

Detection and identification of aster yellows phytoplasma associated with lipstick yellow frond disease in Malaysia

ABSTRACT

Yellowing symptoms similar to coconut yellow decline phytoplasma disease were observed on lipstick palms (*Cyrtostachys renda*) in Selangor state, Malaysia. Typical symptoms were yellowing, light green fronds, gradual collapse of older fronds and decline in growth. Polymerase chain reaction assay was employed to detect phytoplasma in symptomatic lipstick palms. Extracted DNA was amplified from symptomatic lipstick palms by PCR using phytoplasma-universal primer pair P1/P7 followed by R16F2n/R16R2. Phytoplasma presence was confirmed, and the 1250 bp products were cloned and sequenced. Sequence analysis indicated that the phytoplasmas associated with lipstick yellow frond disease were isolates of 'Candidatus Phytoplasma asteris' belonging to the 16SrI group. Virtual RFLP analysis of the resulting profiles revealed that these palm-infecting phytoplasmas belong to subgroup 16SrI-B and a possibly new 16SrI-subgroup. This is the first report of lipstick palm as a new host of aster yellows phytoplasma (16SrI) in Malaysia and worldwide.

Keyword: 16SrI-B subgroup phytoplasma; *Cyrtostachys renda*; Lipstick palm; Malaysia; PCR; RFLP; Yellow frond disease