

Review of Cotton Leaf Curl Virus (CLCuV) along-with its strains (CLCuMuV and CLCuBuV)



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Abstract

Cotton produces exceptional quality fiber which prime importance in textile industry. As the textile industry expanded cotton industries started running side by side for which substantial factor is sustainable cotton production. To follow through, the related diseases were studied thoroughly, especially Bacterial Blight and Cotton Leaf Curl Virus. A viral disease of genus Begomovirus has been intractable for the last 3-4 decades. CLCuV is bipartite and 18-20nm in diameter and 30nm in length. It attacks on the leaves causing curling and enation type symptoms which decreases seed size thus declining fiber quality. Virus has different strains like CLCuV-Alabad, Bangalore, Barasat, Gezira, Kokhran, Multan and Burewala. In region like Indo-Pak Subcontinent, Multan and Burewala strains are in possession. It was first reported in Africa, a century ago but even then causes pandemic losses in Pakistan & India.

In Pakistan, during early 1990s, farmers got bumper crop with 12.4 million bales production but three years later (1994), this production reduced to 7.9 million bales due to CLCuV (Multan epidemic). To accomplish the loss researchers of Central Cotton Research Institute, Multan (CCRI) put their efforts and succeeded to cross records in 2004 by producing 14.5 million bales. After a decade in 2013-14 (Burewala-epidemic), new viral strain broke resistance of every available germplasm which lead towards a drastic decline in yield. This strain was recombinant of CLCuMuV and CLCuKoV. The varieties like CIM-1100, CIM-448, VH-53 and MNH-554 were resistant against CLCuMuV were inevitable by its attack. For sustainable cotton yield solution after resistant variety development was to kill its vector (Bemisiatabici). Imidacloprid+Acetameprid insecticides produced brilliant results when applied in early morning. Destroying alternate host and burning of previous crop stubbles also effectively manage CLCuV. Following the future perspectives, breeders can also consider *Gossypium herbaceum* and *Gossypium arboretum* as resistant germplasm sources for CLCuV new strain.

Biography

Hamza Rafiq is doing his B.sc (hons) Agriculture Sciences with major field of Plant Pathology from University of Agriculture Faisalabad (UAF), Punjab, Pakistan. He is bona-fied student of his Institute. He is in his final semester of B.sc (hons) degree and doing internship at Ayub Agricultural Research Institute (AARI) Faisalabad. He has submitted his 1st article (as Co-Author) on Sunflower and waiting to be accepted soon. He is working in dynamic society of his university which is Character Building Society (CBS). He is serving his duties as Event Managers (In-charge) during his study.



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