

RESEARCH ARTICLE

Molecular detection and prevalence of tomato leaf curl disease in tomato

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SUMMARY

Whitefly transmitted geminiviruses are emerging threat to several crops in tropical and subtropical regions of the world. Tomato (*Solanum lycopersicum* L.) is the world's largest vegetable crop after potato and sweet potato. Leaf curl of tomato is one of the most destructive disease caused by begomoviruses triggering substantial yield losses. Plant showed typical leaf curling, puckering and stunted growth due to viral infection. A severe leaf curl symptom with significantly high disease incidence ranges 25-38 per cent was observed during the survey of different locations of Bhagalpur during Rabi 2016-17. The PCR assay was carried out using whitefly transmitted geminivirus and *Tomato leaf curl New Delhi virus* specific primers. Out of 94 tested plant samples, 60 were found for positive begomovirus. Among the positive samples, 45 and 39 were found positive for ToLCNDV F/R and AVI gene specific primers. The temporal dynamic of leaf curl was assessed, it was progressively increases up to the middle March along with whitefly population. A positive correlation of whitefly and leaf curl incidence was observed in linear regression with $R^2 = 0.095$. The generated information under the study will helpful in understanding the present viral population in tomato crop. Moreover, it will helpful in understanding the epidemic factors and sustainable disease management options.

Key Words : Begomovirus, PCR, Tomato leaf curl, Whitefly

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