



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.

Peach

Bacterial leaf spot of peach, caused by *Xanthomonas campestris pruni*, can be devastating in orchards with susceptible cultivars. Plum, apricot, nectarine, almond, and cherry are susceptible as well as peach. Leaves, twigs, and fruit may be infected. The bacterium enters twigs via fresh leaf scars in the autumn when the leaves fall. The following spring, leaves, blooms, and fruit may be infected when the infected twigs exude bacterium during wet periods. Temperatures of 70-85°F with rain, heavy dew, fogs, and wind are the most favorable conditions for disease development. Grayish water-soaked spots appear along the midrib, vein, or leaf tip of leaves. Older spots may become purple as they age. The centers of the lesions fall out giving a shot hole appearance to the leaves. Leaves yellow and fall from the tree prematurely. Fruit symptoms start 4-5 weeks after petal fall. Small water-soaked spots occur on immature fruit. As the fruit ripens, lesions become cracked, sunken, and may appear cavernous. Gum may exude from the lesions. Applications of fixed copper applied in the autumn help prevent leaf scar infections. The very best method of control is planting resistant cultivars.

Susceptible varieties include: 'Autumglo', 'Autumn Lady', 'Blake', 'Elberta', 'Halehaven', 'July Elberta', 'Jersey Queen', 'Jerseyland', 'Kalhaven', 'Suncling', 'Suncrest', 'Sunhigh', 'Ran Cocas', 'Redcrest', 'Rio-Oso-Gem', 'and Sweet Sue' among others.

Resistant varieties include: 'Belle of Georgia', 'Biscoe', 'Candor', 'Clayton', 'Derby', 'Dixiered', 'Jerseydawn', 'Newhaven', 'Salem', 'Sentinel', 'Sweethaven', 'Commanche', 'Earliglo', 'Loring', 'Early-Free Red', 'Emery', 'Encore', 'Garnet', 'Beauty', 'Harbelle', 'Harbinger', 'harbrite', 'Harken', 'Madison', 'Norman', 'Ranger', 'Redhaven', 'Redkist', 'Redskin', and 'Sunhaven' among others.

Peach bacterial leaf spot- *Xanthomonas campestris pruni*



Sherrie Smith University of Arkansas Cooperative Extension

Tomato

Buckeye rot of tomato, caused by *Phytophthora parasitica*, can devastate crops when conditions are optimal for disease epidemics. The pathogen also attacks pepper and eggplant. *Phytophthora parasitica* is a soil-borne pathogen that cause root and crown rot as well as fruit rot. Initial symptoms on fruit are a brownish water-soaked spot that develops alternating bands of light and dark brown. The flesh underneath the lesion rots while the lesion itself remains firm. Young fruit are often mummified. White, cottony mycelia may appear during wet weather. Affected roots also have brown, water-soaked lesions with extensive rotting. Buckeye rot may be distinguished from Late blight, caused by *Phytophthora infestans*, as Late blight lesions are typically rough and sunken at the margins. Ideally, tomatoes should be grown on raised beds in well-



drained soil. Fruit should be prevented from touching the ground by staking or mulching. Avoid over watering. Ridomil Gold may be applied as a ground surface spray under the vines 4-8 weeks before harvest. Alternatively, it can be applied as a foliar spray beginning when crown fruit are 1/3 their mature size. Home gardeners may use Maneb.

Tomato Buckeye rot-*Phytophthora parasitica*



Tomato Buckeye rot-*Phytophthora parasitica*



Sherrie Smith University of Arkansas Cooperative Extension

Cucumber by Patrick L. DiBello

Misshapen cucumber fruit is often due to low flower pollination. Drought stress during flowering and fruit development can lead to poor pollination. Additionally high temperatures can also affect pollination and subsequent fruit formation of cucumbers. Conditions such as lack of water and high temperatures lead to fruits with higher levels of cucurbitacins, the bitter tasting compounds in cucumbers. Lucky, these problems are easily remediated in the next crop by adequately watering your cucumbers during flowering and fruit development. If the problem still persists after increased watering consider having a soil fertility test.

**Cucumber poor pollination-
abiotic stress**



Patrick L. DiBello, University of Arkansas Plant Pathology
Graduate student

Rose by Mia Gentry

Soil conditions, such as pH and available nutrients, are important for plant health. Roses are most successful in slightly acidic soil, in the pH range of 5.5 to 7.0. Improper soil pH can cause certain nutrients to become unavailable for uptake by plant roots, leading to



symptoms of nutrient deficiency, such as chlorosis. To increase the soil pH to the desired range, soils can be amended with ground limestone. An appropriate fertilization regimen is also important for healthy roses. Nutrient deficiencies can have negative effects on the plant. For example, roses with a potassium deficiency can exhibit yellowing leaf margins that eventually turn brown. This deficiency can also produce weak stems and lead to poorly developed buds. Soil should be tested prior to planting to determine the proper fertilizer and soil amendments needed.

Rose nutritional pathology- potassium deficiency



Mia Gentry, University of Arkansas Plant Pathology
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Rose by Keiddy E. Urrea

Oedema (edema) in roses is a physiological condition that occurs when roses take up more water than what is needed for transpiration. The problem starts when water congests in plant cells; cells enlarge and plug leaf pores

and stomata. The plant cells push against the leaf surface to form blistered areas. The blisters burst and crack the leaf surface causing the formation of corky dead tissue. Conditions that favor oedema are the combination of warm moist soil with cool, humid atmosphere. Low light intensity, poor air circulation and crowding space are also associated with oedema.

Symptoms

Symptoms appear primarily on foliage, usually as water-soaked swellings on the underside of the lower older leaves. In the advanced stage the swellings develop a corky texture and become brown or tan blisters (Figure 1 and 2). Eventually the leaves become yellow, stop growing, wilt and may die (Figure 3 and 4). Symptoms can also appear on the stem and flowers.

Control

Oedema is best controlled by reducing watering frequency and improving drainage and air movement in the foliage and roots. Adding mulch to the bed allows better water percolation and root aeration. Improve air circulation by spacing the plants farther apart. Management of soil pH and fertility can improve the uptake of nutrients such as calcium which thicken up the cells walls and making the roses more resistant to oedema. Soil texture can affect water percolation and root aeration; light soil textures such as sandy loam or loam allow better air movement and water percolation than clay textures

Rose oedema (edema)



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Rose oedema (edema)



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