

Efficacy of Low Cost Pheromone Lure (Ferrugineol) Against Red Palm Weevil in Coconut

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The red palm weevil, *Rhynchophorus ferrugineus* F. is the most noxious pest of young palms of coconut, oilpalm and date palm. Red palm weevil is a concealed tissue borer and hence this infestation leads to death of the affected palms. An integrated pest management schedule including baiting and trapping with food lure was developed to manage this pest effectively in the coconut plantations (Abraham et al., 1989). Effect of commercial formulations of synthetic aggregation pheromone Ferrolure⁺ in the management of red weevil infesting coconut in Tamil Nadu was reported by Rajamanickam *et al.* (2000). Hence this study was initiated to evaluate the low cost pheromone lure developed by CPCRI against red weevil in Pollachi tract of Tamil Nadu in a garden having young palms.

Field evaluation trial was conducted at eleven locations in Pollachi tract of Tamil Nadu during the period from November 2001 to February 2002. Chemically synthesized low cost CPCRI pheromone lure (ferrugineol, 4 methyl – 5 nonanol) liquid in glass capillary dispenser vial containing 0.2 ml (200 μ l;

0.157g) with food baits was used. The trap unit consisted of plastic bucket tied to the trunk of the palm 3 to 5' above the ground level. The CPCRI pheromone lure (after opening the dispenser lid) were fastened to the bucket lid. The bucket has three entry holes for the weevils to crawl in and was wrapped with the coconut fibers to provide grip for alighting weevil. The food bait consisting one kg of sugarcane molasses + 5 gms of yeast + 5 ml of glacial acetic acid 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 2 weeks. The trapped weevils were sexed and recorded every day and cumulative total for the fortnight was arrived.

It is evident from the table.1 that during the first fortnight of installation of the trap, the catch was 23 (16 females & 7 males), 18 (13 females & 5 males), 14 (10 females & 4 males), 11 (9 females & 2 males), 28 (19 females & 7 males) and 26 (18 females & 8 males) at Vettaikaranpudur, Sethumadai, Thattur, Anaimalai, Saralaipathy and C. palayam villages respectively. During second fortnight the catch

Table 1. Performance of low cost pheromone lure on trapping red palm weevil (November – February 2002)

Fortnight	Location																	
	Vettaikaran pudur			Sethumadai			Thattur			Anaimalai			Saralaipathy			C. palayam		
	.	♀	Total	.	♀	Total	.	♀	Total	.	♀	Total	.	♀	Total	.	♀	Total
I	7	16	23	5	13	18	4	10	14	2	9	11	9	19	28	8	18	26
II	10	23	33	7	16	23	9	20	29	4	10	14	11	22	33	12	26	38
III	6	14	20	6	10	13	7	18	25	3	9	12	8	15	23	7	16	23
IV	5	12	17	2	6	8	6	10	16	4	7	11	6	13	19	6	14	20
V	3	7	10	1	4	5	5	9	14	3	5	8	4	9	13	4	11	15
VI	1	3	4	-	2	2	2	4	6	1	2	3	2	3	5	1	4	5
VII	-	1	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-

Table 2. Performance of low cost pheromone lure on trapping red palm weevil (November – February 2002)

Fortnight	Location														
	Chinnakombu			Kottur			N.G.Pudur			Narikalpathy			Aliyar		
	.	♀	Total	.	♀	Total	.	♀	Total	.	♀	Total	.	♀	Total
I	3	9	12	2	7	9	1	4	5	2	6	8	1	4	5
II	5	14	19	6	16	22	3	9	12	4	9	13	7	16	23
III	4	12	16	5	13	18	4	8	12	3	12	15	6	19	25
IV	2	7	9	3	7	10	2	7	9	1	9	10	4	15	19
V	1	4	5	1	4	5	1	3	4	1	4	5	2	6	8
VI	-	1	1	-	1	1	1	2	3	1	2	3	-	1	1
VII	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-

was invariably higher 33 (23 females & 10 males), 23 (16 females & 7 males), 29 (10 females & 24 males), 14 (10 females & 4 males), 33 (22 females & 11 males) and 38 (26 females & 12 males) in the above mentioned six villages respectively. From third fortnight onwards, there was slight decline in the catch in all the six locations. From third fortnight to fifth fortnight, appreciable numbers of weevils were trapped. A sharp decline in the catch in the sixth fortnight with few weevils was due to exhaust of active ingredient in the capillary dispenser and it warranted replacement. A similar trend (Table.2) was also observed in other locations viz., Chinakombu, Kottur, N.G.Pudur, Narikalpathy and Aliyar. During the entire period of study, the number of females trapped higher than the males trapped. Presence of food baits in the buckets attracted the weevils but at a lower level, this indicates the need of food bait along with synthetic pheromones. Addition of acetic acid (5ml) and yeast 5gm/kg of sugarcane molasses is essential for accelerating the

fermentation, which aids in higher catch of weevils (Rajamanickam *et al.*, 2000). Thus low cost aggregation pheromone Ferrugineol synthesized by CPCRI is highly effective in trapping weevils in the field particularly in combination with food source in a Eco-friendly manner.

REFERENCES

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