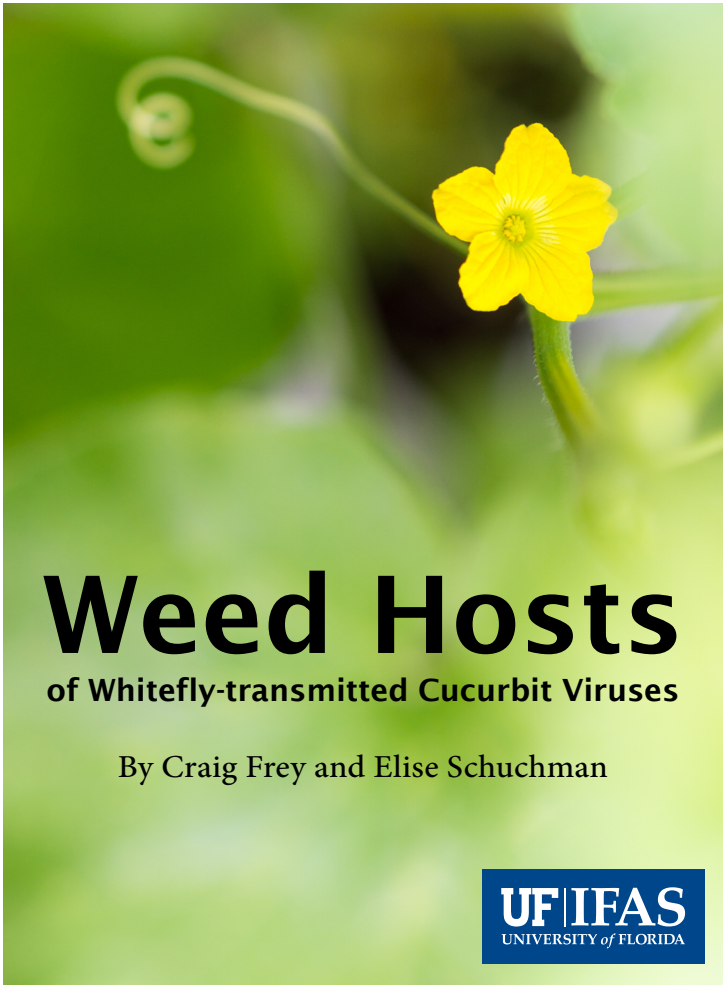

Weed Hosts

of Whitefly-transmitted Cucurbit Viruses

By Craig Frey and Elise Schuchman

UF IFAS
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About This Guide

Purpose:

This guide was created for the purpose of identifying potential weed hosts of cucurbit viruses. Many weed hosts may be asymptomatic in their viral expression, but still have the potential to transmit viral infection to crops through whitefly vector *Bemisia tabaci*. The identification of weeds which can put crops at risk allows for targeted management efforts.

Acronym Key:

CYSDV: Cucurbit Yellow Stunting Disorder Virus
CuLCrV: Cucurbit Leaf Crumple Virus
SqVYV: Squash Vein Yellowing Virus

Viral Expression Symbol Key:

Asymptomatic Symptomatic Variable

A note on lambsquarters and silverleaf nightshade:

These weeds have been shown to host CYSDV in a study done in California; however, they have not yet demonstrated potential to transmit infection to crops.[1]

CYSDV Symptoms

Primary symptoms: Veins remain relatively green as the leaf yellows. Leaves may curl. Symptoms are more intense on older leaves.

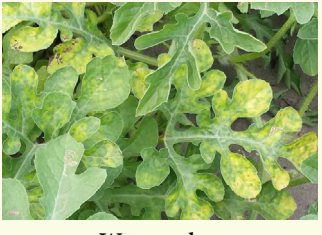
Squash

Squash

Cucumber leaf

Melon

Watermelon

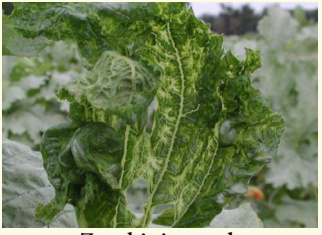


Watermelon

CuLCrV Symptoms

Primary symptoms: Leaf chlorosis, distortion, curling, crumpling, plant stunting. Yellow squash will show green veins. Non-squash hosts tend to recover after a month.
Crop tolerance: Cucumber shows at most mild symptoms. Symptom severity is cultivar dependent for beans. Some cucumber and bean varieties are unable to be infected

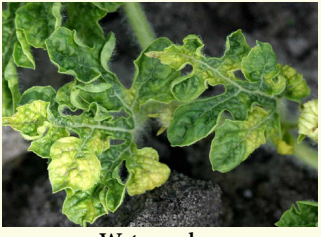
Yellow squash



Zucchini squash

Yellow squash fruit

Yellow straightneck squash



Watermelon

Cantaloupe

SqVYV Symptoms

Primary symptoms: Yellowing of veins followed by browning and wilting. Symptoms first appear during fruit development.

Yellow Summer Squash

Melon

Watermelon field

Watermelon fruit

Watermelon

Young Watermelon

Pigweed

Amaranthaceae

Amaranthus sp.

CYSDV[6]

Dudaim Melon

Cucurbitaceae

Cucumis melo var. dudaim

CYSDV[7] CuLCrV[7] SqVYV[7]

Balsam-Apple

Cucurbitaceae

Momordica charantia

CuLCrV[8] SqVYV[8]

Citron Melon

Cucurbitaceae

Citrullus lanatus var. citroides

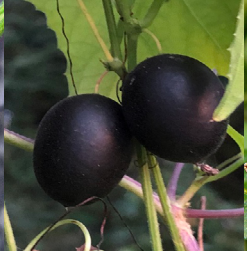
SqVYV[5]

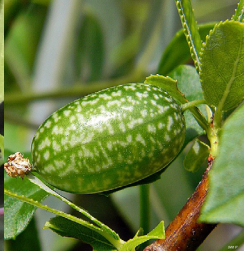
Creeping Cucumber

Cucurbitaceae

Melothria pendula

SqVYV[8]





Green Bean

Fabaceae

Phaseolus vulgaris

CYSDV[1] CuLCrV[9]

Lambsquarters Chenopodiaceae

Chenopodium album

CYSDV[1]

Silverleaf Nightshade

Solanaceae

Solanum elaeagnifolium

CYSDV[1]

Photo Credits

CYSDV Crop Symptoms

First row, left - Second row, left: Ghanem, Gamal & Kheder, et al. https://www.researchgate.net/publication/303485419

Second row, right: 2010 Wilsonsa, microbewiki.kenyon.edu

Third row, left: Pamela Roberts, UF/IFAS, EDIS #ENY-478

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CuLCrV Crop Symptoms

First row, left: A. P. Keinath, et al. https://doi.org/10.1094/9780890545744

First row, right: S. E. Webb, UF/IFAS, EDIS #ENY-477

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SqVYV Crop Symptoms

First row, left: Pamela Roberts, UF/IFAS, EDIS #ENY-478

First row, right: Craig G. Webster et al. 2013 https://doi.org/10.1094/PDIS-93-7-0685

Second row: Pamela Roberts, UF/IFAS, EDIS #ENY-478

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Silverleaf Nightshade

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8. Adkins, Scott & Webb, Susan & Baker, Carlye & Kousik, Shaker. (2008). Squash vein yellowing virus Detection Using Nested Polymerase Chain Reaction Demonstrates that the Cucurbit Weed Momordica charantia Is a Reservoir Host. Plant Disease. 92. 10.1094/PDIS-92-7-1119.

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