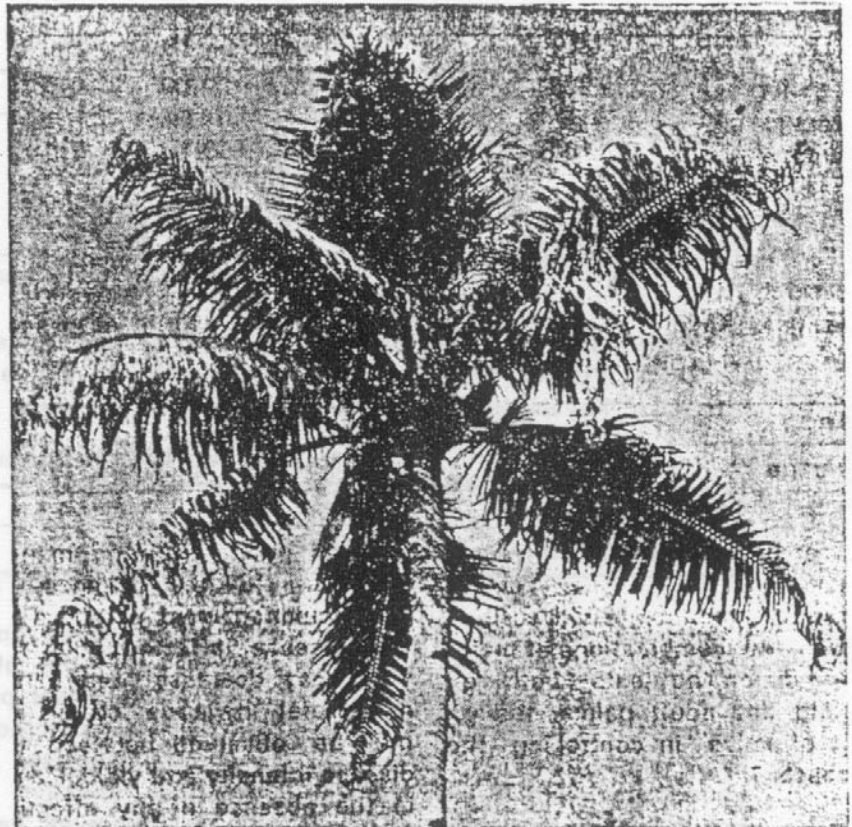


DECLINE IN YIELD AND THE EFFECT OF MANAGEMENT PRACTICES ON ROOT (WILT) AFFECTED COCONUT PALMS

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Root (wilt) is a devastating disease affecting coconut in central and southern districts of Kerala. The spread of the disease is either contiguous or sporadic and its occurrence is reported recently from Malappuram and Calicut districts. The disease is not lethal, but due to its debilitating effect colossal loss in yield is resulted and so this disease is a very serious problem to the coconut growers of Kerala. Once the palm is affected by the disease, there will be a gradual decrease in yield and ultimately the palm will become economically unproductive. But the rate of reduction in yield depends on many factors like the age of the palm at which it becomes diseased, management practices adopted and or availability of irrigation facilities. All these have prompted the study of relationship between disease intensity and



yield of root (wilt) affected coconut palms.

The disease intensity and yield distribution of 12-year-old 130

West Cost Tall (WCT) palms and another group of 94 palms in the age group of 20-30 years were studied at CPCRI (Regional Station), Kayangulam. In both the groups of palms disease intensity ranged from 20 to 60. Correlation coefficients were worked out between the disease intensity and yield. Significant negative correlations were observed for both the sets of palms. This confirms the already known fact that the disease has definitely a decreasing role in the production of coconut, but the percentage of variation as explained by r^2 is only 9.6 in the case of young palms and 22 in the case of older palms which indicates that the reduction in

yield due to disease intensity is more pronounced in older palm than in younger one.

Even though the yield has a negative correlation with the intensity of disease, it may be possible to increase the yield, since the percentage of variation in yield due to the intensity of disease is evidently less. Significant negative correlation observed may be due to the fact that some of the palms in advanced stage of the disease have very low yield; probably these palms might have contracted the disease much earlier. When the palms get the disease at a later stage either after the commencement of flowering or after yield stabilisation,

they may produce satisfactory yield under proper management, in spite of the disease.

A study of 10 disease affected palms over a period of 6 years at Haripad near Kayangulam showed that though the disease intensity has increased from 23.7 to 34.23 the yield level has maintained from 1977 to 1981 except in the year 1979 which may be due to some other climatic and environmental factors (Table - 1). These palms were subjected to the management practices of application of fertilizers as per recommendation and other cultural practices in the proper time.

Table 1. Mean disease intensity and yield of 10 palms

Years	1976	77	78	79	80	81
Disease Intensity	23.7	30.72	31.09	32.68	32.24	34.23
Average nuts/palm	16.3	29.0	29.1	14.1	26.3	28.3

Source : CPCRI (Research highlights, 1980)

Further in the Operational Research Project area at Memana near Kayangulam, increase

in yield to the tune of 160% was observed for a period of 5 years as a result of irrigat-

ion and manuring, as shown in Table 2.

Table 2. Mean yield per palm per year (Mean of 90 palms)

Years	1976	77	78	79	80
Average Yield (nuts/palm)	17.63	22.16	27.84	37.78	45.99

Source : C. P. C. R. I. (R. S.) Kayangulam

Increase in yield of palms was also recorded in several manurial experiments with various doses and combinations of major and minor nutrients both on young and adult palms, though not effective in controlling the disease.

From the above results, it can be observed that it is possible to increase the yield of disease

affected palms by good management. In the absence of proper management practices for the disease affected palm the yield may decrease and hence a general negative correlation may be observed between the disease intensity and yield. Hence in the absence of any effective control measures for the eradication of the disease, disease management is the only possible

alternative. Since the decline in yield in the case of younger palms is less as compared to the older palms, it will be more economic to rejuvenate the younger palms than the older disease affected palms, by adopting good management practices of manuring at appropriate time with recommended dose and adopting other cultural practices.