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RESEARCH PAPER

Field screening of genotypes for resistance against tomato leaf curl virus (ToLCV) in tomato (*Solanum lycopersicum* L.)

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Abstract : Tomato (*Solanum lycopersicum* L.) is important vegetable crop in India. Tomato leaf curl viral disease caused by tomato leaf curl virus (ToLCV) (genus: Begomovirus, family: Geminiviridae) and transmitted by whitefly (*Bemisiatabaci*) is considered as the most devastating one. Recently, available tomato varieties are not screened against this disease in the agro-ecosystem of India. Therefore, in this study commercial varieties of tomato genotypes including 32 lines including1 resistant and 1 susceptible check were screened against ToLCV in open field condition at Vegetable Research Farm, Department of Horticulture, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi during 2019-20. Among the screened genotypes, H-24, H-88-78-1, Arka Alok and ArkaVardan showed highly resistant reaction to (ToLCV). The Per cent Disease Incidence (PDI) of ToLCV were significantly lower for all these of genotypes. Hence, these resistant sources can be used in resistant breeding programme for further development of varieties/hybrids against ToLCV virus.

Key Words : Fix herbicides, Rotational herbicides, Green manure, Microbial flora, Rice-wheat

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INTRODUCTION

Tomato (*Solanum lycopersicon*), is the widely grown vegetable crop in different temperate and tropical climatic conditions of the world and very commonly used colourful fruit in Indian curries. Tomato leaf curl virus (ToLCV), a begomovirus transmitted by whitefly, *Bemisiatabaci* causing severe yield losses in tomato especially in summer monthsAktar *et al.* (2009). This viral disease is characterized by severe curling, cupping of leaves, thick rubbery shrunken leaves and stunted plant growth with majority of flower (up to 90%) drops down after infection, therefore, only few fruits are produced Abhary *et al.* (2007). This Tomato leaf curl virus is so devastating epidemic disease fortomato cultivation in India which causes up to 99–100% yield losses and became a big problem for tomato farmers (Singh *et al.*, 2008). Morphological or genetic diversity study is an essential technique for the selection of preferred genotypes for plant breeding and development of varieties with known

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