

Development of high yield and tomato yellow leaf curl virus TYLCV resistance using conventional and molecular approaches: a review

ABSTRACT

Tomato (*Solanum lycopersicum* L.) belonging to the family Solanaceae is the second most consumed and cultivated vegetable globally. Since the ancient time of its domestication, thousands of cultivated tomato varieties have been developed targeting an array of aspects. Among which breeding for yield and yield-related traits are mostly focused. Cultivated tomato is extremely genetically poor and hence it is a victim for several biotic and abiotic stresses. Among the biotic stresses, the impact of viral diseases is critical all over tomato cultivating areas. Improvement of tomato still largely rely on conventional methods worldwide while molecular approaches, particularly Marker Assisted Selection (MAS) has become popular across the globe as a fast, low cost and precise tool which is essential in present day plant breeding. In this review paper, breeding tomato for high yield and viral disease resistance, particularly to tomato yellow leaf curl virus disease (TYLCVD) using conventional and molecular approaches will be discussed. Lining up of this set of information will be useful to those who are interested in tomato variety development with high yielding and TYLCVD resistance.

Keyword: Molecular markers; Tomato yellow leaf curl virus disease; Resistance breeding; *Solanum lycopersicum*; High yield