

CHARACTERIZATION OF TOMATO LEAF CURL NEW DELHI VIRUS INFECTING CUCURBITS IN FRANCE



Tomato leaf curl New Delhi virus (ToLCNDV), Mediterranean Basin, Bemisia tabaci, Disease management



France

Tomato leaf curl New Delhi virus (ToLCNDV) is emerging in the Mediterranean Basin, starting from Spain in 2012. First observed in France in 2020 in Gard and Bouches-du-Rhône. Mediterranean ToLCNDV, a bipartite begomovirus, primarily affects zucchini and other cucurbits, genetically distinct from Asian (Indian)-ToLCNDV with a broader host range.



The cryptic species of whitefly *Bemisia tabaci* is the main insect vector of *ToLCNDV* while mechanical inoculation is also possible. Previous studies indicate that the Mediterranean clade represents a homogenous population, probably originating from a single introduction.

We established a suitable protocol of inoculation and performed biological and molecular characterization of the French isolates in order to estimate their risks of emergence and their potential agronomic impact. Symptom observation of French *ToLCNDV* isolates on melon and zucchini showed two different types so-called "severe" and "recovery".

French *ToLCNDV* is transmitted by *Bemisia tabaci* but not by *Trialeurodes vaporariorum*. Experimental analysis indicates the susceptibility of Bryony and Tomato to *ToLCNDV* from France and Spain, possibly serving as virus reservoirs. Our findings advance understanding and guide future disease management.

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