

Aster Yellows

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A recent walk through the Master Gardener demonstration gardens revealed a surprise that resulted in a learning experience...my favorite kind of walk. The surprise was a lantana with bloom heads that resembled broccoli crowns. The learning experience was discovering what could have caused this to happen?



Aster Yellows infected Lantana.

After researching in the Master Gardener Hotline room, the culprit was identified as Aster yellows. Aster yellows is a bacterium that

is transmitted by infected leafhoppers. Leafhoppers are insects that annually migrate northward after overwintering along the Gulf of Mexico. Aster yellows affects over 300 species of plants, in 38 families of broad-leaf herbaceous plants as well as grain crops. Ornamentals are also affected such as aster, coneflower, zinnia, marigold, chrysanthemum, petunia, and snapdragon. Crops affected include lettuce, carrot, tomato, and celery. Grasses and grains are hosts also. Weeds with the disease include plantain, dandelion, and other broad-leafed weeds.

An infected leafhopper can infect another plant by feeding on it. This plant will then be able to transmit the disease to other leafhoppers within 10 days. The spread of the disease along the Gulf Coast favors cool, wet springs. The leafhopper then migrates northward on the wind where it continues to spread the disease in the cool, wet summers of the Midwest.

I was very surprised to learn high temperatures will inactivate the bacterium in both leafhoppers and plants. Leafhoppers are cured of the bacterium by exposing them to temperatures of 88 degrees F for 10 to 12 days.¹ So, during our hot summers the ability of the leafhopper to cause infection is much reduced and symptom remission may occur in infected plants. This explains why this disease is rare or absent in hot areas of the world.

Control of the disease is difficult. The best approach is to plant resistant varieties. Also, remove any plant showing signs of the disease, bag and send to the landfill. Remove all weed hosts. Chemical control of the leafhopper has proven to be very difficult and is therefore not recommended. For vegetable growers, the best control method is exclusion by using a cloth or net covering.



Distorted flower of golden rod, due to aster yellow infection.
M. Grabowski, UMN Extension



Echinacea infected with asters yellow



Healthy vinca next to a plant infected with aster yellows. M. Meyer, UMN Extension

¹ Mohammed Babdoost, Extension Specialist in Fruit and Vegetable Pathology, Department of Crop Sciences, University of Illinois at Urbana-Champaign

Michelle Grabowski, Aster yellows of Garden Flowers and Vegetables, University of Minnesota Extension

Texas A&M University, Plant Disease Handbook