



Information

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Aster yellows

Aster yellows remains a threat to many autumn flowering herbaceous perennials. Despite the name, the disease affects more than 300 species of plants, including vegetables such as carrot and field crops like lettuce as well as ornamentals which include primulas, vincas and anemones.

Aster yellows is a viral-like affliction caused by a phytoplasma vectored by sap-sucking insects—especially the aster leafhopper. When a leafhopper feeds on an infected plant, the insect becomes permanently infected with the phytoplasma. Within weeks of contact, the phytoplasma cells multiply and affect the insect's salivary glands. The leafhopper then feeds on a healthy plant, injecting the phytoplasma cells into the plant phloem, thus completing the cycle of infection.

Susceptible plants will begin to show signs of infection anywhere from 10 to 40 days following the onset of infection. Chlorosis is a significant symptom; growth also tends to slow, and leaves may appear smaller and narrower than normal and foliage can also curl.



Among the most obvious symptoms, however, is the appearance of a very deformed flower. Strange, prolific tufts of deformed leaves emerge inside the flower or in place of a bloom.

Sanitation is the key to preventing the spread of this disorder. Once a plant is infected with aster yellows, it can never be cured. The disease is not lethal, but considering the plant becomes unsaleable, aesthetic value is all but eliminated, and it's best to start again with a clean crop. Prompt removal—at the first emergence of symptoms—may help to stem the spread of the disease to nearby plants.

Planting less susceptible plants can help to prevent aster yellows, but because so many popular varieties are vulnerable, this is no easy task. So far, verbena, salvia, nicotiana, geranium, cockscomb and impatiens have proved to be among the least susceptible; be vigilant and diagnose early. Remove weeds that may harbour the disease as you don't want them in the crop area. Insect control is critical. Some research has been conducted in the US by placing strips of aluminium foil between the plant which give off bright reflections of sunlight and confuse the leafhoppers.

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Diagnosing Aster Yellows can be difficult especially as some of the eriophyid mite family can cause some plants to show similar symptoms as well as some herbicides. Infected foliage can be discoloured and twisted. The normal green may be replaced with yellow or red. Hosts of aster yellows may first show the unsightly witches broom of terminal growth. Tall plants may appear bushy and stunted. Leaf veins often turn yellow or white before the entire leaf becomes chlorotic or lacking the chlorophyll green the plant needs to survive. This is the opposite of nutrient deficiency where the veins remain green.

Carrots with red leaves and bitter tap roots dotted with white fuzz are indicative of aster yellows.

Lettuce may show pink or tan spots and have twisted inner leaves. On flowers, the disease may cause twisted heads that remain green or as with marigolds, blossom in a muddy orange mess.

Flowers usually fail to produce seeds. See <https://www.youtube.com/watch?v=ovEyqFXeLrQ>

Species that can host of be affected by Aster Yellows

Plant name	Plant name
Allium cepa (onion)	Epilobium (willowherbs)
Allium sativum (garlic)	Eryngium alpinum
Alstroemeria (Inca lily)	Cyclamen persicum (cyclamens)
Anethum graveolens (dill)	Dicentra spectabilis (bleeding heart)
Apium graveolens (celery)	Echinacea purpurea (purple coneflower)
Asparagus officinalis (asparagus)	Eschscholzia californica (california poppy)
Avena sativa (oats)	Eucalyptus
Bellis perennis (common daisy)	Euphorbia pulcherrima (poinsettia)
Beta vulgaris (beetroot)	Fragaria ananassa (strawberry)
Bougainvillea spectabilis (Bougainvillea)	Freesia
Brachyscome multifida	Gaillardia pulchella (Indian blanket)
Brassica napus var. napus (rape)	Geum coccineum
Brassica oleracea var. capitata (cabbage)	Gladiolus hybrids (sword lily)
Brassica oleracea var. italica (broccoli)	Hibiscus rosa-sinensis (China-rose)
Brassica rapa subsp. rapa (turnip)	Hordeum vulgare (barley)
Bunias orientalis (Turkish warty-cabbage)	Humulus lupulus (hop)
Calendula officinalis (Pot marigold)	Hyacinthus orientalis (hyacinth)
Callistephus chinensis (China aster)	Hydrangea macrophylla (French hydrangea)
Cannabis sativa (hemp)	Lactuca sativa (lettuce)
Chrysanthemum morifolium (chrysanthemum (florists'))	Larix (larches)
Cirsium arvense (creeping thistle)	Lilium (lily)
Clarkia unguiculata	Lupinus (lupins)
Cocos nucifera (coconut)	Magnolia
Conyza canadensis (Canadian fleabane)	Malus domestica (apple)
Coreopsis lanceolata	Malva (mallow)
Coreopsis tinctoria	Myrtus communis (myrtle)
Coriandrum sativum (coriander)	Olea europaea subsp. europaea (olive)
Cornus racemosa (gray dogwood)	Populus nigra (black poplar)
Corylus avellana (hazel)	Primula sp. (primrose)
Cucurbita moschata (pumpkin)	Prunus armeniaca (apricot)
Prunus persica (peach)	

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Plant name

Prunus persica var. nucipersica (nectarine)
Rhododendron (Azalea)
Solanum lycopersicum (tomato)
Solanum tuberosum (potato)
Solidago (Goldenrod)
Spinacia oleracea (spinach)
Stellaria media (common chickweed)
Tagetes patula (French marigold)
Trifolium pratense (purple clover)
Solanum melongena (aubergine)
Solanum tuberosum (potato)
Solidago (Goldenrod)
Spinacia oleracea (spinach)
Stellaria media (common chickweed)
Tagetes patula (French marigold)
Trifolium pratense (purple clover)
Trifolium repens (white clover)
Vaccinium (blueberries)
Vitis vinifera (grapevine)
Zea mays (maize)

Plant name