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تأثير مستخلصات النيم (Azadirachta indica A. Juss) على الطور البالغ لثاقبات الحبوب الصغرى Rhizopertha dominica (F.) و على أنسجة الكبد و الكلى في الفئران البيضاء

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Abstract : The most important antifeedants are the members of the Triterpenoids group extracted from the neem tree Azadiracta indica. No plant material has such high activity against wide spectrum of pests like this chemical group. This research examined the effect of neem extracts on the insect Rhizopertha dominica (F.), the so-called "lesser grains borer", that bores and damages to small grains. Four experiments were carried out in this study: the first was to study the effect of neem leaves aqueous extract, the second studied the effect of neem leaves methanol extract, the third was to study the effect of neem seeds aqueous extract and the fourth was to study the effect of neem seeds methanol extract. One hundred and twenty insects were used in each experiment to carry out the aforementioned studies. Each experiment consisted of six groups in which each group consisted of 20 insects added to a bottle containing 30 intact small grains pretreated with the neem extract. The first group was set for testing 1% of the extract on the insect, the second (2%), the third (3%), the fourth (4%), the fifth (5%) of the extract, respectively, and the sixth was as control. These four experiments lasted for five days and carried out in triplicate. The results showed that the neem different four extracts were effective against the insect when comparing each tested concentration (1, 2, 3, 4, 5%) of the extracts with their control groups in all test days. Death rate of the insects in the fifth day was 100% in case of leaves aqueous extract and seeds aqueous and methanol extracts, whereas the rate was 95% with leaves methanol extract. The study showed that the neem leaves aqueous extract had much more activity than leaves methanol extract and the neem seeds methanol extract was more effective than seeds aqueous extract. Another study tested the effect of neem extracts on mice. Neem leaves aqueous extract was tested on a group of 20 male and a group of 20 female mice each divided into four groups, 5 each. These groups were as follows: the first one were orally injected with 5g of neem leaves powder/ kg of mouse weight daily for six weeks, the second one with 10g/kg, the third one with 15g/kg and the last one as control. The same experiment was repeated onto the effect of the neem seed methanol extract on a group of 20 male and a group of 20 female mice each divided to the same four aforementioned groups. Results showed no changes either in the growth or in behaviour of mice. Also no histological changes were observed in the liver or kidney of all tested mice of all different groups. These results indicated the safety of using neem as bio-insecticide.

Supervisor : د/ زراق بن عيسى الفيفي

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