



## **Arkansas Plant Health Clinic Newsletter**

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### **Daylily**

Daylily Rust caused by the fungus *Puccinia hemerocallidis* can be a serious disease of daylily. Daylily Rust is native to Asia, commonly found in China, Japan, Korea, Taiwan, and Russia. It was first identified in the United States in August of 2000 in the southeastern part of the country. The disease moved rapidly throughout the country and by the fall of 2001, it had been identified in over 30 states. Although it rarely outright kills the plant, it disfigures and weakens it. The spores of Daylily Rust are normally spread by wind, but here in the states infected nursery plants spread the disease. Newly purchased plants should be carefully checked for signs of rust. Symptoms on susceptible cultivars are raised pustules with a yellow to orange powder of spores. The leaves and scapes become yellowed, then necrotic. Infected leaves eventually shrivel up. Resistant varieties may only get a few flecks instead of pustules. Prevention is the most desirable control. There are resistant cultivars available. All new daylilies should be carefully inspected prior to purchase for signs of rust. Management of existing infections consists of immediately bagging affected foliage to prevent spread of the spores, cutting it to the ground and destroying

the clippings. Homeowners may use Ortho Garden Disease Control, or Bonide Fung-onil, or Garden Tech Daconil Concentrate, or Hi-Yield Vegetable, Flower, Fruit and Ornamental Fungicide, or Monterey Fruit Tree, Vegetable, and Ornamental Fungicide, or Fertilome Broad Spectrum Lawn and Garden Fungicide, or Bonide Mancozeb FL with Zinc, or Ferti-lome F-Stop Lawn and Garden Fungicide, or Spectracide Immunox Plus Insect and Disease Control for Gardens, or Spectracide Immunox Multi-Purpose Fungicide Spray for Gardens, or Bio Advanced Science-based Solutions All-In-One Rose and Flower Spray, or Bio Advanced Garden-Disease Control for Roses, Flowers, Shrubs.. Organic growers may use Serenade Garden Disease Control, or GreenCure, or Kaligreen, or Milstop, or Actinovate Biological Lawn and Garden Fungicide.

### **Daylily Rust-*Puccinia hemerocallidis***



**Photo by Sherrie Smith, University of Arkansas  
Cooperative Extension**



## Pea

One of the most important diseases of garden pea, (*Pisum sativum* L.) is *Ascochyta* blight. Three different species of *Ascochyta* have been identified as causal agents, *Ascochyta pisi*, *A. pinodes*, and *A. pinodella*. Yield losses may be significant when environmental conditions are conducive for disease development, with disease development favored by temperatures between 20 to 21°C and high relative humidity. Disease normally will not develop at temperatures below 4°C and above 35°C or when periods of leaf wetness are less than 6 hours. All growth stages of the pea are susceptible and all above ground parts may be affected. Early symptoms are first observed under the plant canopy on lower leaves, stems, and tendrils, where conditions are more humid. Purplish black to brown flecks enlarge and coalesce, resulting in the lower leaves becoming completely blighted and falling off. Lesions may appear on stems, leaves, tendrils, and pods. Pod lesions may become sunken. Black spore producing structures may be observed in these lesions using a hand lens. Advanced stem infections may lead to girdling near the soil line, which is known as foot rot. These lesions may extend underground and eventually cause lodging. The fungi can overwinter in seed, infected crop residue, and in the soil. Seed infection can negatively affect stand and vigor. Most years *Ascochyta* blight is not a problem since the seed industry started growing seed crops in more arid parts of the country. Pathogen-free seed remains the best course of defense. Never-the-less, in years with unseasonal rainfall contaminated seed may still

be found, and seed contamination remains a periodic problem. Crop rotation of four years is recommended, even though it may have minimal impact in reducing *M. pinodes* or *P. pinodella*. Burial of infested crop residue with cultivation is also recommended to reduce inoculum. Research has shown that fungicides such as ones containing chlorothalonil may be helpful when applied early.

## Pea *Ascochyta* Blight-*Ascochyta pisi*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension



## **Pine**

A common pest of pine in the United States is the Pine Tortoise Scale, *Toumeyella parvicornis*. The first indication that many homeowners notice is the blackened appearance of pine needles. This occurs because the scale insect feeding activity produces a sugary substance (honeydew) that is colonized by saprophytic fungi called sooty mold. The Pine Tortoise Scale has four or more generations per year in the southern parts of the country. Adult females on pine shoots are hemispherical, brown with dark markings. Females that settle on needles are elongate and light green with green stripes, eventually turning brown. Males are small, flat, whitish, and emerge from white pupal cases. The males die after mating. Up to 500 eggs are laid beneath the female's body. The crawlers are pinkish orange. Heavy infestations may kill trees, particularly young or weak trees. The best time to treat is when the crawlers are active as they are vulnerable to many insecticides. Fine horticultural oils and insecticidal soaps will kill crawlers. Bayer Advanced Insect Control for Trees and Shrubs applied in the fall will kill crawlers in the spring. Other products that are effective against crawlers are acephate, Sevin, and pyrethroids, but these as well as the Bayer product can kill beneficial insects. The adults are protected by a waxy coating and are more difficult to kill. Insecticidal soaps or fine oils may be used to kill adults during the dormancy period.

## **Pine Tortoise Scale-*Toumeyella parvicornis***



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## **Pine Tortoise Scale Adult Female- *Toumeyella parvicornis***



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## **Pine Tortoise Scale Male pupal cases-*Toumeyella parvicornis***



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## **Pine Tortoise Scale Crawler-*Toumeyella parvicornis***



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## **Oak**

We are seeing numerous samples of oak leaves with damage from the Solitary Oak Leafminer, *Cameraria hamadryadella*. Although the Solitary Oak Leafminer prefers white oaks, they will also go to burr, eastern black oak, and red oak. The adults are tiny silvery moths with bronze blotches on the wings. Newly hatched larvae are tiny caterpillars that feed between the outer layers of oak leaves. They are small, flat, taper toward the rear. Mature larvae are about 1/4 inch long. They form irregular, blotch-like mines as they feed. Mature leafminers spin a delicate, white, oval cocoon within the leaf and pupate within it. The pupae are slender, brown, and taper toward each end. Pupae wriggle to the surface of the mine and emerge as adult moths. This insect overwinters as larvae in fallen leaves. A new generation of tiny moths emerges during the spring. After mating, females cement eggs one at a time to the upper surface of leaves. In the south there may be as many as three generations. Heavy infestations cause leaf browning and premature leaf fall which may be mistaken for disease. The tree however is rarely seriously harmed. The biggest aid to prevention is sanitation. Because the insect overwinters in fallen leaves, leaf disposal or destruction is effective in reducing their population. Chemical treatment is not recommended.



**Sherrie Smith**  
**Keiddy Urrea**

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## Solitary Oak Leafminer Larva- *Cameraria hamadryadella*



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## Solitary Oak Leafminer-*Cameraria hamadryadella*



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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.

"This work is supported by the Crop Protection and Pest Management Program [grant no. 2017-70006-27279/project accession no. 1013890] from the USDA National Institute of Food and Agriculture."