بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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MONA MAGHRABY

USING NANO MATERIAL APPLICATION AGAINST RED PALM WEEVIL *Rhynchophorus ferrugineus* (OLIVIER) IN EGYPT

By

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B.Sc. Agric. Sci. (Economic Entomology), Fac. Agric., Cairo Univ., 2013

THESIS

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APPROVAL SHEET

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SUPERVISION SHEET

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Title of Thesis: Using Nano Material Application Against Red palm weevil *Rhynchophorus ferrugineus* (OLIVIER) in Egypt

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ABSTRACT

The efficacy of imidacloprid and chlorpyrifos and their nano derived were evaluated in the laboratory against larvae and adults of the red palm weevil by using dipping food technique for larvae and insecticide saturated cotton per adults during 2016, 2017 and 2018. The results revealed that nano chlorpyrifos was the most toxic insecticide among the tested compounds against the larvae, followed by chlorpyrifos, imidacloprid and nano imidacloprid. The larvae were more susceptible than the adults to most of the tested insecticides. Moreover, increasing time of exposure, the toxicity of imidacloprid to both larvae and adults increased and also was more effective than nano imidacloprid while the opposite situation was obtained with nano chlorpyrifos. The histological studies have shown the damage included vaculation of cytoplasm, analysis and destruction of epithelial cells, and analysis of nuclei of the epithelial cells. The larvae were more sensitive in the total damages in comparison with adults. Nano chlorpyrifos was more efficacies in the recovery of infected palms by stopping oozing brown fluid after 21-30 days. The traps contained nano gel pheromone attracted significantly more adults with an average of 4.26 and 3.56 adults / trap compared to control with an average of 2.69 and 2.46 adults/trap for the two seasons 2018 &2019 respectively. Results indicated that the use of nano gel pheromone for the first time in field improved the trap catchability to RPW adults by 22.51 & 18.30% of total number of RPW captured adults for the two seasons 2018 &2019 respectively. In addition, there was no significant difference between the total numbers of RPW adults collected by the two tested type of traps(Traditional trap and dry funnel trap) over the two successive seasons. Furthermore, the sex ratio between males and females of total collected RPW adults found to be 1: 1.43 and 1: 1.94 at 2018 and 2019 respectively.

Key words: *Rhynchophorus ferrugineus*, imidacloprid, chlorpyrifos, nanopesticide, FTIR, TEM, histology, RPW detection device, nano gels pheromone, traditional trap, dry funnel trap.

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