



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.

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

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

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Plant name

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)

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