Leaf Curl of Chillies

Pathogen:*Chilli leaf curl virus (ChiLCV)*
Vector: Whitefly (*Bemisia tabaci*)

Distribution & Importance: Leaf curl of chilli is distributed throughout the tropical and subtropical countries of the world, including Australia, Asia, Europe, Africa and America. The disease is of common occurrence in India, Pakistan, Bangladesh, Nigeria and USA. In India, leaf curl of chilli is so destructive that it can cause 100 % loss in yield.

Symptoms: Leaf curl of chilli is marked by the typical symptoms of curl. Infected leaves show curling, upward rolling. Veins are swollen and thickened. Interveinous areas show blisters and yellowing. Petioles and internodes are shortens. Young leaves greatly reduced in size and crowded. The infected chilli plant is stunted growth with bushy appearance. Young flower buds abscise before attaining maturity and anthers do not produce pollen grains.

Pathogen: leaf curl of chilli is caused by chilli leaf curl virus (ChiLCV). ChiLCV belongs to the family geminiviridae. Its genome contains single-stranded monopartite circular DNA (ssDNA). ChiLCVs are transmitted through the whiteflies (*Bemisia tabaci*)

Transmission of Virus (Disease Cycle): Leaf curl of chilli is transmitted through Whiteflies (*Bemisia tabaci*) in a persistent manner. They are characterised as1.5 mm long, waxy white wings with a pale yellow body and are frequently found on the lower side of the leaves. The spread of the disease depends on thewind condition, which will indicate how far whiteflies can travel. Since the disease is not seed-borne, the virus persists in the landscapes via alternative hosts such as tomato, tobacco and weeds. Some additional factors that can favour the development of the disease are recent rainfall, infected transplants and presence of weeds. In nurseries, chilli plants are most prone to infection during the seedling and vegetative stages.

Management: As the disease is caused by virus, preventive measures and IPM are best to practice.

1. Healthy and uninfected seeds should be used.
2. Growing nursery in protected structures.
3. Transplanting dates should be adjusted to avoid peak season of the vector population.
4. On appearance of the symptoms, diseased plants should immediately be removing and burnt.
5. To control the insect vectors, yellow sticky traps should be used.
6. Use of silver colour (reflective) mulch is recommended.
7. Use of trap crops attracts more of the vectors to them.
8. Resistant varieties e.g. Pant Chilli-1, Pant C-2, Pusa Jwala, Punjab Sindhuri, Punjab Tej, CH-27, Surajmukhi, suraj mani, Puri red and Bangla Green should be used.
9. Apply Carbofuran 3G @ 4-5 Kg/acre in the main field to control sucking complex and insect vectors selectively. If it is not possible spray the crop with systemic insecticides. Dimethoate 2 ml or Acephate 1g per litre of water. Sprying diazinon, malathion, metasystox at 10 days interval (0.07%), monocrotophos with 0.25% wettable sulphur,Diafenthiuron @ 200 ml/litre, and Imidacloprid (0.05%).