

The coconut root (wilt) disease which was recorded around 1882, has a geographical delineation which restricts its occurrence in a contiguous manner in the eight southern districts of Kerala, stretching from Trichur in the north to Trivandrum in the south. The occurrence in the remaining areas in the State as well as in the adjoining districts of Kanyakumari and Coimbatore of Tamil Nadu is sparse. According to the estimate made in 1984, the annual loss caused by the disease was 968 million nuts in Kerala. Exhaustive studies have clearly indicated that the earliest consistent visual symptom of root (wilt) disease is the flaccidity of leaflets. Serological and physiological tests are available for the identification of the diseased palms before the onset of visual symptoms.

The disease occurs in all soil types and the spread can be either contiguous or sporadic. Palms of all ages are susceptible to the disease and disease-free palms are observed in heavily diseased gardens in the contiguous core.

Systematic investigations over a period of years have ruled out the role of any physiological/nutritional disorders as the primary cause of the malady. Several biotic agents like fungi, bacteria and nematodes have been reported to be associated, but none could produce symptoms characteristic of the disease. A viral etiology was presumed in the sixties; however, further studies have ruled out the association of any virus or

virus-like particles.

In the context, the consistent presence of mycoplasma-like organisms in the tissues of diseased palms and its total absence in the disease-free palms assumes significance. Support for the mycoplasmal etiology has emerged by the successful transmission of the disease with lace bug, under insect-proof conditions. Partial remission of symptoms observed consequent to the application of oxytetracycline lent additional support.

The health and yield of the root (wilt) diseased palms can be sustained by the adoption of integrated management practices. The palms in the advanced stages of the disease do not respond to management and juvenile palms that contract the disease before the onset of flowering do not bear properly. The strategy developed to combat the disease in the heavily affected contiguous tract therefore consists of eradication of advance diseased and unproductive palms as also young palms that have taken up the disease prior to flowering.

The earliest observation on the possibility of preventing the recurrence of the disease in a mildly affected area at Shencottah, Tamil Nadu, was made when three diseased palms were eradicated in 1971. Against the background, a massive effort was made by CPCRI in Trichur district to contain the disease in the contiguous core and to prevent its further

spread to newer areas. Results are promising when the foci of infection are removed by the eradication of all diseased palms. This strategy has been welcomed by the developmental agencies and is under operation.

The sero-diagnostic test developed for the detection of coconut root (wilt) disease before the onset of visual symptoms offers scope for sophistication. The possible application of ELISA and Western Blot Techniques for the rapid analysis of a large number of samples for diagnosis needs extensive trials. Monoclonal Antibody Technique by which MLO-specific clones are exclusively selected and propagated, is an area worth investigations. DNA hybridisation probes capable of detecting non-cultivable plant pathogenic mycoplasmas in plants and insects can be used for screening varieties for disease resistance and epidemiological studies.

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Host plant resistance seems to be the most promising and an ideal measure. Disease free, high yielding adult palms are often found in heavily diseased gardens. *Inter se* mating/selfing of these palms are adopted to generate progenies for further evaluation and selection. Apart from the experiments currently in vogue, the possibility of perfecting an *in vitro* screening technique is worth initiation. Attempts to screen against possible insect vector(s) can also be rewarding.

Environmental studies to identify factors responsible for the geographical delineation of the root (wilt) disease and management practices to modify the crop environment to make it less favourable for the pathogen or its vector, are areas that merit attention. Refinement of the existing management technology for reducing the cost in a manner beneficial to the farmers is a necessity.