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5. SUMMARY

The red palm weevil *Rhynchophorus ferrugineus* oliver, is a destructive pest attacking date palm, oil palm, coconut aren and sago palm, it was reported in Egypt and established in the governorates of Sharkia and Ismailia which have million palm trees.

Date palm tree is an economic crop in Egypt as the total number of trees approximated 11 millions producing 750.000 tons of dates annually.

Therefore, the aim of the present investigation is to study the biochemical effect of red palm weevil pheromone and 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 effect of traps for monitoring populations.

The attractiveness of these weevils were accomplished using different fermented matters, i.e. pineapple, apple, molasses, date, sugarcane and banana to obtain the most suitable conditions for minimizing of these weevils. The results are summarized in the following points:

Effect of different fermented matters on the attraction of red palm weevil.

Experiments were carried out to investigate the attraction power of local fermented matters, i.e. pineapple, apple, molasses, date, sugarcane and banana as kiromone of red palm weevil.

The present work was carried out during November 1999 – October 2000 at the chosen area (Abo-Naga) at Isimilia Governorate, Egypt. The results showed that the traps loaded with fermented banana juice caught the highest number of red palm weevil (210 weevils / year). The mean number of weevils caught per month was 17.5 and ranged from 2 to 34. The least number (77 weevils / year) was attracted to traps loaded with apple juice. Other numbers were caught in traps loaded with molasses (188 weevils / year), sugarcane (167 weevils / year), date fruits (155 weevils / year) and pineapple (144 weevils / year).

The mean numbers of weevils caught per month were 17.5, 15.7, 13.9, 12.9, 12 and 6.4 weevils in traps loaded with banana, (molasses), sugarcane, date, pineapple and apple, respectively.

Comparison between the effect of pheromone (as a control) and different matters on the number of attracted weevils during April using 5 traps with pheromone only was 5 weevils while the number increased in pineapple, apple, molasses,

sugarcane and banana traps to 13, 6, 6, 19, 16 and 34 weevils / month, respectively.

After analyzing the fermented products, ethyl acetate appeared as a common compound in all the tested materials. However, its concentration and its peak during the fermentation period differed among these materials.

Studies on ethyl acetate as kiromone.

The traps baited with ethyl acetate and pheromone caught larger number of weevils (208 / year with average of 17.16 / month) while, traps baited with ethyl acetate only caught less number (127 / year with average of 10.5 / month).

Effect of released ethyl acetate on the attracted weevils in the field.

The highest number of weevils 237 was recorded in the traps with three holes, while; traps with one and two holes caught 208 and 221 weevils, respectively.

The rate of ethyl acetate evaporation.

The loss in weight of ethyl acetate after one week was 6.85, 12.29 and 15.58 gm from traps with one, two and three holes, respectively. The loss in weight of ethyl acetate after 60 days was 78.16, 128.39, 154.91 gm from traps with one, two and three holes, respectively.