

## Aster Yellows

*By John Hartman*

Symptoms of aster yellows disease may appear this time of year in herbaceous flowering plants in the garden. Once thought to be caused by a virus, aster yellows disease is caused by a bacteria-like organism called a phytoplasma. Aster yellows outbreaks are infrequent here, but when they do occur, they can cause considerable damage. Aster yellows is spread by leafhoppers which can acquire the phytoplasma while feeding on diseased plants and 10-45 days later transfer the pathogen to new host plants. The aster yellows phytoplasma can be transmitted a great distance (from one state to another) by means of these vectors.

Aster yellows host plants. This disease has a very wide host range. Ornamentals such as aster, begonia, chrysanthemum, coreopsis, dahlia, delphinium, gaillardia, gerbera, gladiolus, gloxinia, hydrangea, marigold, pansy, petunia, phlox, primrose, purple coneflower, rudbeckia, salvia, and vinca are susceptible. In addition many garden vegetables such as carrot, lettuce, onion, spinach, potato, and tomato can be infected. Weeds that may become infected and serve as hosts for aster yellows include black-eyed Susan,

dandelion, field daisy, thistle, wide-leafed plantain, wild carrot, and wild chicory.

**Symptoms.** The aster yellows phytoplasma grows in the phloem, disrupting plant hormone flow and resulting in plant growth distortions. Yellows diseases are known to cause yellowing, bronzing, stunting, and witches brooms (abnormal proliferations of shoots). In addition, stiff, upright, purple foliage may be observed, or tiny, distorted leaves may appear in the center of flowers. Flower sterility and flower greening symptoms are also common.

**Disease management.** Aster yellows cannot be cured, so infected plants are best pulled up and discarded to prevent leafhoppers from spreading the disease to nearby plants. Fortunately, the disease is sporadic enough that usually only a few plants in a bed may be affected. Removal of weeds near the garden which may be secondary sources of the pathogen is also needed. Insecticides can deter leafhopper vectors, but would be most useful if applied early in the season to nearby weeds which are sources of the phytoplasma.