

# Molecular Detection of the Presence of Sugarcane Yellow Leaf Disease Phytoplasma and its Phylogenetic Relationship to White Leaf Disease Phytoplasma in Sri Lanka

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Yellow leaf syndrome (YLS) of sugarcane is a rising disease caused by a phytoplasma characterised by yellowing of the midrib of leaves. Samples with the typical symptoms of YLS were collected from different sugarcane growing areas in Sri Lanka. Genomic DNA extracted from each sample was subjected to nested PCR using P1/P7 and R16F2n/R16R2 for the detection of phytoplasma in diseased samples against a healthy sample. PCR products of two diseased samples were sequenced and phylogeny tree was constructed through MEGA 7.0 software using the neighbour joining method and with 1000 bootstrap replications. Nested PCR resulted 1.2 kb band in all symptomatic samples and it was not found in the healthy sample. The sequence and BLASTn analysis of 1.2 kb product of 16S rRNA gene fragments of two diseased samples shared 97.5% and 89% sequence identities, respectively with *Candidatus phytoplasma oryzae* (16 SrXI) and sugarcane white leaf phytoplasma associated with yellow leaf syndrome in Sri Lanka. Phylogeny analysis confirmed that the phytoplasma in YLS in sugarcane in Sri Lanka was closely related to 16 Sr XI group. This is the first report of association of 16Sr XI phytoplasma with sugarcane yellow leaf disease syndrome in Sri Lanka.

**Keyword:** *Candidatus* phytoplasma, Nested PCR, Sequencing, Sugarcane, Yellow leaf syndrome