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Research Article

Survey on the occurrence of root wilt disease of coconut in Tamil Nadu

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ABSTRACT

Root wilt disease (RWD) in coconut caused by an obligate Phytoplasma, is a serious problem in most of the coconut plantations of Kerala and is currently fast spreading and becoming serious production constraint in many districts of Tamil Nadu state. The survey for the occurrence of root wilt disease was conducted in Theni, Kanyakumari, Tirunelveli, Coimbatore and Dindigul districts along the borders of Kerala and Tamil Nadu states by cluster sampling technique. The results revealed that, Cumbum block of Theni District in Tamil Nadu was found to be heavily infected with root wilt disease. In Kanyakumari district, root wilt disease was noticed in Thiruvattar block. Early symptoms of root wilt disease was noticed in Dindigul District.

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INTRODUCTION

The occurrence of root (wilt) disease of coconut was first noticed in 1882 in Erattupetta area of Meenachil taluk in Kottayam District of Kerala state (Koshy, 1999). The disease is prevalent in a continuous manner in eight out of the fourteen districts in Kerala and sporadically in the remaining 6 northern districts of the State and bordering districts of Tamil Nadu such as Theni, Kanyakumari, Tirunelveli, Dindigul and Coimbatore districts. Mathew *et al.* (1993) reported a decline in yield to the tune of 45% in West Coast Tall variety and 60% in DxT hybrids and delayed bearing of seedlings that took up the infection.

The principal diagnostic symptoms of the disease is flaccidity (ribbing) of middle whorl leaves followed by yellowing and marginal necrosis of leaflets in the older leaves. The pathogen is transmitted by insect vectors such as lace bug – *Stephanitis typica* and plant hopper – *Proutista moesta* (Solomon *et al.*, 1999). Mycoplasma-like particles (phytoplasma) have been found in the sieve-tube elements of the phloem of coconut and other palms exhibiting characteristic symptoms (Beakbane *et al.,* 1972). Oxytetracycline treatment causes remission of disease symptoms (McCoy, 1975).

Since RWD is caused by phytoplasma, it is not amenable to conventional plant protection measures. Systematic rouging of diseased palms in the mildly affected areas could prevent further spread of the disease. Eradication of disease affected palms to contain the disease within contiguously infected geographic limits can be successful if continuous monitoring for occurrence of the disease and uprooting of suspected and diseased palms are taken up simultaneously. Hence, intensive survey was carried out in Tamil Nadu for the occurrence of root wilt disease in Tamil Nadu.

MATERIALS AND METHODS

The survey for the occurrence of root wilt disease was conducted in Theni, Kanyakumari, Tirunelveli, Coimbatore and Dindigul districts along the borders of Kerala and Tamil Nadu states by cluster sampling technique. Wherever the disease incidence was noticed, garden to garden survey was undertaken and individual tree infected with root wilt disease was identified. Disease incidence was worked out by counting the number of infected palms and healthy palms and expressed in terms of percentage.

RESULTS AND DISCUSSION

Survey on the occurrence of root wilt disease of coconut was conducted in Tamil Nadu - Kerala border areas of Theni, Tirunelveli, Kanyakumari, Dindigul and Coimbatore districts and the infection level are presented in Table 1. The results revealed that, Cumbum block of Theni District in Tamil Nadu was found to be heavily infected with root wilt disease. In