MOLECULAR DETECTION, CHARACTERIZATION AND TRANSMISSION STUDIES ON TOMATO LEAF CURL VIRUS (TYLCV) IN SRI LANKA

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Tomato Yellow Leaf Curl Virus (TYLCV) is an important plant virus on one of the economically most important vegetable crops; tomato (*Lycopersicon esculentum* Mill.). This had not been molecularly detected before, in Sri Lanka. Therefore, this study was an attempt for this. TYLCV-GN-SL (TYLCV *Gannoruwa* - Sri Lanka) was isolated from apparently infected tomato plants, using modified CTAB (Cetyl Trimethyl Ammonium Bromide) method at Horticultural Crops Research and Development Institute (HORDI) Gannoruwa. Associated begomoviruses were detected using Deng 541/Deng 540 and AV 494/AC 1048 primer pairs. TYLCV was detected for the first time in tomato in Sri Lanka, using P1V/P4C TYLCV specific primer pair. Nucleotide sequence of coat protein of isolated TYLCV-GN-SL proved that the Indian strain of TOLC virus was closely related to *Tomato leaf curl Sri Lanka virus* (TLCV-SL: 97 %) and *Tomato leaf curl geminivirus* (TLCGV: 93 %) through direct sequencing data. ThisTLCV-SL was confirmed as TYLCV isolate. TYLCV was molecularly detected from major tomato growing districts like Badulla, Nuwara-Eliya, Kandy and Matale in Sri Lanka. One to three fully opened leaf stages of tomato seedlings were suitable for whitefly-mediated inoculation. Interveinal yellow patches, dark green veinal area, curling, yellow margins and shrinking of leaves were characteristic symptoms with genotypic symptom variations. Initial symptoms appeared within 12-16 days after viruliferous whitefly (*Bemisia tabaci*) inoculation among tested varieties. Mass inoculation technique of whiteflies infected with TYLCV ranked, *T-245* as less susceptible and *Maheshi* and *Tharindu* as very highly susceptible.

Key words: Genotypic symptoms, Mass inoculation, Nucleotide sequence, Resistant, TYLCV