

Pear and apple rust diseases can be caused by several different fungi. They will cause yellow, rust, or bright orange spots to appear on the leaves, fruit, twigs, and branches of pear trees (most common), apples, and some other plants. While a minor outbreak won't seriously damage your tree, it is unsightly, and heavy infestations can weaken the tree over time. If left uncontrolled, infections may worsen and kill the tree. Understanding the life cycle will help with timing of the management if required.

Life cycle

Rust fungi's life cycle is split between two different hosts: a deciduous and an evergreen plant. On the deciduous plant the fungi cause yellow, rust, or bright orange leaf spots to appear on leaves, fruit, twigs, and branches in late summer to fall. These erupt and spread spores to the evergreen host, which forms galls (swollen growths). In early spring the galls erupt into gelatinous tongues that release spores to the wind which land on leaves and fruit on the deciduous plant.

Trellis Rust (European Pear Rust) begins on junipers (*J. chinensis*, *J. sabina*, *J. scopulorum*, and *J. virginiana*) then moves to ornamental pears, Asian pears, and European pears. **This is the most common variety in the Pacific Northwest at the present time.**

Pacific Coast Pear Rust begins on incense cedar (*Calocedrus decurrens*) trees, then moves to apple, hawthorn, mountain ash, pear, quince, and serviceberry plants.

Cedar Apple Rust begins on Eastern red cedar (*Juniperus virginiana*) then moves to various members of the rose family such as serviceberry, apple, and pear. It's not common in the Pacific Northwest but you do see it sometimes.

Management

Plant resistant varieties. **Cedar Apple Rust resistant** apple cultivars include Akane, Ashmead's Kernel, Early Pink Lady, Enterprise, Granny Smith, Liberty, and Spartan. Bartlett pear is resistant to **Pacific Coast Pear Rust**. No cultivars are listed as resistant to **Trellis Rust**.

If possible, remove the evergreen hosts within a 1,000-ft radius for Trellis Rust, 6 to 10 miles for Pacific Coast Pear Rust, and 2 miles for Cedar Apple Rust. Fungus does not respect boundaries or fences -- it will blow in from your neighbors.

Fungicides applied in the spring can prevent or reduce Cedar Apple Rust disease. No home-use chemicals are listed for Pacific Coast Rust or Trellis Rust. If spraying is necessary, locate a company which sprays fruit trees.

Spraying to Limit Cedar Apple Rust:

- Start applying fungicides at leaf bud break (1/4-inch green tip) and/or when you see that local junipers have swollen cankers (orange gelatinous globs) in early spring.
- Repeat at 7-to-14-day intervals, using the shorter interval if it's rainy.
- When trees are in bloom, stop spraying to protect bees. Wait until at least 3/4 of the petals have fallen before spraying again.
- Homeowners are not advised to spray trees over 10 feet tall. Consult a commercial pesticide applicator for treatment of taller trees and shrubs.
- **Always follow label instructions.**
- **If your rust is NOT Cedar Apple Rust, do not spray.**

Organic Fungicide Sprays to Limit Cedar Apple Rust

Copper: Bonide CAPTAIN JACK'S™ Liquid Copper Fungicide

Biological: Bonide Revitalize Bio-fungicide

Copper is a protective fungicide with no curative properties; it must be used before symptoms appear. Revitalize is a bacteria-based immune stimulator for plants; it will help to suppress rust; but does not eradicate it.

Chemical Fungicides to Limit Cedar Apple Rust

Bonide Fung-onil

Begin application when plants are in the first true leaf stage or when conditions favor disease development. Repeat applications at 7 to 14-day intervals. This product can be harmful to bees, so be sure not to allow spray on nearby flowers.

Conclusion

Unfortunately, the Pacific Northwest is an ideal environment for rust because of our wet springs. Fungal infection management, when necessary, is best started early and applied consistently through the infection period and after it rains. Don't expect complete control; less disease is the goal. An acceptable crop can be expected most years. Years will be variable in the amount of rust that occurs.

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