

Cedar apple rust is a fungal disease that needs both an eastern red cedar and a fruit bearing tree to complete its life cycle. The disease infects species of the rose family, including select varieties of apples and less commonly, pears, and Asian pears. Infections in succeeding years can lead to decreased fruit production and reduced growth.



## Symptoms:

### Apple or Pear:

- Severe orange, red, or yellow leaf spotting
- Spotting or lesions on fruit
- Can lead to early defoliation and decreased flower bud production

### Eastern Red Cedar:

- Swollen growths or woody galls (abnormal growths) on branches or shoots
- Bright orange, gelatinous, horn-like growths emerging from galls in early spring

## Timing:

- Spores are released from gall in response to rain in the spring between March and mid-May.
- Infection occurs if the leaf wetting period lasts long enough (usually at least 4 hours) and temperatures are between 46-75° F (8-24° C).

## How to Avoid:

- Purchase apple varieties that have a higher degree of resistance to cedar apple rust
- Avoid planting susceptible varieties near Eastern red cedars
- Consider removing Eastern red cedars adjacent to the orchard
- Rake up and dispose of fallen leaves and fruits from under the tree in the fall.

## How to Treat:

- Copper and sulfur fungicides do have some efficacy when applied in mid-spring, before and as galls sporulate (which may require more than one fungicide application).
- Michael Phillips, from The Holistic Orchard, suggests making sprays from garlic (*Allium sativum*), stinging nettle (*Urticadioica*) or horsetail (*Equisetum arvense*), which have effectiveness in combatting the fungus but require attention to detail. (See page 184 in "The Holistic Orchard.")

Sources: MyIPM, Cornell University Plant Disease Diagnostic Clinic, Cornell Tree Fruit IPM, Penn State Extension, Iowa State Extension and Outreach, Patrick L. Byers, Horticulture Specialist, and Michael Phillips, "The Holistic Orchard."