

## OCCURRENCE OF COTTON LEAF CURL VIRUS (CLCuV) IN SINDH

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The leaf curl disease of cotton (*Gossypium hirsutum* L.) was first observed in Pakistan during 1967 from Multan area. The disease remained in low intensities or was ignored until 1987 when it erupted as an epidemic. The cause of the disease was established in 1992 as a whitefly-transmitted geminivirus with the properties of cotton leaf curl virus (CLCuV) (Hameed *et al.*, 1994). On the basis of departmental reports, the disease was found to be restricted only in the Punjab area and the cotton crop in Sindh was considered disease free. Keeping in view the magnitude of the disease in Punjab and whitefly (*Bemisia tabaci*) as its vector, a program of monitoring virus diseases with emphasis on geminiviruses including CLCuV in Sindh was initiated in late 1996. Hyderabad, Sanghar and Nawabshah districts were surveyed during September, 1996 and the districts of Ghotki, Sukkur, Khairpur and Naushehro Feroze during January, 1997. CLCuV-like symptoms showing curling, cupping upward/downward and shortening of leaves, thickening of veins and development of enations on underside of leaves were observed in cotton fields around Ubaro in district Ghotki, the area not far from Punjab border, where the disease incidence in two fields was about 10%. According to local farmers, such symptoms in cotton were also observed during the 1995 season also. Disease symptoms were also observed on other wild and ornamental plants around Mirpur Mathelo and Ghotki.

The presence of CLCuV was confirmed through Triple Antibody Sandwich Enzyme Linked Immunosorbent Assay (TAS-ELISA) using panel of Monoclonal Antibodies against whitefly-transmitted geminiviruses (WTGs), polymerase chain reaction (PCR) using CLCuV-specific primers (Swanson *et al.*, 1992; Harrison *et al.*, 1997) and by reproducing CLCuV symptoms in cotton (cv. S-12) through whitefly inoculation under controlled conditions. This confirms that the disease is present in Sindh as well. At present only a limited area near the Punjab border has been found infected. But there is every likelihood that the disease may further spread southwards. It is interesting to note that in 1990-91, the disease was found only in a small area in the Punjab, but it spread to almost all cotton growing areas of the province in a span of 2-3 years.

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