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BIDENS MOTTLE VIRUS OF FITTONIA VERSCHAFFELTII

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Cultivars of Fittonia verschaffeltii Coem. are grown as terrarium plants and foliage ornamentals in Florida. In the winter of 1976-77, cultivars of fittonia infected with bidens mottle virus were collected from nurseries near Apopka, Florida (9). Originally, bidens mottle virus was isolated in the vicinity of Gainesville, Florida in 1966 from the widespread weed hosts, hairy beggarticks (Bidens pilosa L.) and Virginia pepperweed (Lepidium virginicum L.) (2). The virus is now known to occur throughout the state and has been referred to as one of the most important virus diseases of vegetable crops in South Florida (4, 5).

HOST RANGE. Bidens mottle virus infects most varieties of lettuce (Lactuca sativa L.) and escarole and endive (Cichorium endivia L.) grown commercially in central and southern Florida (7). It has six known weed hosts including butterweed (Senecio glabellus Poir.) (7), horseweed (Erigeron canadensis L.), American burnweed (Erechtites hieracifolia L.), Mexican picklepoppy (Argemone mexicana L.) (8), as well as hairy beggarticks and Virginia pepperweed. Other hosts include blue lupine (Lupinus angustifolius L.), Chenopodium amaranticolor Coste & Reyn., C. quinoa Willd., Cyamopsis tetragonoloba (L.) Taub., the golden vein plant (Xantheranthemum igneum (Linden) Lindau), Nicotiana spp., sunflower (Helianthus annuus L.), petunia (Petunia X hybrida Hort. Vilm. Andr.), and at least five cultivars of zinnia (Zinnia elegans Jacq.) (1, 2, 3, 6, 11).

SYMPTOMS. The foliar symptoms caused by bidens mottle virus are predominately distortions of the normally symmetrical leaves of fittonia (fig. 1). They also include interveinal chlorosis and stunting of the leaves. Growers in the Apopka area have indirated that these foliar distortions fluctuate seasonally. Growth chamber experiments indicated that virus concentration was higher and symptoms were more severe in silvernerve fittonias grown in cooler temperatures than in those grown in warmer temperatures (11).

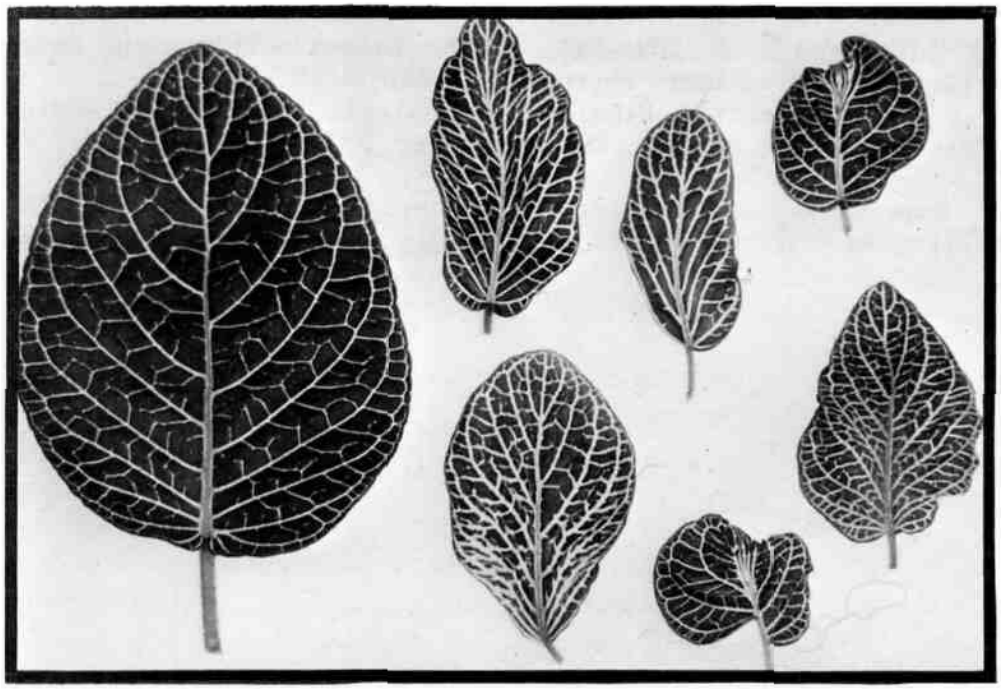

Fig. 1. A healthy leaf (left) of Fittonia verschaffeltii var. argyroneura (silvernerve fittonia) and leaf distortions (center and right) caused by bidens mottle virus (BoMVF). (Photography courtesy of F. W. Zettler.)

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CONTROL. Control measures for bidens mottle virus in lettuce and endive presently involve the control of weed hosts and aphids (10). Since fittonia is propagated exclusively by vegetative means, removal of infected propagation stock and replacement with healthy plants may be helpful in controlling bidens mottle virus in fittonia cultivars grown in Florida nurseries. In addition, tissue culture procedures for potential use in the production of virus-free cultivars of fittonia have shown limited but promising success (11). Control of bidens mottle virus is important in preventing its spread through interstate transportation of fittonia cultivars because it has not been reported outside of Florida.

SURVEY AND DETECTION. Look for plants with leaves with exhibit distortion, interveinal chlorosis, and stunting. If such symptoms are observed, submit the entire plant to the Bureau of Plant Pathology, Division of Plant Industry.

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