INSECT PEST INFESTATION IN COCONUT GARDEN IN TIRUPATHUR DISTRICT

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Introduction

Coconut crop is being cultivated in an area of 10626 ha with average productivity of 2979 lakh nuts /ha. In Tirupathur District, coconut cultivation is carried out in six blocks *viz*., Tirupathur, Kandili, Jolarpet, Natrampalli, Madhanur and Alangayam blocks. Coconut crop is attacked by numerous insects *viz*., Rhinoceros beetle, *Oryctes rhinoceros*, red palm weevil, *Rhynchophorus ferrugineus,* black headed caterpillar, *Opisinia arenosella* and whitefly complex throughout the year causing considerable yield losses and the incidence is more during hot summer months.

Body

Insect complexity with hidden nature of damage and tall nature of coconut makes more complex with management options. Inspite, of recent technological innovations also, the major loss in coconut is faced by the farmers because of poor nutrition and management. Moreover, many of the small and marginal farmers are not able to meet out the cost of pesticide and inorganic fertilizers and the spray due to increased cost of plant protection chemicals and the height of the crop remains a constraint in imposing the chemical treatments. Biological control is an alternative approach to the chemical insecticides and it may be a safe, effective and ecofriendly method for coconut insect pest management.

Large scale adoption of biocontrol is still in an infancy stage due to non-availability of biocontrol agents Hence, the livelihood of coconut farmers could be increased with promotion of knowledge on adoption of existing timely management tools. It is therefore imperative to adopt crop pest calendar approach for higher production of coconut and possible only with sensitization and adoption of ecosmart technologies to coconut growers in major coconut growing areas of Tirupathur District. Hence, survey was made in all blocks of Tirupathur district (Table 1) to assess the incidence of major insect pests *viz*., rhinoceros beetle, whitefly complex, black headed caterpillar and red palm weevil in 10 different locations comprising of six villages. The incidence of rhinoceros beetle was found to be lowest in Mittalam village (4.0 %) followed by 8.0 per cent damage in Perumapattu, Thamakamalimuthur, Athurkuppam, Mittalam and 12.0 percent damage were reported in Thirilayam and Ilayanagaram. The whitefly complex incidence varied from 8.0 - 20.0 per cent, black headed caterpillar incidence varied from 8.0 – 44 .0 per cent and redpalm weevil incidence varied from 4.0 – 12.0 per cent (Fig 1). Based on the incidence of insect pests, the following control measures were sensitized and demonstrations were made for the benefit of the coconut growers.

Insect pest	Recommendation
Black headed caterpillar	Removal and destruction of affected leaflets Installation of one light trap per acre Release of Braconids @ 21 pockets per acre at 21 days interval
Whitefly complex	Installation of yellow sticky trap @ 8 Nos per acre Insecticidal application has to be avoided so as to increase *Encarsia* activity Release of *Encarsia* @ 10 leaf bits per acre When population is heavy, spraying of water using power operated sprayer Spray of 1kg maida mixed with 5 litres of water and made upto 20 litres will remove the sooty mould To encourage activity of parasitoids, planting of banana or Annona @ 20 Nos
Rhinoceros beetle	Removal and destroy of grubs in manure pits and application of *Metarrihizium anisopliae* @ $5x10^{11}/m^3$ Application of NSKE powder (50 g) + sand (100 g) in the crown region Installation of pheromone trap (Rhino lure) @ one /ha outside the coconut garden or Castor cake (1 kg) and Yeast (5 g) mixed with 5 litre of water for attraction of adults Installation of light trap @ one per acre

Conclusion

Large scale adoption and sensitization of biocontrol approach for higher production of coconut-to-coconut growers in major coconut growing areas of tirupathur district will pave way to improve the livelihood of coconut growers.

Table 1. Status of insect pest infestation in six blocks of Tirupathur district

Blocks	Villages	GPS Co-ordinates	Rhinoceros beetle (% incidence)	White fly complex (% incidence)	Black headed caterpillar (% incidence)	Red palm weevil (% incidence)
	Perumapattu	12.5271N 78.6482E	8.0	16.0	12.0	4.0
	Perumapattu	12.5379 N 78.5464 E	8.0	12.0	8.0	8.0
Kandili	Matrapalli	12.4320 N 78.5963 E	12.0	20.0	12.0	12.0
Jolarpet	Thamakamalimuthur	12.5447 N 78.5574 E	8.0	12.0	16.0	8.0
	Thirilayam	12.5364 N 78.5683 E	12.0	12.0	16.0	4.0
Natrampalli	Athurkuppam	12.5904 N 78.5506 E	8.0	16.0	20.0	8.0
Madhanur	Mittalam	12.8409 N 78.6686 E	8.0	20.0	24.0	4.0
	Mittalam	12.8243 N 78.6924 E	4.0	8.0	8.0	4.0
	Mittalam	12.8165 N 78.6981 E	8.0	8.0	16.0	12.0
Alangayam	Ilayanagaram	12.7093 N 78.6141 E	12.0	16.0	44.0	12.0

Fig 1. Status of coconut insect pests in Tirupathur district