IMPACT: International Journal of Research in Applied, Natural and Social Sciences (IMPACT: IJRANSS)
ISSN(E): 2321-8851; ISSN(P): 2347-4580
Vol. 3, Issue 4, Apr 2015, 9-16

VALIDATION OF MOLECULAR MARKERS LINKED TO ToLCV RESISTANCE IN TOMATO VARIETIES / HYBRIDS / LINES

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ABSTRACT

Tomato (*Solanum lycopersicum* L.) is one of the most important and extensively grown vegetables around the world. Successful cultivation of tomato crop has been hindered due to attack by numerous pests and devastating diseases. Chiefly of these limiting factors, the tomato leaf curl disease caused by Tomato Leaf curl Virus (ToLCV) is a destructive disease of tomato in many parts of India and world. The use of molecular markers linked to genes for resistance is a tool, which can be used efficiently in plant breeding through marker assisted selection (MAS). Three molecular markers *Ty1*, *Ty2* and *Ty3* linked to ToLCV resistance were validated with fourteen ToLCV resistant entries and Pusa Ruby as a susceptible check, after screening against ToLCV resistance in the green house using white flies. Among these, two advanced breeding lines IIHR-2822 and IIHR-2823 showed the presence of the all three genes *TY1, Ty2* and *Ty3* for ToLCV resistance, the wild accession *S. habrochaites* LA 1777 (IIHR-2101) showed the presence of two genes *Ty2* and *Ty3,* Abhinava showed the presence of *Ty1* gene and Hisar Anmol (H-24), Vyabhav, Arka Ananya, Lakshmi, NS-501 showed the presence of only *Ty2* gene. The varieties Nandhi and Sankranthi; hybrids Shakthiman and US-618 and the advanced breeding line IIHR-2611 (TV 55) did not show any presence of the *Ty1*, *Ty2* and *Ty3* resistant genes.

KEYWORDS: Tomato leaf curl virus, ToLCV linked resistant markers, Ty1, Ty2, Ty3, MAS