



# Pest e-alerts



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Vol. 16, No. 14

<http://entopl.okstate.edu/pddl/pddl>

4/4/2017

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## Cedar-Apple and other Gymnosporangium rusts

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Throughout Oklahoma, Gymnosporangium rusts are active on Eastern red cedar (*Juniperus virginiana*) and other plants in the Cupressaceae family. The disease is visible on cedars as orange gelatinous galls or blobs on the needles or branches (Figure 1).



**Figure 1:** Orange gelatinous masses of *Gymnosporangium* rusts on Eastern red cedar needles and branches.

Gymnosporangium diseases are unique because they cycle between a host in the Cupressaceae family and the Rosaceae family. Common Rosaceous hosts include apple, crabapple, pear, hawthorn and quince. There are several species of *Gymnosporangium* rusts in Oklahoma which include *G. juniperi-virginiana* (cedar-apple rust), *G. globosum* (cedar-hawthorn rust), *G. asiaticum* (Japanese pear rust), and *G. clavipes* (cedar-quince rust).

Although Gymnosporangium rusts may be concerning to clients, they are unlikely to cause serious harm to the evergreen hosts. If the disease is limited to a few branches, the client could remove the limbs or galls by pruning. Fungicides are not recommended on the conifer hosts at this time, but can be applied to the broadleaf hosts. Preventative applications of fungicides at this time (while the gelatinous matrix is active) may prevent premature leaf drop and reduced production of fruiting trees. Many fungicides are labeled for control of rust diseases including azoxystrobin, chlorothalonil, copper, mancozeb, myclobutanil, propiconazole, sulfur, thiophanate methyl, and triadimefon. Confirm that the product is labeled for rust diseases on the host(s) to be treated. It is important to remember that fungicides labeled for landscape ornamentals may not be the same products that are labeled for trees with edible fruits. If label guidelines are not followed, the fruits cannot be consumed this season.

As the spring progresses, lesions will develop on the Rosaceous hosts. Circular lesions will be visible on the upper leaf surface by May (Figure 2). As the spring and summer progress, the rust will produce structures that emerge from the underside of the leaves or on fruits of the Rosaceous hosts (Figure 3). Spores will tumble from these projections and blow to the cedar hosts. Spores may be produced from June-September, especially during periods of wet weather. At that time, fungicides (listed above) may be applied to the conifer host to prevent infections. Although infections on the cedars occur in the summer, these new infections will not produce spores for nearly 2 years (18-20 months). At that time, the cycle repeats with in the spring when fungal spores are developed in the orange gelatinous matrix.

Gymnosporangium rusts may be visible every year, but some years (including this one) are more favorable for development of spore structures, so infections on the broadleaf hosts are expected to be more significant than normal



**Figure 2:** Early symptoms of rust on ornamental pear in the landscape. Lesions will enlarge throughout the summer.



**Figure 3:** Rust spores will release from the white projections on these crabapple fruits and blow to cedar hosts to start new infections.

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