



INTRODUCTION



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The red palm weevil, *Rhynchophorus ferrugineus* Oliv. (Coleoptera. Curculionidae) is a destructive pest attacking date palm (*Phoenix dactylifera*), oil palm (*Elaieus guineensis*), coconut (*Cocas nucifera*), aren (*Arenga pinnate*) and sago palm (*Miroxilon sagu*). It is widely distributed all over India, Pakistan, Sri Lanka, Thailand, Indonesia, Philippines, New Guinea, Costa Rica, Borma, Kambodia, Cylon, Malesia Taiwan, Vitnam, Iran, China, Laws and Samoa. In 1980's, it was accedentaly introduced from the southeastern Asia into the United Arab Emirates and the Arabian Gulf Area afterwards (**Bokhari and Abuzuhira 1992**).

Red palm weevil was first discovered in north eastern Egypt in 1992 and has now become established as a primary pest of date palm in governorate Sharkia and Ismailia (one million date palm trees).

Date palm trees is an economic crop in Egypt as the total number of trees approximated 11 million producing 750,000 tons of date annually.

The female weevil lays 200 – 350 eggs in wounds, cracks or soft tissues. Incubation periods for eggs, larval, pupal and

adult stages last 3 – 7, 50 – 60, 14 – 21 days and 2 – 3 months, respectively. Adult is strong and flight occurs during daytime.

The most clear symptoms of red palm weevil infestation is the sticky, brown, offensive plant juice oozing from infested tree trunk. As infestation proceeds, a decayed cavity occupied with all the insect stages could be obviously seen.

Sexual communication in a diverse array of phytophagous insects is evidently strongly influenced by host plant chemistry. The effect of host plant on sex pheromone behavior varies and reflects different strategies by males and females. The majority of cases to date, however, involve male – produced pheromones that are attractive to both males and females in conjunction with kairomone which is released from the host plant or host material. Host odor enhancement or synergist of sex attraction (kairomone) is of great importance in the development of pheromone – based lures. If insects in natural settings signal from food or plants from which biologically active odorants emanate, human – made lures based solely on pheromone are not likely to be competitive when placed in the field (**Landolt, 1997**).

These considerations were of great significance in the development of lures for some pests such as *Rhynchophorus phoenicis*, (**Gries et al., 1994**).

Similarly, host odor stimulation of pheromone biosynthesis or release can be critically important to study the sex pheromone behavior and chemistry in the laboratory. Typically, insects are held in a completely artificial environment, with attention given only to environmental conditions such as lighting, temperature and humidity. Insects dependent on host cues to stimulate pheromone biosynthesis, (**Rania *et al.*, 1992**) or to release pheromone, (**Hendrikse and Vos-Bunnemyer 1987 and Jaffe *et al.*, 1993**) may prove quite refractory to efforts to develop attraction bioassays or to obtain chemical samples if the tests are conducted without consideration of host plant effects.

Therefore, the aim of the present study is to investigate the biochemical effect of red palm weevil pheromone and the host attraction interaction. Also, to examine the use of pheromone and food traps to determine seasonal variation of the abundance of adult red palm weevil and the effectiveness of traps for monitoring populations.