

Impact of climate change on a whitefly-transmitted virus



Bemisia tabaci, Tomato Leaf Curl New Delhi Virus (ToLCNDV), Epidemiology, Climate change



Luxembourg

Bemisia tabaci (Hemiptera: Aleyrodidae) is a significant pest worldwide, causing damage to plants both directly and indirectly by transmitting numerous economically important viruses. The **Tomato Leaf Curl New Delhi Virus (ToLCNDV)**, transmitted by whiteflies from the *Bemisia tabaci* complex, spread from Southeast Asia to the Mediterranean region in the early 2000s. ToLCNDV affects **cucurbits** and has caused significant economic losses in Europe, particularly in Greece, Italy, Spain, Portugal, and recently in France. **Climate change** is expected to exacerbate the spread of *B. tabaci* and its associated diseases. To better understand how climate change will affect the epidemiology of ToLCNDV in cucurbits, LIST researchers are testing how changes in temperature, humidity, and CO₂ concentration in climatic chambers will affect the acquisition and inoculation of ToLCNDV in *B. tabaci*, as well as the gene expression of target genes in the whitefly vector. The experiments aim to shed light on an unexplored topic and help address future challenges in plant protection.

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