



Arkansas Plant Health Clinic Newsletter

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Onion

White Rot, caused by *Sclerotium cepivorum*, is a destructive, widespread disease of onion and garlic crops. All members of the *Allium* family are susceptible, including chives, shallots, leeks, onion, and garlic. Infected plants are usually stunted with yellowed foliage. White fluffy mycelial growth on the stem plate extends around the base of the bulb, moving up the bulb and inward through the storage leaves, causing a soft rot. Small, black, poppy seed-sized sclerotia form in the dying tissues. The sclerotia can remain dormant in the soil for many years until the roots of host plants begin to grow nearby. Sclerotia then germinate, and the mycelia typically grow up to several inches through the soil to attack the roots and bulb of the plant. However, sclerotia have been known to cause bulb decay when located as deep as 12 inches below the bulbs. Sclerotia can be spread throughout a planting area by flood water, equipment, or on plant material. This is a very difficult disease to control. Fungicides provide only marginal control when inoculum levels are high, and conditions are conducive for disease development. Rovral 75WG and Folicur 3.6F are labeled for use in commercial fields. Wider spacing between plants can slow

the spread of White Rot. Homeowners with small plots may consider replacing the soil altogether. Soil solarization may have some benefits. The area to be solarized should be raked clean, thoroughly wetted, and clear plastic placed over the area. The plastic should be left in place for 4-6 weeks. Warm season flooding of the soil has been found to greatly reduce the number of sclerotia as this is a cool season pathogen. Boots and tools should be cleaned to prevent accidentally moving the pathogen to new areas. Gardeners who grow onions in infected soils have less infection generally by planting seed instead of onion sets. This is because the seedlings have a smaller root mass, thus fewer chemical signals, at the time temperatures are optimal for disease development.

Onion White Rot-*Sclerotium cepivorum*



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

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Onion White Rot-*Sclerotium cepivorum*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Juniper

The Clinic is beginning to receive samples of Cedar-Quince Rust, (*Gymnosporangium clavipes*) and Cedar-Apple Rust, (*Gymnosporangium juniperi-virginianae*). Both rusts have a similar life cycle. In the spring the Cedar-Quince Rust fungus produces perennial, spindle shaped galls on cedars or junipers. These galls produce masses of gelatinous orange-brown teliospores. Cedar-Apple Rust galls produces large gelatinous balls. In both types of rust, teliospores produce basidiospores which are carried to members of the rose family, such as pear, quince, apple, crabapple, and

hawthorn. Both fungi stop producing the basidiospores about 30 days after the apples stop blooming. Galls on both cedar and the alternate host can cause stems to die if they are completely encircled. Cedar-Quince Rust is more likely to attack the fruit and stems than the leaves of the alternate hosts, whereas Cedar-Apple rust commonly attacks leaves, often leading to defoliation. Aeciospores develop in the fruit, leaf, and stem lesions and are blown to cedars where the cycle begins again. Each year the perennial rust galls of Cedar-Quince Rust become larger and more noticeable, with older galls becoming dark brown to black in color. Fruit from the alternate host infected with a cedar rust is covered with protruding off-white aecia of the fungus. Infected fruit eventually dries out and drops from the plant. Control begins with good sanitation. Prune out any galls found on alternate host junipers and cedars. During the winter, prune out all cedar-quince rust galls remaining on branches and twigs of apples, crabapples, quince, hawthorn, and pears. Preventive fungicide applications are necessary in locations where Cedar-Apple and Cedar-Quince Rusts are problems. Fungicide timing is similar for all the cedar rusts. Make the first application to valuable orchard and landscape plants when the orange telial galls on junipers become noticeable, (usually at flower bloom on apples and hawthorns) and make additional applications at regular intervals to protect newly developing growth. Applications of a triazole fungicide such as propiconazole, (Banner Maxx), myclobutanil, (Immunox), or triadimefon, (Bayleton, Strike, Green Light Fung-Away, Monterey Fungi-Fighter), at three-week



intervals beginning shortly after bloom is effective in suppressing rust.

Cedar-Apple Rust-*Gymnosporangium juniperi-virginianae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Cedar-Apple Rust-*Gymnosporangium juniperi-virginianae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Cedar-Quince Rust-*Gymnosporangium clavipes*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Sunburn

Houseplants and bedding plants are prone to sunburn when moved from inside to outside without hardening the plant, by exposing it gradually to full sun. Symptoms are leaves



turning a whitish-gray color as the chloroplasts inside the leaves are fried. Gradually acclimate plants to full sun to avoid this problem.

Pepper Sunburn-Abiotic



Photo by Sherrie Smith, 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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Tomato Sunburn-Abiotic



Photo by Cindy Ham, University of Arkansas Cooperative Extension

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