

IPM FOR COCONUT PEST

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AREA-WIDE MANAGEMENT OF RED PALM WEEVIL AND RHINOCEROS BEETLE IN COCONUT THROUGH IPM TECHNOLOGY

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PROBLEMS/CONSTRAINTS

Red palm weevil (RPW) *Rhynchophorus ferrugineus* (Coleoptera: Curculionidae) and rhinoceros beetle (RB) *Oryctes rhinoceros* (Coleoptera: Scarabaeidae) are the primary insect pest in coconut. RPW alone damages about 12% of young coconut palms in the age group of 5 to 20 years, and RB reduce the yield up to 10%. Implementing mechanical/physical/chemical control methods is very difficult due to the greater height of the palms (usually 10-20 m) and the non-availability of skilled labourers to execute the pest management practices in coconut plantations. Lack of awareness among the farmers on the use of IPM Technology.



INTERVENTIONS

A community-based extension approach was adopted and popularised the IPM technology for the management of RPW and RB during 2017-2019. Fifteen on-field demonstrations were conducted and covered approximately an area of 1000 ha both in the North and South Goa district. Farmers were trained and demonstrated on pheromone traps, food baits, trap servicing, lure placement, replacement and identification of weevil and beetle etc. Besides, 1000 Ferro lures and rhino lures with bucket traps were distributed to 300 farmers. Further, the farmers demonstrated other IPM practices like phyto-sanitation, prophylactic leaf axil treatment, use of entomopathogenic fungi and chemical control. NABARD funded this project.



Demonstration on use of pheromone traps and other IPM Technologies



Distribution of pheromone traps

IMPACT

Popularised pheromone-based IPM technology for the management of red palm weevil and rhinoceros beetle in coconut. An average of 80-90 % reduction of damage symptoms of red palm weevil and rhinoceros beetle was observed in pheromone implemented plantations compared to the pre-treatment observations. Thus continuous mass trapping of red palm weevil and rhinoceros beetle through pheromone technology followed by other IPM practices significantly reduces the infestations in coconut plantations. Enhanced the technical knowledge of coconut farmers on the use of pheromone technology through training and demonstrations. The maximum red palm weevil activity was observed during the post-monsoon period between October and November. In contrast, minor activity was noticed during the pre and monsoon period from April to June. The top attraction of the rhinoceros beetle was found during July and September. The weevil and beetle captured in the pheromone traps were female-dominated throughout the experimental period.

The reduction in cumulative damage due to the treatment was 9 %. The estimated loss per palm was Rs. 3000. The estimated gain due to the treatment was Rs 40500/ha. The cost of treatment per hectare was Rs 1500.

Area-wide community extension approaches in large scale adoption of pheromone-based IPM technology resulted in the successful management of RPW and RB in coconut. This technology could be further extended in other coastal areas or states with active involvement in the farming community.



Attracted beetles and weevils in the pheromone traps