

Cedar apple rust

What is Cedar apple rust?

Cedar apple rust (*Gymnosporangium juniperi-virginianae*) is a fungal pathogen that causes lesion development in apples. Significant impacts on apple production only occur when apple trees are in close proximity to the alternate host, *Juniperus virginiana* (cedar). In addition to the development of lesions, Cedar apple rust can produce a number of spore producing structures on the apple surface and also causes severe canker development in cedars.

What does it look like?

Cedar apple rust requires both *Juniperus* and apple host trees to complete its lifecycle. The symptoms produced by this pathogen vary depending on the life cycle stage and host species.

On apples, small yellow-orange lesions appear on the upper surface of the leaves and petioles. In some susceptible apple varieties, small (up to 17 mm) yellow-brown tufts of spore-producing structures appear on the lower surface of the leaves and occasionally fruit, a few weeks later. Stems may show slight swelling and young fruit may abort. On fruit, the more common Cedar apple rust symptoms are slightly raised bright yellow-orange lesions, which may become brown and cracked as the fruit enlarges.

On *Juniperus* hosts, Cedar apple rust causes the development of galls on twigs and branches. These galls, known as 'cedar apples', produce a number of finger-like protrusions from the host tissue.

What can it be confused with?

When present on apples, Cedar apple rust can produce similar lesion symptoms to other bacterial and fungal diseases. However, the development of yellow-brown tufts of spore-producing structures or galls can distinguish Cedar apple rust.



Initial symptoms include bright yellow-orange lesions on leaves

University of Georgia Plant Pathology Archive, Bugwood.org



Rust lesions develop on both leaves and fruit

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Small yellow-brown tufts of spore-producing structures can be produced on the fruit surface

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The lesions may cover a large proportion of infected leaves

How does it spread?

The most likely means of spread is by the movement of infected plant material. While apple leaves and fruit can spread the pest, the most likely means of movement is as infected *Juniperus virginiana* material.

Where is it now?

Cedar apple rust is currently restricted to North America.

How can I protect my orchard from Cedar apple rust?

Source plant material only from clean, accredited suppliers, and preferably material that is certified. Check your orchard frequently for the presence of new pests and unusual symptoms. Make sure you are familiar with common pome fruit pests so you can tell if you see something different.

If you see anything unusual, call the Exotic Plant Pest Hotline

**EXOTIC PLANT PEST HOTLINE
1800 084 881**



Division of Plant Industry Archive, Florida Department of Agriculture and Consumer Services, Bugwood.org

Spore-producing structures can also be produced from the leaf surface



Jerry A. Payne, USDA Agricultural Research Service, Bugwood.org

Cankers, or cedar apples, produced on *Juniperus virginiana*