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DETERMINATION OF TOMATO YELLOW LEAF CURL VIRUS (TYLCV) RESISTANCE IN SELECTED SRI LANKAN TOMATO VARIETIES THROUGH WHITEFLY INOCULATION PROTOCOL

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Tomato yellow leaf curl virus (TYLCV) is an important plant virus in tomato (*Lycopersicon esculentum* [Mill]), which is one of the most economically important vegetable crops of Sri Lanka. TYLCV is transmitted by whiteflies (*Bemisia tabaci* [Gannadius]). Correct identification of TYLCV resistant tomato varieties and accessions are very important in any breeding programme. In this regard, a study was conducted by rearing healthy whiteflies on healthy tomato plants under insect proof conditions. Molecularly confirmed TYLCV infected tomato plants were used for transmission studies through virus acquired whiteflies on recommended varieties, "Thilina", "Rashmi", "Bhathiya", "T-245", "Maheshi", "Tharindu", "Rajitha", "Ravi", "Lanka Saver" and "Lanka Cherry". Individual and randomly planted tomato seedlings were inoculated with TYLCV acquired whiteflies. Except the cotyledon stage of seedlings ("Thilina"), one to five fully opened leaf stages showed clear symptom development, 21 days after whitefly mediated inoculation. Interveinal yellow patches, dark green veinal areas, curling, yellow margins and shrinking of leaves were characteristic symptoms but with genotypic variations. The initial symptoms appeared within 12–16 days after the introduction of viruliferous whiteflies through individual inoculation technique on to the tested varieties. In the mass inoculation technique of TYLCV, using whiteflies, T-245 ranked as less susceptible with 33.33 % disease incidence and "Tharindu" (83.81 %) and "Maheshi" (81.11 %) as highly susceptible. Based on these findings, it is recommended that screening through whitefly-mediated mass inoculation technique for the identification of resistance of tomato to TYLCV using three fully opened leaf stage as suitable in breeding programmes.