ALABAMA COOPERATIVE Extension SYSTEM
Your Experts for Life
ANR-876

ALABAMA A&M AND AUBURN UNIVERSITIES

Plant Disease Notes

Mosaic Viruses of Cucurbits

Many viruses attack cucurbits in Alabama. Three viruses found commonly are cucumber mosaic virus, squash mosaic virus, and watermelon mosaic virus. Symptoms produced by these viruses are similar, making field identification impossible. Special laboratory testing is required for positive identification. These viruses differ in their host range, method of transmission, and means of overwintering.

Cucumber Mosaic Virus

Cucumber mosaic virus (CMV) attacks more than 40 families of plants worldwide, including all vine crops. Strains of CMV differ in their host range, symptoms, and method of transmission. Cucurbits are susceptible at any stage of growth.

Symptoms. When plants become infected in the 6- to 8-leaf stage, symptoms first appear on the youngest, still expanding leaves. A mosaic pattern develops: healthy, dark green leaf tissue is intermingled with light green and yellow tissue. Leaves are often distorted, crinkled, curled, and stunted. Vines may appear bunchy because of the shortening of the internodes. In severe cases, older leaves may die. Typical mosaic symptoms develop only on actively growing leaves. When a plant becomes infected at midseason, previous growth remains normal and produces healthy fruit. Few fruit set on plants infected early in the growing season. Fruit that do set are often of poor quality and may be mottled green and yellow or have dark green warts.

Persistence and Transmission. CMV survives in almost 800 species of plants, including many weeds found in Alabama. These weeds often act as reservoir hosts and allow the virus to overwinter. CMV can be spread and transmitted by more than 60 species of aphids. Transmission is in a nonpersistent manner, meaning the aphids need to feed on a CMV-infected plant for only a few seconds to pick up the virus.

Squash Mosaic Virus

Squash mosaic virus (SqMV) affects most cucurbits but is rarely a problem in watermelon.

Symptoms. Initial symptoms on squash include yellow spotting of the younger leaves. Infected leaves cup upward and develop a light to dark green mosaic pattern. Squash leaves may become distorted, and fruit are often malformed with raised, dome-like swellings.

On cucumber, SqMV causes a yellow spotting followed by a yellow vein-banding on the first true leaves. Young leaves may cup upward. Leaves that form later develop few or

no symptoms, and the original symptoms fade as temperatures increase, making it difficult to detect infection during hot summers.

On cantaloupe, SqMV causes yellow spotting, a green and yellow mosaic, and green vein-banding on the leaves. A few leaves may become malformed with veins protruding beyond the leaf margin.

Persistence And Transmission. SqMV can overwinter in weeds, seed, and cucumber beetles. Cucumber beetles are efficient vectors of SqMV, spreading the virus during feeding.

Watermelon Mosaic Virus

Watermelon mosaic virus (WMV) affects all cucurbits and a few other plants, including peas and alfalfa.

Symptoms. The symptoms of watermelon mosaic virus vary, depending on the host and the plant's age at the time of infection. Symptoms on most cucurbits may include stunting, leaf malformation, yellowing or light green mottling, and marginal chlorosis (yellowing). Plants that are infected when they are young produce few marketable fruit. Fruit that are produced may be dwarfed, mottled, or spotted.

Persistence and Transmission. WMV overwinters in seed or in infected weeds. In spring, the virus can be spread by many species of aphids in a nonpersistent manner. Later plantings risk greater damage because disease incidence and aphid populations increase during the growing season.

Control Of Mosaic Viruses In Cucurbits

Strategies for controlling mosaic viruses in cucurbits include the following:

- Eradicate biennial and perennial weeds and wild reservoir hosts in and around gardens and fields.
- Apply insecticides to prevent the buildup of aphid, cucumber beetle, and other insect populations. Keeping insect populations low will reduce virus incidence and spread.
- Plant certified virus-free seed when possible.
- Plant resistant cucumber varieties.
- Isolate later planting as far away as possible from earlier settings, especially if virus incidence was high.
- To reduce or delay spread of the disease, remove infected plants when symptoms first appear.

ALABAMA COOPERATIVE Extension SYSTEM

Your Experts for Life

ANR-876

Edward J. Sikora, *Extension Plant Pathologist,* Professor, Entomology and Plant Pathology, Auburn University

Web Only, **Revised Sept 2004,** ANR-876