

## **Control the Chili leaf curl virus**

From the common Jawala chilli to the colored Kashmiri chilli, to the uniquely flavored Mundu and Guntur chilli to the extremely hot Naga and Kanthari chilli...India is a land of many varieties of chillies which impart unique flavor to Indian cooking...

Chilli- is one of the most crucial spice-cum- vegetable crop grown in India but they also faces a huge threat....in the form of viral infection caused by a group of virus called *Geminiviridae*

The infection which results in a condition called Chilli leaf curl results in deformed leaves along with fewer, smaller, and deformed fruits.

While no successful method exists to control the Chilli leaf curl virus presently, a new study may pave way for novel interventions.

The study comes from the group of Dr. Nirbhay Kumar Kushwaha from the Jawaharlal Nehru University, who has identified novel genes in chilli, which might provide immunity against the virus.

The team has used genetic constructs of the infective virus to screen resistant and susceptible varieties of chillies under laboratory conditions.

The study has led to the creation of Chilli gene library comprising 231 genes which can be used to develop virus-resistant chilli plants.

Using a technology known as virus induced gene silencing, which prevents the expression of certain genes in the plant, and cell biology techniques, the team has also tried to understand the mechanism of disease development and interactions between the viral and host proteins.

Various aspects of the study published by the group in journals like the Applied Microbiology and Biotechnology, Archives of Virology, Journal of Experimental Botany and Physiology and Molecular Biology of Plants, furthers the understanding of the mechanism through which chilli curl virus utilize host cellular machinery to activate their genes and cause the disease.

The study opens up new avenues for the development novel crop protection strategies to control Chilli curl.