات) الزراعيه جامعة السودان للعلوم والتكنولوجيا.

والغرض من هذا البحث هو تقييم تأثير التراكيز المختلفة للنيمازال والملاثيون 57 والخلطة بين المبيدين ضد اليرقات والحشرات الكاملة لخنفساء الدقيق الحمراء *Tribolium castaneum*

جميع التركيز للنيمازال أدت فروقات معنوية للنسبة المؤيه للموت على الطور الثالث مقارنة بالحشرات الكاملة .

أظهرت النتائج أن الجرعة الموصى بها للنيمازال لم تعمل أى موت بالنسبة للحشرات الكاملة إلى ان وصل إلى اليوم السابع بحيث كانت نسبة الموت (6.7%) وفى اليوم الحادي عشر وصلت (13.3%) ومن الناحية الأخرى أن اليرقات فى اليوم الأول حصل نسبة موت (3.3) واليوم السابع (43.3%) واليوم الثامن (63.3%) حتى اليوم الحادي عشر وصلت نسبة الموت (83.3%). على الجانب الآخر أن الجرعة الموصى بها للملاثيون 57 أدى نسبة موت (43%) لليرقات فى اليوم الأول بالمقارنة مع (87%) موت للحشرة البالغة. وفى اليوم الثاني جميع الحشرات الكاملة ماتت بينما اليرقات وصلت (83%). وفى اليوم الثالث وصلت نسبة الموت فى اليرقات إلى (97%). أما اليوم الرابع وصلت نسبة الموت (100%) .

أما النسبة المؤيه للموت فى حالة الخلطة بين الملاثيون 57 والنيمازال أدت نسبة موت (60%) للحشرة الكاملة

بالمقارنة (57%) لليرقات. أما نسبة الموت فى الحشرات الكاملة فى اليوم الثاني والثالث والرابع كانت (80%), (93%) و (100%)على التوالي بينما اليرقات فى نفس الأيام وصلت نسبة موتها (70%), (77%) و (97%) بالتوالي. كما هو موضح فى النتائج فإن الملاثيون أدى نسبة موت أسرع مقارنة بالنيمازال والذي أدى موت للافه بعد فترة طويلة من المعاملة.

