



## **Arkansas Plant Health Clinic Newsletter**

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### **Apple**

Growers are often stumped when trying to figure out why their apple tree has developed strange knotty growths on the main trunk or limbs. Apple Burr Knot is a common, genetic physiological disorder of apples. Differentiated root tissue starts from root initials and becomes a highly branched dwarf root system above the soil line. These growths take on the appearance of rough, raised gall-like areas, usually at nodes. These structures are sometimes mistaken for crown gall which they superficially resemble. Low light, high humidity, and elevated temperature can work together to stimulate development of the root initial. Severe Burr Knot problems can cause trees to become stunted, girdled, or weakened at the site of the knot. A tree with a heavy fruit load and many Burr Knots may break during windy conditions. Organisms such as dogwood and plum borers, woolly apple aphids, fire blight bacteria, and wood-rotting fungi can attack the tree through the knots. Burr Knot is common on many of the popular rootstocks such as M7, M9, M26, MM111, and Mark. They also occur on scion cultivars such as Springdale, Empire, and Gala. The best solution to the problem is to plant rootstocks that are not genetically disposed to Burr Knot

formation. The knots can sometimes be removed by cutting them out. Burr Knots can also be treated with naphthalene acid.

### **Apple Burr Knot-Abiotic**



Photo by Randy Fort, University of Arkansas Cooperative Extension



## Apple Burr Knot-Abiotic



Photo by Grant Beckwith, University of Arkansas Cooperative Extension

## Dogwood Orange Slime

Homeowners are sometimes startled in the spring when they notice bright orange exudates (orange slime) on the trunk or branches of a dogwood tree, or another woody plant on their property. This is not a disease. The cause is injury to the bark or pruning in late winter or early

spring before flowering. The tree begins weeping sap from the injury or “bleeding.” Yeast and fungi, such as the yeast *Cryptococcus macerans*, often colonize and feed on the sugar rich sap. *Cryptococcus macerans* stores energy in carotene-filled sacs, giving a startling orange color to the sap. Birches, maples, butternuts, muscadines, and walnuts are among other species of tree on which these phenomena can occur. The wounds themselves should not be covered or treated but allowed to heal naturally. The tree usually stops bleeding by early summer.

## Dogwood by Keiddy Urrea

Cornejo florido En la primavera, algunas personas se preocupan cuando observan un exudado de color naranja fuerte (moho mucilaginoso naranja) en el tronco o ramas del árbol conocido como cornejo florido (Dogwood en ingles) u otros arboles similares en su propiedad. No se preocupe esto no es una enfermedad, la presencia de esta sustancia mucilaginosa es causada por una levadura /hongo que entra al árbol por alguna herida causada por tormentas o por podar el árbol muy tarde en el invierno. El árbol comienza a exudar sabia y los organismos como la levadura *Cryptococcus macerans*, coloniza y se alimenta de los azucares de la savia de la planta. *Cryptococcus macerans* guarda su energía en pequeños paquetes llenos de carotenos los cuales le dan el color naranja a la sabia del árbol. Este fenómeno ocurre también en otros arboles como: arces, abedules, nogal blanco americano y nogales. La heridas en el árbol no se deben cubrir o



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tratar, están se deben dejar sanar naturalmente. El árbol normalmente deja de exudar sabia en el comienzo del verano.

### **Dogwood Orange Slime-** *Cryptococcus macerans*



Photo by Roselyn Gira

### **River Birch Orange Slime-** *Cryptococcus macerans*



Photo by Richard Klerk, University of Arkansas Cooperative Extension

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## **Muscadine Orange Slime- *Cryptococcus macerans***



Photo by Allen Bates, formerly University of Arkansas Cooperative Extension

## **Strawberry**

Strawberry Powdery mildew of strawberries, caused by *Sphaerotheca macularis* f.sp. *fragariae*, is a serious problem when environmental conditions are right for infection. Blooms, fruit, leaves and stems can all be infected. Leaves which are severely damaged by powdery mildew have a reduced ability to photosynthesize. This reduces the over-all vigor

of the plant. Infection of flowers and fruit can significantly reduce yield. Symptoms are white patches of mycelium on the undersides of leaves. As the amount of powdery mildew increases, the leaf edges roll upward. Purplish blotches also may occur on the affected leaves. Young fruit may be infected during bloom and become covered with powdery mildew mycelia. Severely infected new fruit may die and dry up. Older fruit develop dark, watery areas on the fruit with sunken lesions. The powdery mildew mycelia eventually become apparent on the injured fruit. Strawberries grown in high tunnels and greenhouses are especially vulnerable. Cultivar susceptibility, low light intensity or short days, high humidity and low temperatures are factors in disease development. There are many cultivars with decent resistance to powdery mildew. Commercial growers may use Abound, or Quadris Top, or Pristine, or Switch 62.5 WG, or Inspire Super, Fontelis, or Cabrio EG, or Flint. Homeowners must rely on resistant cultivars and good sanitation.

## **Strawberry Powdery Mildew *conidia-Sphaerotheca macularis* f.sp. *fragariae***

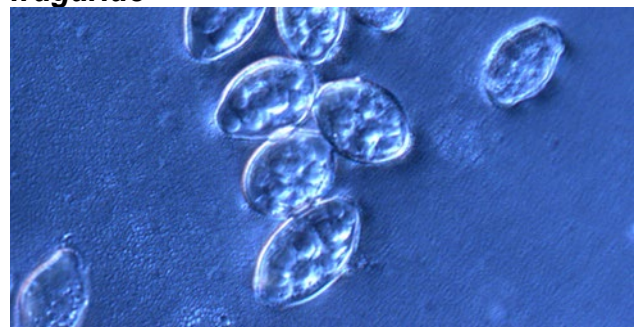


Photo by Sherrie Smith, University of Arkansas Cooperative Extension



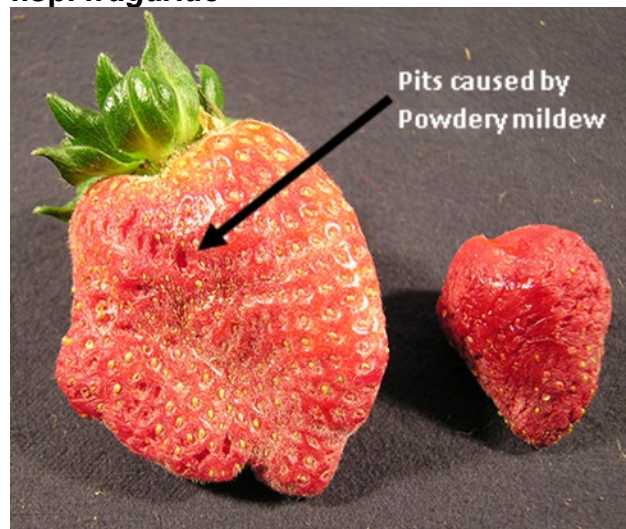


## **Strawberry Powdery Mildew on lower leaf-*Sphaerotheca macularis* f.sp. *fragariae***



**Photo by Elizabeth Bush, Virginia Polytechnic Institute and State University, Bugwood**

## **Strawberry Powdery Mildew on mature fruit-*Sphaerotheca macularis* f.sp. *fragariae***



**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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