PRESENCE OF PHYTOPLASMA IN REPRODUCTIVE TISSUES AND DEVELOPMENTAL STAGES OF FRUITS OF 'WELIGAMA COCONUT LEAF WILT DISEASE' AFFECTED COCONUT PALMS

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Weligama Coconut Leaf Wilt Disease (WCLWD), thus called because of its first detection in Weligama, has affected a majority of coconut palms in the Southern province of Sri Lanka, since its first report in 2006. The causal agent has been identified as a phytoplasma, an obligatory, phloem limited plant pathogen. The present study investigated the presence or absence of phytoplasma in reproductive 1tissues of male and female flowers, developmental stages of fruits including 1, 4, 8 months old immature nuts and harvestable mature nuts of WCLWD affected coconut palms. A total number of sixty diseased and thirty healthy samples were taken for the study. Molecular detection method of Nested Polymerase Chain Reaction is highly sensitive and specific for detection of pathogens of low titre and therefore was selected for the analysis. The total genomic DNA was extracted by modified CTAB (Cetyl Trimethyl Ammonium Bromide) method. A 1.2 kb fragment of Phytoplasma 16S rDNA region was targeted and amplified by nested Polymerase Chain Reaction (PCR), using phytoplasma specific universal primer pairs of P1/P7 and Pc399/P1694. The PCR products were subjected to 1.5% agarose gel electrophoresis, stained with ethidium bromide and visualized by uv-transilluminater. None of the samples produced a 1.2 kb fragment. Therefore, the results revealed that there were no phytoplasma contaminations with the reproductive tissues and developmental stages of fruits of WCLWD affected coconut palms.

Key words: Coconut, Nested PCR, Phytoplasma, Reproductive tissues, Weligama Coconut Leaf Wilt Disease (WCLWD)