

## Detection and Control of Tomato Yellow Leaf Curl Virus

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### Opinion

Received date: 08/12/2021  
Accepted date: 22/12/2021  
Published date: 29/12/2021

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### INTRODUCTION

The title tomato yellow leaf twist infection (TYLCV) was coined within the late 1950's to depict a virus infecting tomato plants within the Middle East. TYLCV may be a part of the class Begomovirus of the family Geminiviridae. It is transmitted in nature by the whitefly *Bemisia tabaci*. Within the field tomato plants gotten to be contaminated nearly promptly after transplanting and come up short to abdicate, causing imperative conservative misfortune. The infection is generally phloem restricted. TYLCV is transmitted by its vector in a circulative way <sup>[1]</sup>. It has pernicious impacts on its creature have, diminishing life anticipation and ripeness, and attacking the regenerative framework. Breeding programs based on the introgression of resistance from wild tomato species have created assortments with satisfactory resistance. A few loci firmly connected to TYLCV resistance have been allotted to the little arm of tomato chromosome.

Tomato plants with different levels of resistance have been hereditarily built by communicating utilitarian as well as broken viral qualities, and by antisense RNA and post-translational gene-silencing strategies. Tomato yellow leaf twist infection (TYLCV) may be a DNA infection from the class *Begomovirus* and the family *Geminiviridae*. TYLCV causes the foremost dangerous infection of tomato, and it can be found in tropical and subtropical locales causing extreme financial misfortunes. This infection is transmitted by an creepy crawly vector from the family Aleyrodidae and arrange Hemiptera, the whitefly *Bemisia tabaci*, commonly known as the silver leaf whitefly or the sweet potato whitefly. The essential have for TYLCV is the tomato plant, and other plant has where TYLCV contamination has been found incorporate eggplants, potatoes, tobacco, beans, and peppers. Due to the quick spread of TYLCV within the final few decades, there's an expanded center in investigate attempting to get it and control this harming pathogen.

This infection comprises of a single circular single-stranded (ss) DNA particle (2787 nt in measure) which may be a common refinement among infections within the family *Geminiviridae*. The coat protein is an basic component for fruitful creepy crawly transmission of this infection. The ssDNA genome encodes for six open perusing outlines (ORF): two within the virion sense introduction, V1 and V2, and four within the complementary introduction, C1, C2, C3, and C4. The V1 and V2 protein encoded by the v1 and v2 quality are the coat protein and pre-coat protein, respectively. The work of the V1 protein, recognized as the coat protein, is to typify the ssDNA and shape the infection molecule to ensure the viral DNA, whereas the pre-coat protein is accepted to be included in development of the infection <sup>[2]</sup>.

TYLCV is transmitted by the creepy crawly vector *Bemisia tabaci* in a persistent-circulative nonpropagative way. The infection can be effectively transmitted amid the grown-up stages. This infection transmission includes a brief procurement get to period of 15–20 minutes, and inactive period of 8–24 hours. In this plant-virus and vector framework, females are more viable than guys transmitting the infection. A consider illustrated that TYLCV is transmitted to sibling for at slightest two eras. Moreover, it has been illustrated that a

TYLCV confine from Israel is sexually transmitted from one creepy crawly to another. In this think about, they found that the infection was transmitted to guys from virus-infected females and to females from virus-infected guys. Side effects of TYLCV contamination incorporate serious hindering, lessening of leaf estimate, upward cupping/curling of takes off, chlorosis on clears out and blossoms, and diminishment of natural product generation <sup>[3]</sup>.

This infection can cause critical surrender misfortunes from 90–100%, and it is assessed that approximately 7 million hectares can involvement TYLCV contamination or blended infection diseases yearly. Medications that are commonly utilized for this malady incorporate bug sprays, half breed seeds, and developing tomatoes beneath nursery conditions. Creating nations are most influenced by this trim malady due to both the climate and the tall costs of medications utilized in arrange to control it. The essential plant have affected by TYLCV contamination are tomato plants, but other plant has utilized for nourishment such as peppers (*Capsicum annuum*) and beans (*Phaseolus vulgaris*), as well as weeds/flowers (*Datura stramonium* and *Malva parviflora*) can be influenced by TYLCV.

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