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An attempt to identify alternative hosts in coconut leaf wilt disease using PCR techniques

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Several syndromes of lethal yellowing type occur worldwide on coconut and other palm species. For most of them, phytoplasma are specifically associated with the syndrome. A yellowing of coconut fronds of the palms in the Southern part of Sri Lanka was observed in 2006. Intense yellowing in 10 – 5 fronds of the lower whorl was observed. Flaccidity and marginal necrosis of leaflets were also observed. The disease was named Weligama coconut leaf wilt disease (WCLWD) as it was first noticed from the Weligama area.

Identification of alternative hosts for WCLWD is of importance to support the control of the spread of the disease. 98 samples of 27 different plant species suspected as alternative hosts were collected from 13 different sites of the infected zone of WCLWD. DNA was extracted using a phenol based method and the universal phytoplasma primer pair F1 and R1 was used for direct Polymerase Chain Reaction (PCR). Amplified products were obtained from 50 samples out of the 98 samples. Nested PCR with phytoplasma specific primer pairs NGS for 1/NGS rev1 and NGS for2/ NGS rev2 resulted in amplified products from 4 out of 11 samples. Periwinkle, red palm, triangle palm and arecanut were identified as possible alternative hosts for WCLWD.

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