



## Arkansas Plant Health Clinic Newsletter

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### Pear and Apple

Days of rain have made ideal conditions for rust diseases. There are many species of rust that attack pear and apple trees. Most require juniper species as an alternate host. These rusts also attack hawthorn, quince, mountain ash, and other rosaceous species. Cedar Apple rust is the most economically important rust seen east of the Rocky Mountains. It can cause serious yield loss and almost total defoliation in susceptible cultivars.

Galls on cedar trees exude bright orange tentacles during wet weather in the spring. The tentacles, (telial horns), become swollen and jelly-like during rains and produce teliospores. Pears do not get Cedar Apple Rust but get rust from other species of *Gymnosporangium*. With all species of *Gymnosporangium* teliospores produce basidiospores which infect nearby apples and other members of that family. Orange-brown lesions, pycnidia, appear on the upper side of pear or apple leaves a few weeks after infection. One to two months after the appearance of the lesions on the upper leaves, aecia develop on the underside. The spores from the aecia infect nearby cedars and junipers and begin the cycle over again. First symptoms are yellow to orange-red spots on the upper sides of the leaves and on fruit. Leaves 4-8

days old are the most susceptible, and fruit is the most susceptible from the tight cluster stage until just after petal fall. Fungicides such as Captan should be used at pink bud stage on susceptible ornamental and fruit trees until 30 days after petal fall. Removal of wild cedars within a ½ to 1 mile radius of orchards breaks the cycle. Galls should be pruned out of landscape junipers during the dormant season. It is helpful to plant rust resistant fruit trees. Resistant apples are Delicious, Empire, Jonamac, McIntosh, Paulared, Priscilla, and Tydeman's Early Worchester. Resistant crabapples are Ellwangerina, Henry Kohankie, Ormiston Roy, and Red Baron. Resistant junipers include *Juniperus chinensis* var. *sargentii*, *J. communis* cv. *Aureospica*, *J. virginiana* cv. *Tripartia*

### Cedar Apple Rust- *Gymnosporangium juniperi-virginianae*



Photo by Rick Cartwright, University of Arkansas Cooperative Extension



## Apple Leaves with Cedar Apple Rust-*Gymnosporangium juniperi-virginianae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Quince Rust on Pear-*Gymnosporangium clavipes*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Quince Rust on Pear-*Gymnosporangium clavipes*



Photo by Robert Rhodes, University of Arkansas Cooperative Extension

## Oak

Prolonged wet weather has also led to increased numbers of oak samples with Oak leaf blister. This disease is caused by the fungus *Taphrina caerulescens*. Symptoms appear in early summer as yellow, blister-like, circular, raised areas, 1/16 to 1/2 inch in diameter. The blisters are scattered over the upper leaf surface with corresponding gray depressions on the lower surface. They turn from yellow to brown with pale yellow margins, becoming dull brown with age. Several blisters may coalesce and cause the leaves to curl. Although unsightly, the disease usually does not greatly impact tree health. Control consists of raking up all fallen leaves and twigs, the application of preventative fungicides where practical. One application of Chlorothalonil, copper, or mancozeb during dormancy is effective. Fungicides do not have any effect after bud swell in the spring.





## Oak Leaf Blister- *Taphrina caerulescens*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Oak Leaf Blister- *Taphrina caerulescens*



Photo by Rick Cartwright, University of Arkansas Cooperative Extension

## Squash

Squash can suffer from several viruses common to Cucurbitaceae. Zucchini Yellow Mosaic Virus, (ZYMV), is an important virus found worldwide. It can sometimes cause enormous crop losses. Symptoms on leaves are extreme distortion, dark green blisters, and filiform or lacinate leaves. Fruits commonly are greatly distorted and have knobs, swellings, and cracks. ZYMV is vectored by aphids, can be seedborne, and may even be spread on knives during harvest. Virus is not curable. There are resistant strains available.

## Squash Zucchini Yellow Mosaic Virus (ZYMV)-*Potyvirus*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension



## **Rice herbicide damage** by Bob Scott

Glyphosate drift on small rice has now been detected in at least two counties in Arkansas. Symptoms include chlorosis or yellowing of the leaves, death of one or more tillers, and necrosis of leaf tips. In most drift cases injury will be worse near the source of the glyphosate. Often injury will occur on only one side of the levees if pulled. This also will be an indication of the directions that the drift came from.

## **Rice Glyphosate Damage-Abiotic**



Photo by Bob Scott, University of Arkansas Cooperative Extension

## **Rice Glyphosate Damage-Abiotic**



Photo by Bob Scott, University of Arkansas Cooperative Extension

This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

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