

Natter's Notes

Pear Trees: Rust, times 2

Jean R. Natter

Pear trees are having a rough time of it this spring. It seems that this year supplied the perfect conditions for rust on pears. So, let's compare and contrast the two important rust diseases of pears in Oregon. Recall that cedar-apple rust is not an issue in our region.

Seven different *Gymnosporangium* species cause rusts on members of the rose family in Oregon. For this discussion, let's differentiate between Pacific Coast Pear Rust (*G. libocedri*) and Trellis Pear Rust (*G. sabinae*).

Most rust fungi have two different hosts: the primary host -- in this case, pear-- on which growth and yield may be severely affected and a secondary host which typically displays subtle effects. With both diseases, pear trees exhibit brilliant orange spores on affected tissues, spores which readily rub off.

Pacific Coast Pear Rust is a well-established disease in the northwest and, this spring, is on a spree infecting leaves, twigs, blossoms, and newly set fruit. All ages of trees are affected, from venerable specimens to newly planted saplings. Incense cedar is the alternate host.

Trellis rust, aka European Pear Rust, was found in western Oregon in 2016. It's considered well - established in western Washington, coastal British Columbia and Contra Costa County, CA. Known infections in Oregon are in Benton, Marion, and Clackamas Counties. Junipers are the alternate hosts.

Differentiating between these two rust diseases of pear relies on careful examination of symptoms on submitted sample(s) and images. Both rusts sport bright orange, powdery spores on pears. A diagnostic symptom for the trellis variety is an "acorn-like" eruption on the backs of leaves later in the season.

Be certain to ask about potential alternate hosts nearby. Both alternate hosts of these pear rusts ooze orange gel



Numerous powdery, bright orange spores are present on leaves, twigs, blossoms, and fruits in Pacific Coast Pear Rust, as is shown here and in Trellis Pear Rust. (Client image; Lincoln County; 2012-05)



Bright orange gel forms on branches and leaves of incense cedar, the alternate host for Pacific Coast Pear Rust, during wet spring weather, and commonly while pears are in bloom. (Client image; Multnomah County; 2011-04)



Aecia (fungal fruiting structures) on top surface of leaf in Trellis Pear Rust. (Client image; Clackamas County; 2016)

during wet spring weather. Off-season, affected junipers have subtle, elongated galls while incense cedars may develop a more obvious symptom, witches' broom(s). (<http://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/pests-and-problems/diseases/witches-broom.aspx>)

Management choices are limited for home gardeners who fear for their fruit crop.

- **Sanitation** –The common advice to collect and discard affected parts is unlikely to limit rust unless alternate hosts are removed.

- **Resistant varieties** – Growing resistant varieties is commonly suggested for disease management for backyard trees. In pear rust, both Asian and European kinds are affected. 'Bartlett' is usually less affected while 'Winter Nellis' is severely affected. Resistant varieties aren't listed for trellis rust.

The PNW Disease Handbook states "Eliminating either host [primary or secondary] is the only practical cultural control." For Pacific Coast Rust the PNW says "Remove alternate hosts around the orchard." (It also states that, spores from the gel on incense cedar can be blown for 6 to 10 miles.) The advice is more specific for trellis rust: "Remove all junipers within 1000 feet."

- **No home-use chemicals** are listed for either rust. So, the gardener's next predicament is to locate a company which sprays fruit trees. Clients will need to research local companies that spray landscape trees. (I found that company websites usually offer a link to "contact us" while some list a phone number. You've heard it before: Let your fingers do the walking.)

Resources

Pear Trellis Rust

- Pear, primary host -
<https://pnwhandbooks.org/plantdisease/host-disease/pear-pyrus-spp-trellis-rust-european-pear-rust>

- Juniper, secondary (alternate) host-
<https://pnwhandbooks.org/plantdisease/host-disease/juniper-juniperus-spp-pear-trellis-rust>

Pacific Coast Pear Rust

- Pear, primary host -
<https://pnwhandbooks.org/plantdisease/host-disease/pear-pyrus-spp-pacific-coast-pear-rust>
- Incense cedar, secondary (alternate) host-
<https://pnwhandbooks.org/plantdisease/host-disease/juniper-juniperus-spp-pear-trellis-rust>



Trellis Pear Rust, also called European Pear Rust, on back surface of leaf. Notice the emerging aecia ["bumps"] which will become the "acorns" in image, below. (Client image; Multnomah County; 2017-09)



"Acorn-like" eruptions on the back of leaves are diagnostic symptoms of Trellis Pear Rust. (From 2018 PNW Disease Handbook: Neil Bell; 2016-10)