

Subject-Botany

Class-Bsc-III

Paper-I (Pathology)

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Topic- Cucumber mosaic Disease

Mosaic disease of cucumber

PATHOGEN: Cucumber mosaic virus

Cucumber mosaic disease was first reported in North America around 1900 and has since spread worldwide. Cucumber Mosaic disease is the transfer of the virus from one infected plant to another through the bite of an aphid. The infection is acquired by the aphid in just one minute after ingestion and is gone within hours. Great for the aphid, but really unfortunate for the hundreds of plants it can bite during those few hours. If there's any good news here it's that unlike some other mosaics, Cucumber Mosaic Virus can't be passed along through seeds and won't persist in plant debris or soil.

Cucumber Mosaic Virus Symptoms:

Cucumber Mosaic Virus symptoms are rarely seen in cucumber seedlings. Signs become visible at about six weeks during vigorous growth. The leaves become mottled and wrinkled and the edges curl downward. Growth becomes stunted with few runners and little in the way of flowers or fruit. Cucumbers produced after infection with cucumber mosaic disease often turn grey-white and are called “white pickle.” The fruit are often bitter and make mushy pickles.



Figure 1. Mosaic symptoms on cucumber leaves and fruit from CMV infection

Control:

Plant resistant cultivars when available.

Insecticides are not generally useful for controlling CMV because it does not persist within the aphids for long enough.

Insecticides can sometimes irritate aphids into moving and probing plants more rapidly and can result in faster spread of the virus.

Mineral oil or rapid-acting insecticide sprays can be effective.

Use cultural practices to delay the arrival of aphids into your crop:

- Use reflective mulches to deter aphids

- Isolate fields with taller, non-susceptible crop borders (e.g. corn) to delay arrival of aphids into field and to act as depositories for virus

- Time planting to avoid exposing young plants to high aphid populations (e.g. during aphid migrations)