

EFFECT OF FERROLURE + IN THE MANAGEMENT OF RED PALM WEEVIL (*RHYNOCHOPORUS FERRUNGINEUS* F.) INFESTING COCONUT

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ABSTRACT

Evaluation of Ferrolure+ pheromone trap in combination with food baits consisting of 1kg of sugarcane molasses + 5 grams of yeast + 5 ml of glacial acetic acid + split petioles of coconut taken in a bucket of 10 lit. capacity was placed @ one trap/ha. During the first fortnight of trap installation, 49 weevils (32 females and 17 males) were trapped. There was a decline in the catch (1 weevil) after two months of trap installation due to reduction in active ingredient of the pheromone compound in the lure. On replacement of new sachets, the number of weevils trapped increased to 22 in sixth fortnight. The results indicate that the pheromone trap Ferrolure+ aid in monitoring and controlling the weevils in a eco-friendly manner.

Key words: Red palm weevil, Ferrolure+

INTRODUCTION

Coconut, *Cocos nucifera* Linn. being a perennial crop harbours various pests round the year. Among the red palm weevil, *Rhynchophorus ferrugineus* is a destructive pest as it bores into the trunk. This behaviour frequently kills the trees (Nirula, 1956; Abraham *et al.*, 1989) recommended injection of one per cent Pyrocone E to save the red weevil infested palms. Copeland (1931) and Mathen and Kurien (1970) suggested that success of chemical methods to control red palm weevil mainly depends on the timely detection of the pest. The concealed nature of the grub prevents developing an ideal management strategy. Coconut being a monocot, the growing part if damaged even the curative treatment with insecticide may not save the palm. Hence, it warrants an integrated approach in management this pest (Vidyasagar and Bhat, 1991). The pheromone trap that aid in monitoring and pest control is an important component of IPM. Baiting and trapping of red palm weevil using host plants (coconut) material was reported by Kurian *et al.*, (1979). Their efficacy improved when combined with synthetic aggregation pheromone (El-grah,

1996). Hence, this study was initiated to determine the efficacy of Ferrolure+ (Synthetic aggregation pheromone) along with food bait attracting the weevils.

MATERIALS AND METHODS

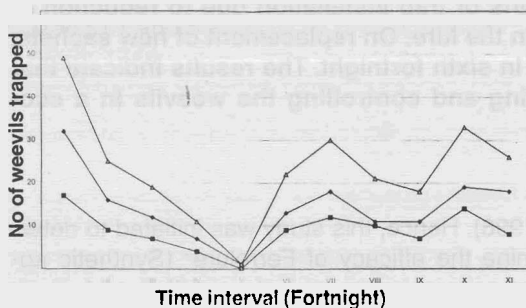
The aggregation pheromone Ferrolure+ (4 Methyl - 5 nonanol + 4 - methyl - 5 - nonanone) was manufactured by Chem Tica International, Costa Rica. In India it is supplied by Chemm Exports, Trichur. A trial was laid out at Agricultural Research Station, Aliyarnagar during December 1997 - June 1998 in a garden containing young palms (7 years). The trap unit consisted of plastic buckets (10 lit. capacity with lid) tied to the trunk of the palms approximately 3-5' from the ground level. The pheromone lure Ferrolure+ were fastened to the bucket lid. The bucket had three entry holes for the weevils to crawl in and was wrapped with the coconut fibers to provide grip for the alighting weevil. The food bait consisting of one kg of sugarcane molasses + 5 grams of yeast + 5 ml of Glacial acetic acid, longitudinally split green petioles of coconut leaves (15 cm long) and soft portion of inner stem were placed in the bucket. The food

bait was mixed with 0.3% carbaryl so as to kill the trapped weevils. The bucket was serviced once in two weeks. The old lures were replaced with new ones as and when pheromones were exhausted. The trapped weevils were sexed and recorded every day and cumulative total for the fortnight was arrived.

RESULTS AND DISCUSSION

The number of red weevils trapped is furnished in the Fig. 1. During the first fortnight of

Fig. 1. Efficacy of Ferrolure* in trapping red palm weevil infesting coconut.



placement of the trap the catch was high as 49 weevils (32 females and 17 males) and during the second and third week the number of weevils trapped were 25 and 19 respectively. A sharp decline in the catch in the IV fortnight with only one weevil was due to exhaust of active ingredient in the sachets and it warranted replacement. On replacing there was a rise in the weevils trapped during sixth, seventh and eighth fortnight as 22 (13 females and 9 males), 30 (18 females and 12 males) and 21 (11 females and 10 males) respectively. The replacement of the pheromone was again done at the beginning of 10 fortnight after which the number trapped raised from 18 weevils in ninth fortnight to 32 weevils in tenth fortnight. During the entire period of study the number of females trapped were higher than the number of males trapped. Even as the lures were exhausting the catch did not come down drastically. Presence of food baits in the buckets attracted the weevils but at a lower level, this indicates the need for the food bait along with the synthetic lures. Addition of acetic acid (5 ml)

and yeast (5 gms/kg of sugar cane molasses and coconut stem logs) is essential for accelerating the fermentation which aids in higher catch of weevils. (Kurian *et al.*, (1982) and Rajamanickam *et al.*, (1995). Relatively higher catch during first two weeks of trap installation (49 weevils) may be attributed to the volatile emitted from the food bait in combination with Ferrolure* from the sachets. Though the food baits may be a case for the high initial attraction of Ferrolure* traps the substantial depletion in the catch during 2 and 3rd fortnight could not be rejuvenated to original attractancy as in first fortnight even after servicing the traps. Similar stand on reduction in catch was reported by Oelschalazer *et al.*, (1993).

This study has brought out the fact that the locally available materials when combined with synthetic pheromone lures had synergistic effect in trapping the red palm weevils, there by helping to monitor the pest and contain it in eco-friendly method.

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