Prevention of Red Palm Weevil Entry into Coconut Palms Through Wounds

COCONUT palms belonging to the age group of five to twenty years are highly susceptible to the attack of the red palm weevil, *Rhynchophorus ferrugineus* Fabr. Cut ends of leaf petioles and wounds caused in different ways like attack by the rhinoceros beetle, lightning strike, bud-rot, cutting steps on the trunk, etc., are the favourite sites of oviposition by the female weevils. Ayyar (1940) recommended the treatment of wounds with repellents like tar and phenyl. Leefmans (1920) suggested, as preventive measures avoiding of wounds in the cortex of the young palms, and cutting of leaf stalks or spathes, tarring of accidental wounds, etc. Laboratory and field experiments were carried out at the Central Coconut Research Station, Kayangulam, Kerala State, to find out the efficiency of tar and BHC in preventing or reducing the entry of the pest through wounds. The results obtained from this experiment is reported here.

Tar, 5 per cent BHC dust and combination of BHC and tar (10 g BHC mixed in 50 ml tar) were tested. 5-adult red palm weevils (3 females and 2 males) were enclosed in bell jars, on peeled coconut petioles treated with (i) tar, (ii) BHC, (iii) BHC *plus* tar and (iv) untreated petioles as control. Observations on normalcy, paralysis and mortality of adults and number of eggs or larvae present inside the petiole were recorded seven days after liberation (caging). Table I shows the data obtained from the laboratory studies which were replicated five times. It may be seen that tar was not effective in preventing the adult weevils from laying eggs on the treated petiole. Egg and larval population in petioles treated with tar and untreated petiole were more or less the same. But in BHC and BHC *plus* tar combination treatment, neither eggs nor larvae were present in the petiole and the adults were all dead. In the former case (in tar treatment) adults were normal.

A field trial was also conducted using the same treatments. Coconut leaves were cut at 60 cm away from their bases on the trunk and to a length of 7·5 cm from the tip and treated. Five adult weevils were liberated on each petiole and caged. This was also replicated five times. The data obtained from these studies are also included in Table I. Here also adults in the control and tar treatment were normal (except 2 paralysis in tar treatment) and eggs and larvae were present. In BHC or BHC

TABLE I

Results of the laboratory and field tests on prevention of red palm weevil entry into coconut palms through wounds

Treatment	Stages of the pest present				Condition of the adult weevils					
	Laboratory		Field		Laboratory			Field		
	Egg	Larva	Egg	Larva	Normal	Para-lysed	Dead	Normal	Para-lysed	Dead
Tar ..	99	95	83	57	25	..	..	23	2	..
BHC ..	0	0	0	0	..	..	25	..	..	25
Tar *plus* BHC	0	0	0	0	..	..	25	..	2	23
Control-untreated	120	101	110	72	25	..	..	25	..	..

Note : Each Fig. is the average of 5 replications.

plus tar combination treatment no egg or larva was present and the adults were all dead.

These two studies show that tar alone is not effective in preventing the pest from egg-laying on wounds. But BHC or BHC *plus* tar combination is equally good in preventing the entry of the pest. This is perhaps due to the fact that tar acts as a good base for the BHC to adhere to the wound.

The author is grateful to Dr. S. B. Lal, Director, and Dr. Chandy Kurian, Entomologist, Central Coconut Research Station, Kayangulam, for their valuable guidance during the investigation and for correcting the manuscript.

V. A. ABRAHAM

Entomology Section
Central Coconut Research Station
Kayangulam.

REFERENCES

AYYAR, T. V. R., 1940, *Hand-Book of Economic Entomology for South India*, Government Press, Madras.

LEEFMANS, S., 1920, De Palmsnuitkever (*Rhynchophorus ferrugineus*) Oliv-Meded Inst., Platen No. 43. (*Vide Rev. Appl. Ent.* A IX, 1921): 297–299.