

**Problem:** Pear Rust



Rust on Pear



Cedar-Hawthorn Rust (this is what causes pear rust)



Cedar-apple Rust Gall on Juniper (this is what you look for to determine when to spray)

**Host Plants:** Pear, Hawthorn

**Description:** During the summer, many people notice yellow-orange spots on the leaves of their ornamental or fruiting pear trees. These spots begin in the late spring on the upper surface of leaves, approximately  $\frac{1}{8}$  to  $\frac{1}{4}$  inch in diameter. Gradually they enlarge and turn orange during the summer months. Though these spots resemble the cedar-apple rust spots on apple leaves, they are caused by a slightly different organism. Pear leaves are **infected with cedar-hawthorn rust** rather than cedar-apple rust. Though cedar-hawthorn rust is different than cedar-apple rust, both diseases work the same and the control is exactly the same as well. This disease **causes primarily only aesthetic damage on ornamental pear trees**, and is considered a **nuisance problem**, rather than causing significant harm to the health of the tree. Therefore, **control is optional, and generally not recommended** unless the tree experiences substantial leaf drop.

**Recommendations:** A control for rust diseases must only be applied preventatively. Once the symptoms are visible on the leaf, it is too late to do anything about pear rust, especially once the month of May is over. The fungus that causes rust is only active in April-May time period, which is when the disease infection occurs on pear trees. If you would like to control the disease the following year, consider using a fungicide next year that contains the active ingredient myclobutanil (Immunox, Fungi-Max or Fertilome F-Stop Lawn & Garden Spray). There are other fungicides that will work but those with myclobutanil have an advantage. Most fungicides must be present on the foliage before the disease spore germinates or they are ineffective. Myclobutanil will kill the rust spore up to 4 days after it germinates. This can be very beneficial in disease control.

Normally to control rust on pear trees, the recommendation is that trees be sprayed every 7 to 10 days starting at the beginning of April until the end of May. However, since we have this 4-day kickback with myclobutanil, we can wait until we actually see evidence of spores being released before we spray. How do we do that? First of all, remember that cedar-apple rust and cedar-hawthorn rust must go back and forth between junipers (cedars) and apples (or pears in this case). The spores from junipers can only infect apples or pears and those from apples or pears can only infect junipers. Therefore, we look at the juniper to see when to spray either apples or pears.

When you see the orange globs (galls) on the junipers, you know you have 4 days to spray the apples and/or pears. These orange globs are actually cedar-apple rust but cedar hawthorn rust develops under the same environmental conditions. We use cedar-apple rust as the visual signal because it is much more noticeable on the juniper. If you see cedar-apple rust, cedar-hawthorn rust is also likely present. It is also important to note that the orange galls only develop during rainy, spring weather. The rust disease has a minimal effect on junipers, so no control is need to protect juniper or cedar trees.

In cases where repeat leaf defoliation is a problem with the pear tree, or the aesthetic damage cannot be tolerated, watch the cedar trees during any rainy period between April and May. When the overwintering rust galls bloom their orange, gelatinous tentacles (orange galls appear) get ready to spray. You have 4 days to apply your myclobutanil fungicide. Once May is over, you are done.

## References:

1. [Cedar-Hawthorn Rust](#), University of Illinois Extension, Focus on Plant Problems
2. [Rust Diseases of Apple in the Home Fruit Planting](#), Penn State Extension

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