

MOLECULAR IDENTIFICATION OF BEGOMOVIRUSES INFECTING CHILLI IN SRI LANKA

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Leaf curl disease of chilli (LCDC) is a major problem in the production of chilli in the Indian subcontinent. Most of the leaf curl viruses belong to Genus; *Begomovirus* of the family *Geminiviridae*. Leaf curl viruses are transmitted by whitefly (*Bemisia tabaci* Genn.). In Sri Lanka, different symptoms are observed with LCDC. Therefore, this study was carried out for molecular identification of begomoviruses infecting chilli in Sri Lanka. The study also aimed at identifying different symptoms associated with LCDC, different begomoviruses associated in various parts of Sri Lanka and at whitefly mediated transmission. Seventy two samples with leaf curl disease associated symptoms were collected from all the major chilli growing areas of Sri Lanka. Based on symptoms, 27 samples were selected and associated begomoviruses were detected in Polymerase Chain Reaction (PCR), using six specific primer sets that are capable of detecting six major begomoviruses, *Tomato Leaf Curl New Delhi Virus* (ToLCNDV), *Tomato Leaf Curl Bangalore Virus* (ToLCBV), *Tomato Leaf Curl Jodhpurr Virus* (ToLCJoV), *Chilli Leaf Curl Multan Virus* (ChiLCMV), *Chickpea Chlorotic Dwarf Virus* (CpCDV) and *Chilli Leaf Curl Sri Lanka Virus* (ChiLCSLV). PCR results confirmed the presence of ChiLCSLV, ToLCNDV, ToLCBV and ChiLCMV in 21, 23, 22 and 5 samples, respectively. ToLCJoV and CpCDV were not found in any of the samples. According to the results, single infections with ChiLCSLV and ToLCNDV in 4; double infections with ToLCNDV and ToLCBV in 5; and triple infections with (ChiLCSLV, ToLCNDV, ToLCBV, ChiLCMV) in 14 samples, were found. Four samples showed mixed infections of four viruses (ChiLCSLV, ToLCNDV, ToLCBV, ChiLCMV). This study revealed for the first time, the presence of ChiLCMV, ToLCBV and ToLCNDV in association with LCDC in Sri Lanka and therefore its more complex etiology.

Keywords: Begomovirus, Chilli, Chilli leaf curl, Whitefly