

Standardising pheromone trap density for mass trapping red palm weevil in coconut

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India is the largest producer of coconut and it plays an important role in the daily life of the people earning an estimated 300 crores of foreign exchange (Rao, 2000). Red palm weevil (RPW) *Rhynchophorus ferrugineus* Olivier (Coleoptera: Rhynchophoridae) is a concealed tissue borer and a lethal pest of coconut. With the synthesis of the male produced aggregation pheromone "Ferrugineol" (4-methyl - 5- nonanol) by Hallett *et al.* (1993), food baited pheromone traps to manage RPW are widely used to mass trap the pest (Faleiro *et al.*, 2003). Currently, ferrolure+ is the most popular and widely used ferrugineol based pheromone lure. However, there is no information on number of traps to be used, per unit area and hence field trials were conducted.

In a 16 ha RPW infested coconut plantation in Goa (15° 30' N latitude and 75° 55' E longitude) between November, 1999 and June, 2002, wherein six trapping densities ranging from 2 traps/ha on the higher side to 1 trap/5 ha at the lowest trap density were evaluated. The trap consisted of a standard five litre, four window (1.5 X 5 cm²) bucket trap. Besides the pheromone (ferrolure 800 mg) manufactured by Chem Tica International, Costa Rica, the trap contained 200 g of kairomone releasing food bait (fresh coconut petiole bits), mixed in one litre of water containing 10 g of Carbofuran 3G. The synthetic pheromone and the food bait act synergistically, while the insecticide immobilises/ kills the trapped weevils. Traps thus prepared were set on the trunk of the palm at a height of 1m from the ground under the shade of palm canopy. All traps were serviced once a week when the number of weevils trapped were collected and the old food bait and insecticide solution was replaced.

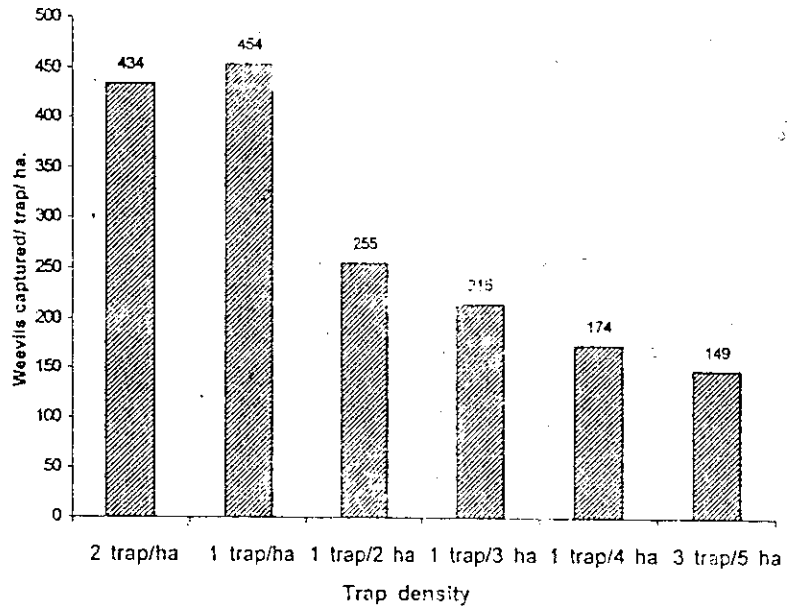


Fig. 1. Red palm weevil captures at different trapping densities (November, 1999 to June, 2002)

From the results presented in Fig. 1, it can be seen the weevil captures/ trap/ ha progressively declined from 1 trap/ha (454 weevils/ trap/ ha) to 1 trap/ 5 ha (149 weevils/ trap/ha). These clearly indicate that for mass trapping RPW in coconut a trap density of 1 trap/ha is optimum, and captures can be doubled by increasing the density to 2 trap/ha. It is significant to point out that at all the densities evaluated, the weevil captures were female dominated.

References

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