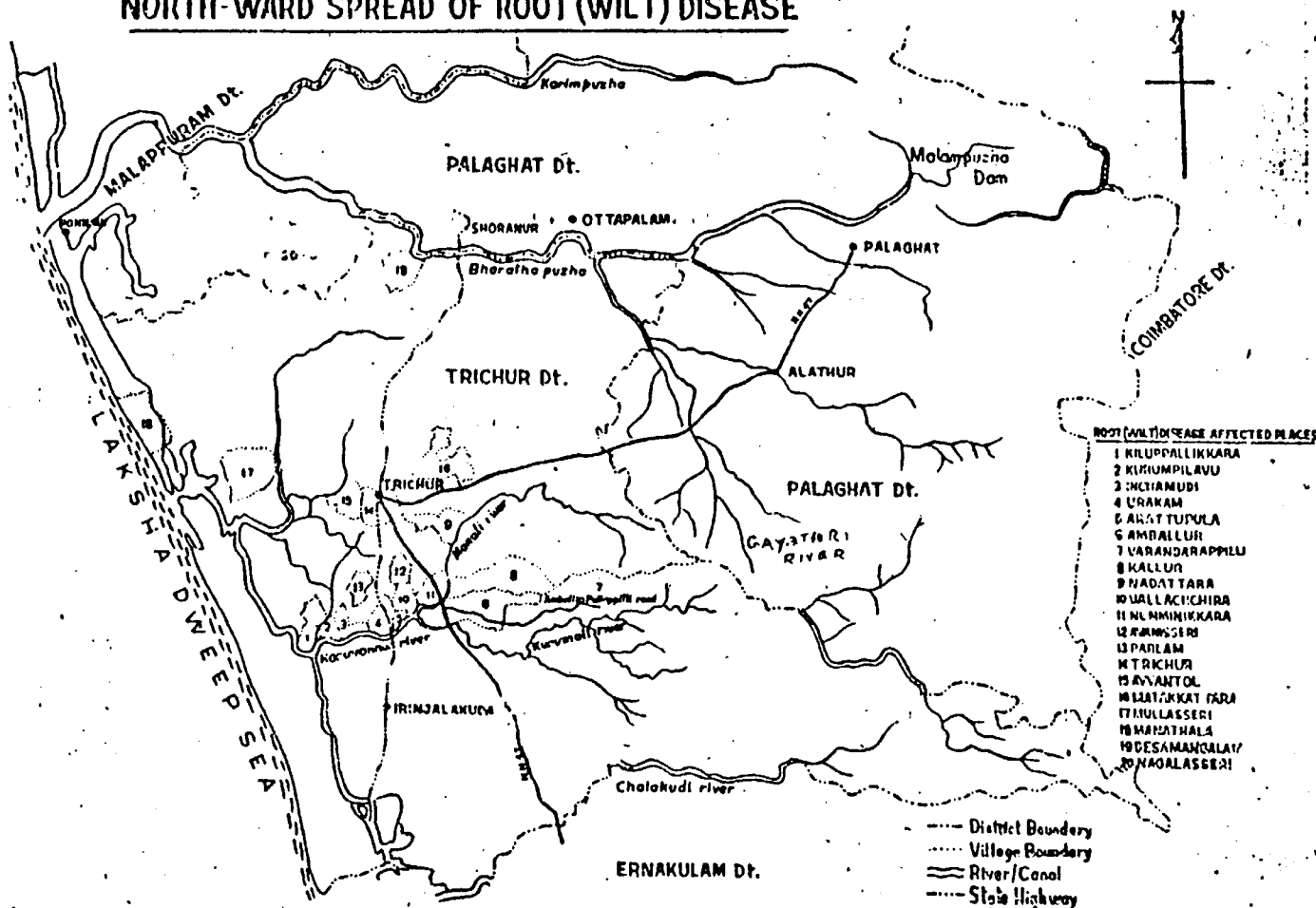


NORTHWARD MARCH OF COCONUT ROOT (WILT) DISEASE IN KERALA

K. RADHA, P. RETHINAM AND M. KOCHU BABU*

NORTH-WARD SPREAD OF ROOT (WILT) DISEASE



INTRODUCTION

Comprehensive survey conducted on the distribution of coconut root (wilt) disease till 1972 by Gopinathan Pillai *et al* showed sporadic occurrence of the disease in southern part of Trichur district confined to a few villages in Mukundapuram, Trichur and Chavakkad taluks. With the objectives of containing the diseases or at least retarding the north-

ward spread of the disease an eradication programme was taken up by the C.P.C.R.I. in consultation with the Kerala Agricultural University, Kerala Agricultural Department and the then Coconut Development Council in 1978. The idea was to cut and remove all the diseased palms north of the Protective Belt maintained by the Kerala Agricultural Department to get rid of the source of the disease. This area roughly worked out as the villages on the

*Central Plantation Crops Research Institute, Field Station, Irinjalakuda, Kerala, India.



Root (wilt) diseased palm with Leaf-rot in Ayyenthol

northern part of the Karuvannur river and Amballur—palappally road i.e. Killupallikara, Kurumbilavu, Inchamudi, Urakam, Arattupuzha, Kallur and parts of Amballur and Varandarappilly. The survey for locating the diseased palms was initiated in this belt of 35 km length from the junction of the Kanoli canal and the Karuvannur river in the west to the foot hills of the Palappilly ranges in Varandarappilly in the east and was later extended to the northern areas. The information collected so far on the incidence of root (wilt) disease are presented hereunder.

SURVEY

Three types of survey to locate disease affected palms were adopted. (1) Garden to garden survey to a depth of about 3 km along the northern bank of the Karuvannur river and to a width of 5 km along the Amballur—Palappally road, (2) rapid survey of the coconut gardens along canals and those bordering paddy fields and (3) survey of gardens in the vicinity of isolated pockets of disease.

1. Garden to garden survey

Coconut gardens in Killupallikara, Kurumbilavu, Inchamudi, Urakam and Arattupuzha on the side of the Karuvannur river as well as Vallachchira and part of Nemminikkara on the Manali river, a tributary of Karuvannur showed that the majority of the diseased palms are located on the river bank and only stray cases occurred towards the interior.

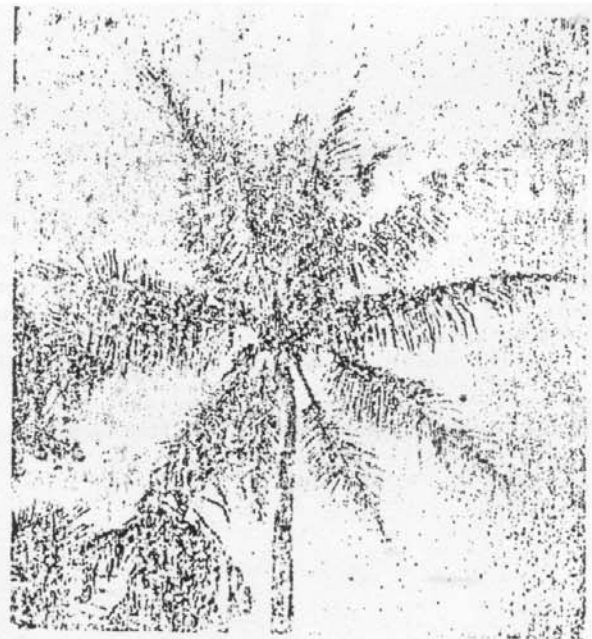
Amballur—Palappally road runs through Amballur and Varandarappilly villages and areas north of the road alone were surveyed. Incidence of disease was found to be high towards the east (foot hills) and in gardens bordering paddy fields. Further towards the north in Kallur only gardens on the eastern bank of the Manali river were found to be diseased (Table. 1 & Fig. 1).

Incidence of disease was the highest in Varandarappilly (243) closely followed by Amballur (145) while it was low in Kurumbilavu (16) and Inchamudi (3).

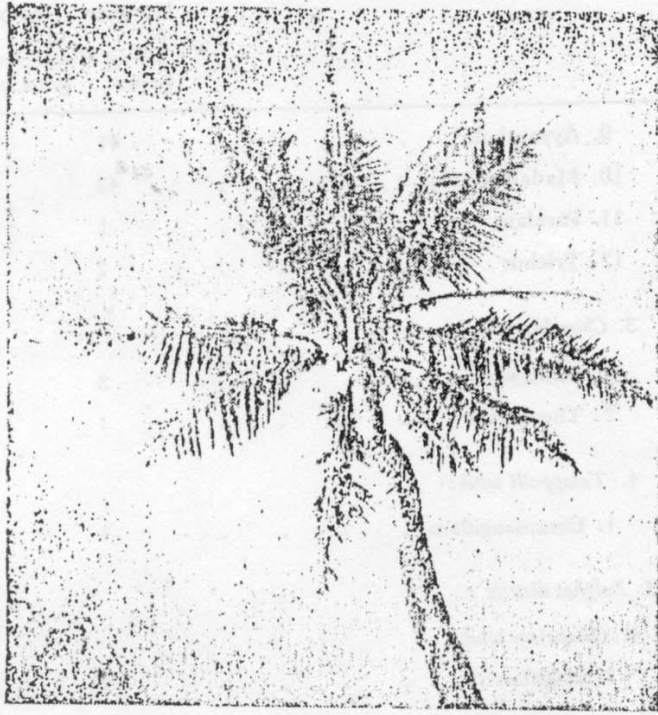
2. Rapid survey of coconut gardens

In response to the two reports received from the Department of Agriculture on some disease problem in Avinisseri and Madakkathra villages the gardens were visited with the concerned officials. In both instances the palms were observed to manifest typical symptoms of root (wilt) disease. An intensive survey at Avinisseri revealed that the disease broke out in one garden facing paddy field. At present 48 palms distributed in 10 gardens are diseased. Of these two gardens are severely affected having 18 diseased palms in one and 17 in another garden. In Madakkathra village 42 diseased palms distributed in 18 gardens also near paddy fields bordered by an irrigation channel from Peechi were located.

In the light of the occurrence of disease in these two villages which are located 10 to 40 km from the earlier reported disease affected belt a rapid survey of coconut gardens in similar situations, namely low lying gardens adjacent to paddy fields and canals,



Root (wilt) diseased palm at Trichur



Root (wilt) diseased palm with Leaf-rot in Desamangalam

were carried out upto Bharathapuzha. Disease incidence was not observed in Alapad, Anthikad, Pollu, Kanda ankadavu, Triprayar, Adat, Kanjani, Tolur and Kayamparambu towards the west of the State highway. A few cases of disease were noticed in Cherpu, adjacent to Urakam village (already diseased), Chenum, Cheruchenam and Paralam.

In Ayyanthole village adjacent to Trichur town towards the north west several gardens nearer to paddy fields were found to be severely affected. A total of 41 diseased palms in 11 gardens have been recorded. As many as 17 diseased palms occur in a single garden of half an acre extent (Plate 1). In Trichur town two palms adjacent to a water channel manifest all symptoms of disease (Plate 2). A few more in low lying areas also exhibit light symptoms of disease.

A few palms in Mullasseri and Thozhiyoor of Chavakkad taluk and Thalasari area of Desamangalam in Talappalli taluk have been observed in the northern most part of Trichur district.

In Desamangalam village disease incidence was noticed nearly 3 km south of Bharathapuzha in a single palm about 50 years old standing near a pond (Plate 3).

Nagalasseri village in Ottappalam taluk of Palghat district located south west of Desamangalam also was found to have two diseased palms about 20-25 years

old. The diseased palms grow on the edge of the garden facing paddy fields and a well:

CONCLUSION

Available information indicate that the disease has been prevalent in pockets north of Trichur for the past 6 to 10 years. According to the present owners of the garden at Desamangalam the abnormal condition of the palm, which was not recognised as a disease, was noticed over 10 years ago. In Ayyanthole it was reported that a few palms having symptoms similar to the disease, died six years back. Similarly at Madakkathra, the disease first occurred in a single palm nearly six years back and later spread to the neighbouring gardens. In Nagalasseri, Mullasseri & Thozhiyoor, the disease development appears to be more recent. Leaf rot disease was also noticed in several palms in Ayyanthole and the disease affected palms in Desamangalam and Nagalasseri.

In the light of the sporadic out-breaks of the disease in isolated pockets of comparable environment having water source connected to those in disease affected area namely Karuvannur river through Kanoli canal in the west and Gaatri river, a tributary of Bharathapuzha in the east which originates from Paravattani Hills at Karuvannur river, the possibility of further disease incidence in the northern parts of Trichur district and southern areas of Palghat districts covering 200 villages needs verification. The success of the eradication programme now in progress depends on the early detection of such pockets of disease and prompt removal of the diseased palms.

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- GOPINATHAN PILLAI, N., Lal, S.B., and Shanta, P. (1973). Distribution and intensity of root (wilt) disease of coconut in Kerala. *J. Plant Crops* 1 (Suppl) : 107-112.

TABLE I—Distribution of coconut root (will) disease affected palms.

	Number of diseased palms	Number of affected gardens
<i>I. Trichur district:</i>		
<i>1. Mukundapuram taluk:</i>		
1. Varandarappilly	243	98
2. Amballur	145	75
3. Kallur	15	7
<i>2. Trichur taluk:</i>		
1. Urakam	47	24
2. Arattupuzha	25	12
3. Kurumbilavu	16	12
4. Inchanudi	3	2
5. Killuppillikara	44	19
6. Vallachchira	2	2
7. Nemminikkara	37	13
8. Avinissery	48	10

TABLE I—Contd.

	Number of diseased palms	Number of affected gardens
9. Ayyanthole	41	11
10. Madakkathara	42	18
11. Paralam	1	1
12. Trichur	2	1
<i>3. Chavakkad taluk:</i>		
1. Mullasserri	3	1
2. Thozhiyoor	1	1
<i>4. Talappalli taluk:</i>		
1. Desamangalam	1	1
<i>II. Palghat district :</i>		
<i>1. Ottapalam taluk:</i>		
1. Nagalasseri	2	2