

THE EFFECT OF STAGE SPECIFIC PHEROMONES ALONE AND IN COMBINATION WITH THE INSECTICIDE FIPRONIL ON EGGS, HATCHILINGS AND FLEDGELINGS OF THE DESERT LOCUST (*Schistocerca gregaria* Forskal) (ORTHOPTERA: ACRIDIDAE)

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Abstract

The Desert Locust is one of most important crop pests. The intensive migration of swarms and the numerous of pesticides used for control of the Desert Locust during upsurges and plagues caused environmental risk and affected non - target organisms. The new control strategies aim to keep the locust in low densities in order to prevent the development of upsurges and plague and that is by the use of relatively safe materials such as pathogenic organisms, pheromones and other selective chemicals.

In this study the adult aggregation pheromone (PAN) and the nymphal pheromone blend (NPB) were used with the above consideration in mind. 0.01% PAN was applied against the Desert Locust eggs at different periods after oviposition to test the effect on the hatchability of the eggs. The results have shown that PAN was more effective in the old eggs as compared to the newly laid eggs. PAN also killed hatching nymphs even before they were free from the egg froth and had caused greater embryonic mortality when compared with the untreated group (control).

The nymphal pheromone blend (NPB) was tested against Desert Locust fledgling alone and in a mixture containing the pesticide (fipronil). The results show that NPB had some activity against adults when applied alone, but it accelerated the mortality rate when mixed with fipronil. However NPB was found to delay the maturation of adults (4 weeks in untreated group and 5 weeks for treated group). The nymphal pheromone blend (NPB) also affected the fecundity and oviposition behaviour. The treated females laid less egg- pods (6 egg- pods for all females) and dispersed them outside the oviposition tubes, while the untreated group laid more egg- pods (27 egg- pods for all females) and all egg- pods are in the oviposition tubes.