

4. LEAF CURL DISEASE OF COTTON

Cotton leaf curl disease is caused by a complex of begomovirus species, all of which incite similar symptoms in cotton and are transmitted by the whitefly *Bemisia tabaci*.

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SYMPTOMS

The first symptoms of infection in cotton appear within 2-3 weeks of inoculation and are initially characterized by deep downward cupping of the youngest leaves. This is followed by either upward or downward curling of the leaf margins and swelling, darkening and formation of enations on the veins, which frequently (depending on cultivar) develop into cup-shaped, leaf-like structures.

IMPACT

Cotton leaf curl virus has been responsible for yield loss in all affected cotton-growing areas in Africa since its discovery. Losses are difficult to assess, but estimates range up to 20% when infection

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occurs early in the growing season. In recent years upto 80% of the plants in some fields have become infected early in the season and entire plantings have been lost to the disease.

PREVENTION AND CONTROL

Resistant varieties were developed through selection in the 1930s, these exhibit a mild mosaic but produce viable yields and high quality, marketable cotton. The mechanism of resistance is thought to involve reduction in virus levels in infected plants, and these lines have proven durable until quite recently.

Elimination of weeds near cotton fields may have some advantage in reducing virus and vector reservoirs.

Host-plant resistance is undoubtedly the most promising means of controlling the disease and renewed efforts are under way in several laboratories around the world to work towards this goal.

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