



Apple Chlorotic Leafspot Virus (ACLSV)

Trichovirus

Synonyms

- pear ring pattern mosaic virus
- applet latent virus type 1
- plum pseudopox virus
- quince stunt virus

Plant hosts

- Major hosts: *Cydonia oblonga* (quince), *Malus* (ornamental species apple), *Malus domestica* (apple), *Malus platycarpa*, *Prunus armeniaca* (apricot), *Prunus avium* (sweet cherry), *Prunus cerasifera* (myrobalan plum), *Prunus cerasus* (sour cherry), *Prunus domestica* (plum), *Prunus persica* (peach), *Prunus salicina* (Japanese plum), *Prunus spinosa* (blackthorn), *Prunus tomentosa* (Nanking cherry tree), *Pyrus communis* (European pear), *Pyrus pyrifolia* (oriental pear tree)
- Minor hosts: *Amelanchier canadensis* (thicket serviceberry), *Chaenomeles* (flowering quinces), *Crataegus monogyna* (hawthorn), *Crataegus rhipidophylla* (Midland hawthorn), *Mespilus germanica* (medlar), *Sorbus aucuparia* (mountain ash)

Symptoms

Symptoms can be highly variable and depend on the virus strain and the host species or cultivar infected.

In sensitive *Malus* cultivars, symptoms can include chlorotic leaf spots and/or ring and line patterns on foliage, asymmetric leaf distortion, premature leaf drop, stunting, terminal dieback, inner bark necrosis and xylem pitting, and local bark necrosis surrounding the inoculum buds (Mink, 1989).

In plum, the virus can cause bark splitting and mild pox symptoms sometimes mistaken for plum pox. Symptoms include brownish-red areas on the bark followed by severe cracking and splitting. Necrosis may proceed to the cambium and can lead to branch die back. The development of the tree is slowed and a vigorous growth of suckers around the tree base occurs (Németh, 1986).

While plum pseudopox, caused by ACLSV infection, decreases the market value of fruit from infected trees, the losses do not compare to those attributable to plum pox virus (Németh, 1986). Symptoms of the disease are usually restricted to sunken spots, bands or rings on the skin of fruit, although in individual trees, leaf symptoms may also occur (Németh, 1986). Fruit symptoms of pseudopox are difficult to distinguish from those of plum pox, but leaf symptoms are more distinct.

The disease known as 'apple ringspot' is believed to be caused by dual infections with ACLSV and a severe strain of Apple stem pitting virus. Most varieties of sweet cherry and sour cherry are latently infected by ACLSV, although in some cultivars the appearance of necrotic, sunken spots on the fruits has been associated with dual infection by ACLSV and *Prunus* necrotic ringspot virus (Németh, 1986).

As with other susceptible fruit trees, in peach the virus often causes graft-incompatibility, leading to necrosis and early decline. It can also cause dark-green, sunken spots or wavy lines on peach leaves (Németh, 1986).

In apricot, the virus can cause rosetting as well as fruit symptoms resembling apricot ring pox. The sensitivity of some apricot seedling rootstocks to the virus may also cause graft-incompatibility (Németh, 1986; Hansen, 1995).



Symptomatic apple chlorotic leafspot virus leaf

Transmission

The virus is transmitted by mechanical inoculation and by grafting (possibly by root grafts). According to an unconfirmed report, it may also be transmitted by nematodes. It is not transmitted by seeds.

Geographic distribution

ACLSV is likely distributed worldwide in locations where natural hosts are cultivated. It is known in the Eastern Asian region, the Eurasian region, the North American region, the Pacific region and Australia, China, and New Zealand.

Applicable regulations

Apple chlorotic leafspot virus is a pathogen of concern to Oregon's interstate and international customers. The Commodity Inspection Division provides [virus testing](#) for this virus.