

ADDITION TO HOST RANGE OF CHILLI MOSAIC VIRUS FROM EASTERN UTTAR PRADESH A SURVEY

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Chilli Mosaic virus disease caused by Cucumis mosaic virus (CMV) is a serious viral disease of *Capsicum annum* (Chilli). In eastern U.P. several other plants have been reported to serve as host plants for CMV pathogen. The present investigation revealed that eight plant species viz. *Datura alba*, *D. stramonium*, *Vigna sinensis*, *Lycopersicon esculentum*, *Eclipta alba*, *E. prostrata*, *Ageratum conyzoides*, *Cucumis sativus*, are alternating host range of the CMV.

Keywords : Alternating Host; CMV; Host range; Incubation; Inoculation; Inoculum.

Chilli mosaic disease is serious viral disease of chilli plants in Eastern UP. Several other vegetable and weed plants, mostly solanaceous, Leguminaceous have been reported to be affected by cucumber mosaic virus (CMV) that can cause severe losses¹. Some distantly related genera of plants have been reported to serve as host plants for CMV pathogen, *Capsicum annum*, *Lycopersicon esculentum*, *Datura alba*, *D. stramonium*, *Vigna sinensis*, *Nicotiana tabacum*, *Ageratum conyzoides* etc. CMV has been reported from India^{2,3}. Tiwari⁴, reported Indian Chilli mosaic Virus.

To test the host range of CMV in eastern U.P., ten plant species viz. *Datura alba*, *D. stramonium*, *Cucumis sativus*, *Solanum melongena*, *Vigna sinensis*, *Lycopersicon esculentum*, *Nicotiana tabacum*, *Ageratum conyzoides*, *Eclipta alba*, *Eclipta prostrata*, along with Chilli

(*Capsicum annum*) CV Kufri Chandramukhi as standard check were used. The leaves of each plant species were washed with tap water. The inoculations were made by gently rubbing the upper surface of the primary leaves of plants with fore finger dipped in infective sap (inoculum of CMV) leaves were washed immediately with a jet of distilled water, the control plants were treated similarly but with the buffer solution only. Time taken for symptom appearance was recorded and the symptoms were studied in details (Table-1).

Observation revealed that out of 10 plant species inoculated with Chilli mosaic virus (CMV) from chilli, only eight (*Datura alba*, *D. stramonium*, *Vigna sinensis*, *Cucumis sativus*, *Ageratum conyzoides*, *Lycopersicon esculentum*, *Eclipta alba*, *E. prostrata*) plants showed disease symptoms (Table 1). The first visible symptoms

Table 1. Host range of CMV causing mosaic disease of Chilli (*Capsicum*).

S.N.	Hosts	Reaction	
		Local	Systemic
1.	<i>Datura alba</i>	+	+
2.	<i>Datura stramonium</i>	+	+
3.	<i>Cucumis sativus</i>	+	+
4.	<i>Solanum melongena</i>	-	-
5.	<i>Vigna sinensis</i>	+	-
6.	<i>Lycopersicon esculentum</i>	+	+
7.	<i>Nicotiana tabacum</i>	-	-
8.	<i>Ageratum conyzoides</i>	+	-
9.	<i>Eclipta alba</i>	+	-
10.	<i>Eclipta prostrata</i>	+	-

developed after 10 days of inoculation and carried 50% of the whole plants leaf after 20 days of incubation on the eight plant species.

Initial symptoms were apparant as mottling, but with more contrast between the light and dark portion of the leaf. The leaf curl upward at the edge and often are abnormally narrow and pointed. Infected plants often are abnormally short and compact in appearance, yellow rings are produced in the leaves and fruit. Deol and Rataul⁵ reported that plant infected at 10-20 days after transplanting did not yield any fruit and loss in yield was 100%. Tiwari K.K.⁴ and Singh⁶ also reported

symptomology and host range of chilli mosaic virus from Faizabad district.

References

1. Jha A and Ray Chaudhry 1956, *Indian J. Agr. Sc.*, 26 217
2. Anjaneyulu A and Appa Rao A 1967, *Indian Phytopath.*, 20 380
3. Mishra A, Chaudhari DP and Jha A 1977, *Meded. Fac. Land. Bouwv. Rij Ksuniv. Gent.*, : 42 1217
4. Tiwari, K K 2003. Symptomology and mode of transmission of vegetable viruses. Ph.D. Thesis, Dr. R.M.L. Avadh University, Faizabad pp 176.
5. Deol G S and Rataul 1978, *Indian Jour. Plant Prot.*, 6 82-83.
6. Singh, SS 1992, *Physiological studies on host virus interaction in chilli plant*, Ph. D. Thesis of Avadh University, Faizabad. Pp211