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# 'CONTAIN' COCONUT ROOT (WILT) DISEASE BY ERADICATION OF DISEASED PALMS

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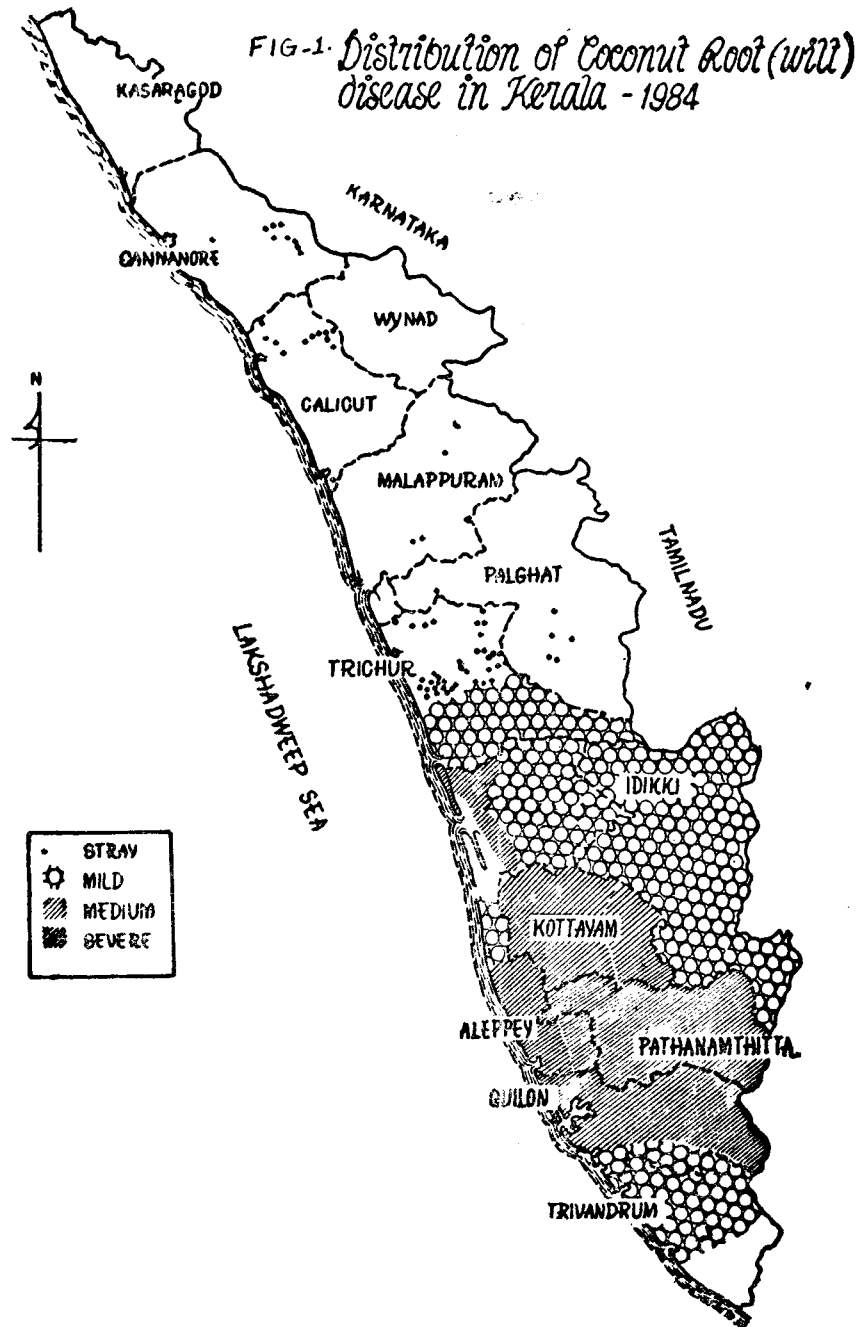
Central Plantation Crops Research Institute

## INTRODUCTION

The coconut root [wilt] disease, a major malady of the coconut crop in Kerala is characterized by its sporadic occurrence, contagious nature and debilitating effect. The disease was originally located in three pockets in south Kerala a century ago. By 1973, it had spread to an area of 2.5 lakh hectares extending from Trivandrum to Trichur district. <sup>4</sup> The possibility of checking the spread of the disease was first attempted in 1971, by eradication of diseased palms from two isolated pockets, one at Shencottah [Tamil Nadu] and another at Nadathra [Kerala]. Reappearance of the disease was not noticed for 11 years <sup>2</sup>. Large scale trials on eradication "to contain the disease" was initiated in 1979 with the establishment of a Field Station in Trichur district. Lightly disease affected parts of Mukundapuram taluk and Trichur taluk consisting of 8 villages along an east-west belt with Karuvannur river and Amballur-Palappilly road as the southern boundary formed the initial area of operation. Later the programme was extended northwards with the detection of disease in the different districts.

## SURVEY

Incidence of the disease in the Karuvannur belt was assessed



during 1979 to a depth of 3 to 5 km in 8 villages and in two more villages in 1980. In 1981, the disease was detected in isolated villages 20 to 30km away from the belt<sup>5</sup>. In view of the scattered and wide spread occurrence of the disease a rapid survey of the area upto & 5 km beyond Bharatapuzha was undertaken in 1981. This was followed by comprehensive surveys in 1982 and 1983 with the active support of the Kerala Agriculture Department and Kerala Agricultural University. So far the disease was found to exist in 75 villages in Trichur, Palghat, Malappuram, Kozhikode and Cannanore districts. [Table 1, Fig. 1 to 6]. The diseased palms vary from one to a few hundred per village.

## ERADICATION AND SURVEILLANCE

The diseased palms located in the belt in 1979 were eradicated in the same year. This programme was continued as and when disease was located elsewhere. Periodical check on the reappearance of the disease in all the affected gardens was followed by removal of the diseased palms. By December 1984 a total of 1446 diseased palms were cut and removed.

Evaluation of the data relating to 1979 in the belt indicates that, of the 156 affected gardens 151 are now free of disease [Table II]. During the course of 5 years in 39 gardens disease recurred involving 96 palms. The highest recurrence of disease namely, 31

gardens & 81 palms was noticed in Varandarappilly which recorded the highest disease incidence in 1979. Of these, three gardens developed the disease throughout the period of observations, while in the other gardens the gap between eradication and recurrence of disease ranged from 1 to 3 years.

Results of eradication away from the belt in the different districts during 1980-82 were also encouraging. Recurrence of the disease was noticed only in one village in Trichur district [Table III].

A critical study of the data reveals that the reappearance of the disease is related to the original population of diseased palms in a particular area, as well as the adjacent area [Table IV].

FIG.-2. DISTRIBUTION OF COCONUT ROOT (WILT) DISEASE NORTH OF THE PROTECTIVE BELT IN TRICHUR DISTRICT

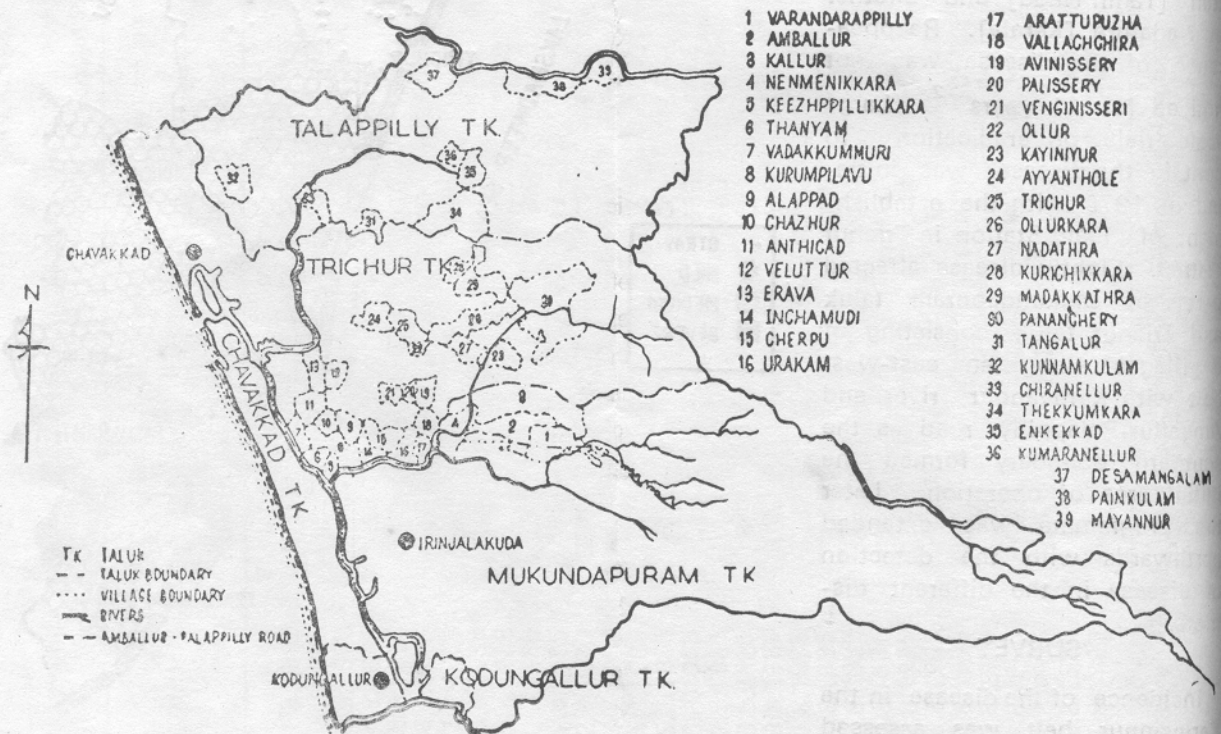
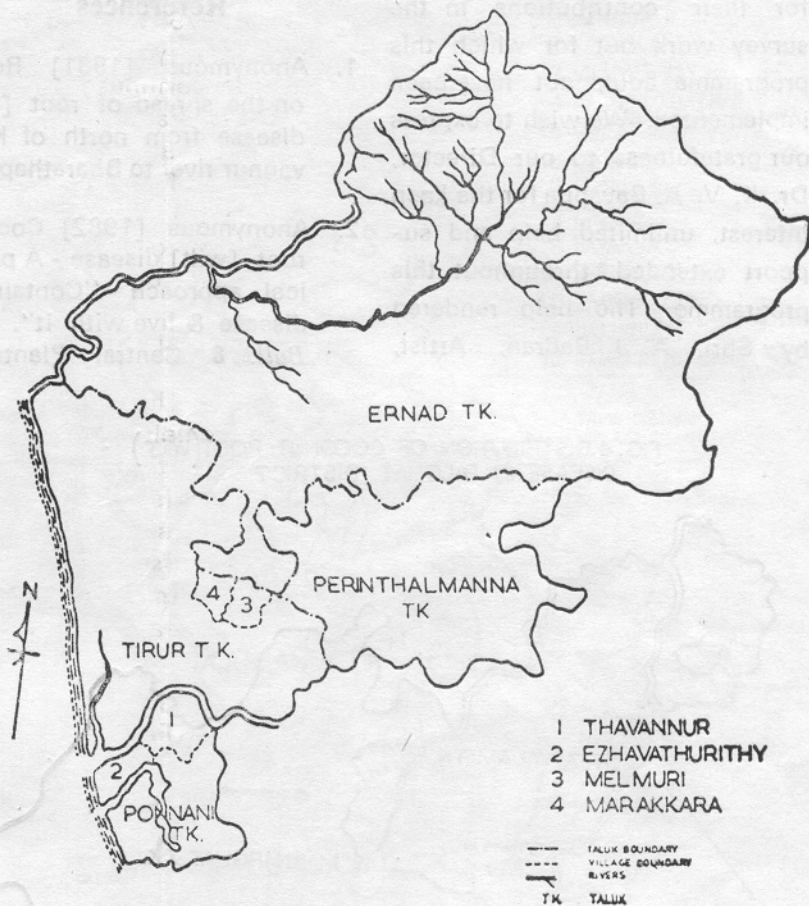


FIG. 3. DISTRIBUTION OF COCONUT ROOT (WILT) DISEASE IN MALAPPURAM DISTRICT



### CONCLUSION

The widely distributed occurrence of coconut root [wilt] disease in the northern districts of Kerala recorded recently are reported to have been prevalent there for several years [3-40 years] according to the farmers of the respective areas. Considering the original detection of the disease in south Kerala in three pockets the incidence of the disease in north Kerala may be considered as independent outbreaks rather than spread. Assuming it to be so, the effect of eradication of diseased palms may also be localised.

The garden wise/village wise data on the reappearance of disease positively recommend eradication of diseased palms in

isolated locations and mildly affected areas. Notwithstanding the influence of large population of disease affected palms in the belt area the disease incidence could be reduced considerably by repeated roguing. The beneficial effect is pronounced where the disease is scattered and of low intensity. The basic requirement of hygiene and sanitation for checking a contagious disease is achieved by the elimination of the affected palm *in situ* and thus serve to reduce the chances of spread. In general,

the available information emphasizes the advantage of eradication of disease affected palms from isolated locations to 'contain' the disease until specific control measures are evolved for this malady.

### ACKNOWLEDGEMENT

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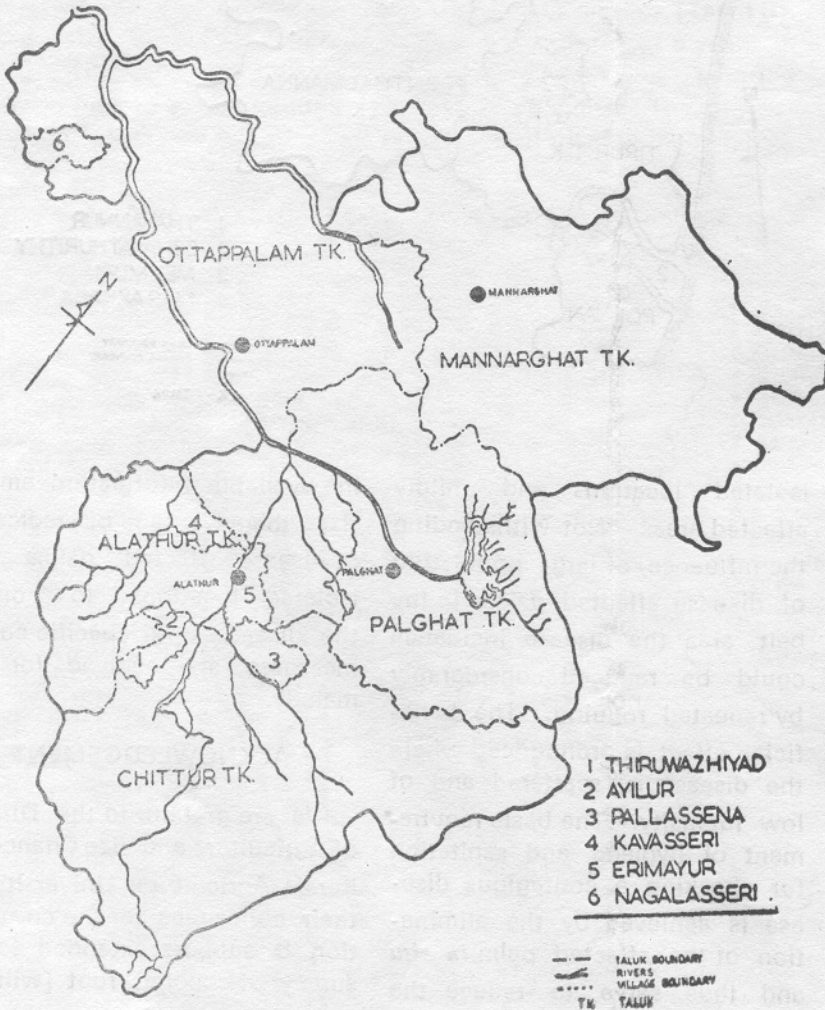
CPCRI Regional Station, Kayangulam in the preparation of the figures is also acknowledged.

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FIG.4.DISTRIBUTION OF COCONUT ROOT(WILT) DISEASE IN PALGHAT DISTRICT

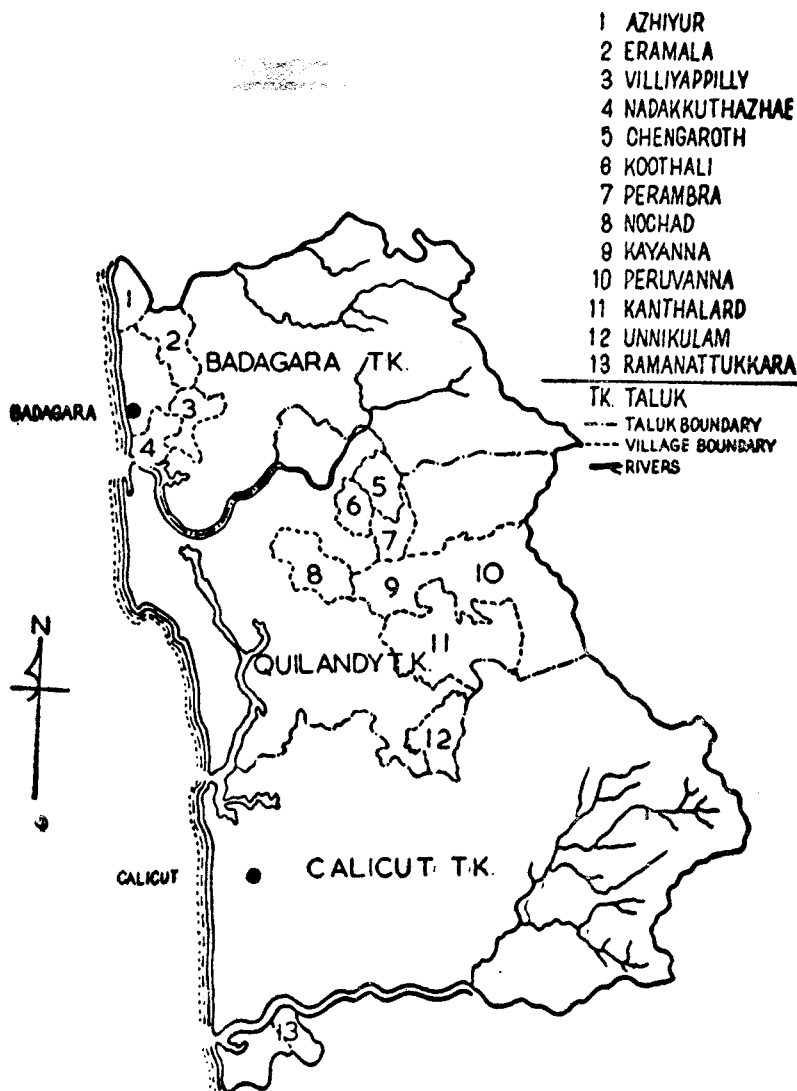


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FIG. 5. DISTRIBUTION OF COCONUT ROOT (WILT) DISEASE IN CALICUT DISTRICT



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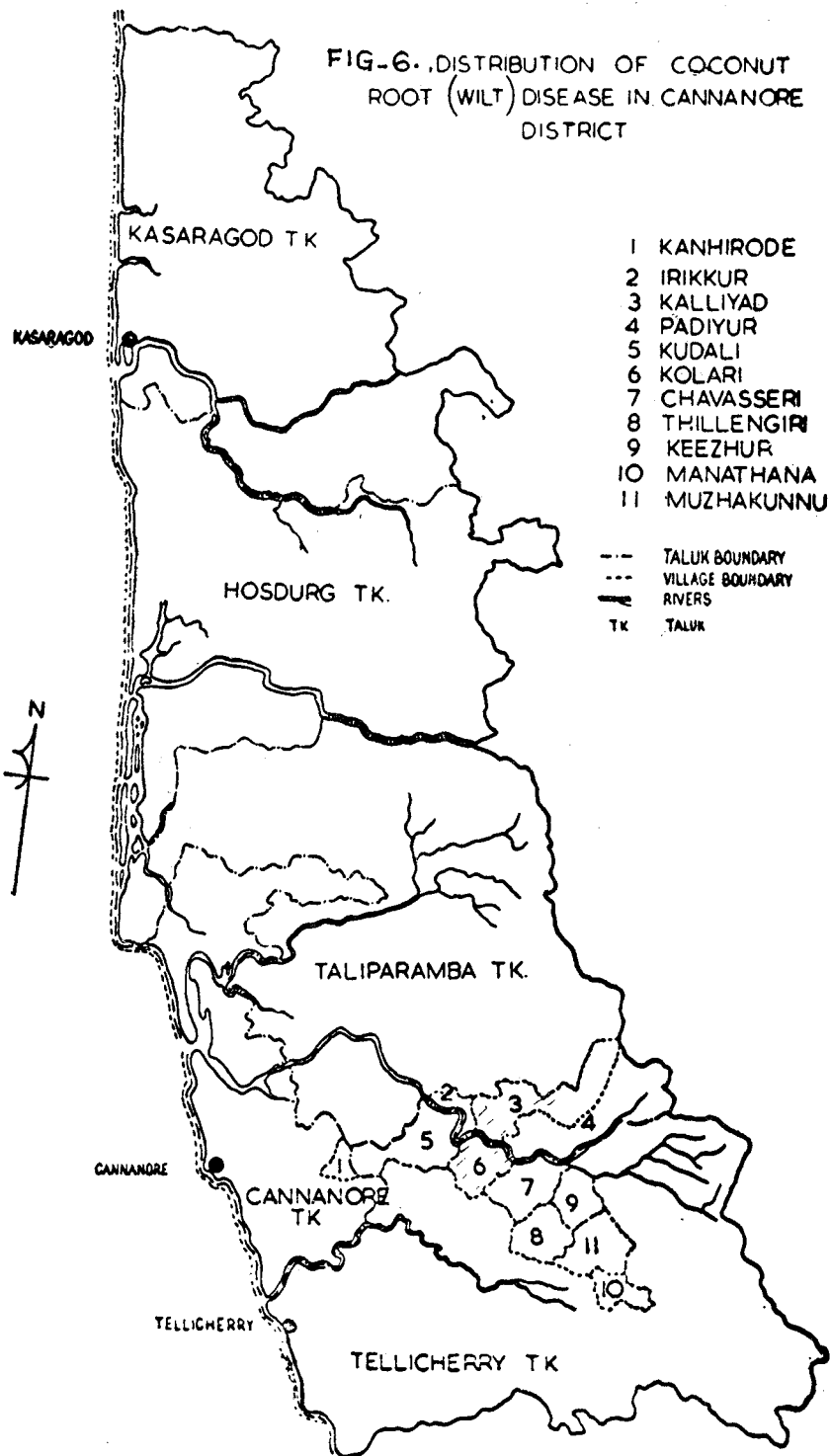
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**Table I**

Details of coconut root (wilt) disease in Trichur, Palghat, Malappuram, Kozhikode and Cannanore districts (1979-84)

Districts	No. of disease affected:		
	villages	gardens	palms
Trichur	39	532	1315
Palghat	6	11	37
Malappuram	4	33	56
Kozhikode	13	79	163
Cannanore	13	312	1122
<b>Total</b>	<b>75</b>	<b>967</b>	<b>2693</b>



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**Table II**

Effect of eradication of diseased palms on recurrence of disease in Karuwanur belt  
in Trichur district [5 years]

Villages	Disease incidence			
	1979		1984	
	No. of affected		No. of affected	
	Gardens	Palms	Gardens	Palms
Varandarappilly	78	175	5	8
Amballur	43	66	—	—
Kallur	5	9	—	—
Arattupuzha	2	9	—	—
Urakam	4	6	—	—
Inchamudi	2	3	—	—
Kurumbilavu	5	8	—	—
Keezhpullikkara	17	24	—	—
<b>Total</b>	<b>158</b>	<b>300</b>	<b>5</b>	<b>8</b>

**Table III**

Effect of eradication of diseased palms on recurrence of disease in the different  
districts - away from the belt - 1980-82

District	No. of disease affected					
	1980-82			1984		
	Village	Garden	Palms	Village	Garden	Palms
Trichur	21	132	351	1	3	3
Palghat	5	11	27	0	0	0
Malappuram	2	3	3	0	0	0
Kozhikode	8	30	48	0	0	0

Table IV

Effect of density of diseased palms on recurrence of disease

[a] along the belt [b] away from the belt

Density of diseased palms	Along the belt			Away from the belt		
	1979-82	1984	1984	1981-82	1984	1984
	V	G	P	V	G	P
1-10	2	5	6	28	36	50
11-20	—	—	—	2	11	24
21-100	6	129	267	4	16	24
Over 100	2	199	490	2	12	16
				1	41	180
					1	3
					3	3

V-Village G-Gardens P-Palms