

## Molecular Detection and Confirmation of New Co-Occurring Whitefly Species in Coconut in Sri Lanka

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### Abstract

Identification of the species complex of a pest is necessary in an alien pest invasion. As whiteflies have not been widely reported in coconut in Sri Lanka, identification of the whitefly species is important. The present study was conducted for the molecular identification of the whitefly species in coconut in Sri Lanka. Whiteflies were collected from Gampaha district and were morphologically identified. Then the total Genomic deoxyribonucleic acid (gDNA) was extracted separately from them using the Cetyltrimethylammonium bromide (CTAB) method. The extracted DNA were subjected to polymerase chain reaction (PCR) using universal DNA primer pairs; LCO 1490 and HCO 2198. Amplification of partial mitochondrial cytochrome c oxidase subunit 1 (mtCOI) genes of total genomic DNA resulted in PCR product with a size of 658 bp and all the sequences were bidirectional Sanger sequenced. All the sequences were subjected to Nucleotide BLAST (BLASTn) similarity search through National Center for Biotechnology Information (NCBI) and found that they were 99-100% matched with the species identified morphologically. The species were *Aleurodicus rugioperculatus*, *Paraleyrodes minei*, *Aleurotrachelus atratus* and *Aleurodicus disperses*. The species *A. rugioperculatus*, *P. minei* and *A. atratus* are reported for the first time in Sri Lanka. The invasion of these new whitefly species possesses a potential threat to the agriculture sector owing to its polyphagous nature and their rapid dispersing ability.

**Keywords:** *Coconut, Molecular Identification, Pest Invasion, Polyphagous, whitefly*