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Arkansas Plant Health Clinic Newsletter

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Squash

The fungus *Pseudoperonospora cubensis* causes Downy Mildew in cucurbits. Major losses may occur to cucumber, melon, squash, and pumpkin when environmental conditions favor disease development. Symptoms of Downy Mildew are first seen as small, slightly chlorotic to bright yellow areas on the upper leaf surface. Corresponding areas on the lower leaf surfaces are not as vivid. The spots appear first on the older crown leaves and appear progressively on younger leaves as they expand. Lesions may remain chlorotic or become brown and necrotic. On cucumber, the lesions are angular and bound by leaf veins. On other cucurbit crops, the margins of the lesions are irregular. With prolonged leaf wetness, the lesions on the underside of the leaves sporulate, giving the name Downy to the disease. The downy coloration may vary from colorless to gray to deep purple. Leaves on plants with some resistance die after one round of sporulation. Leaves on highly susceptible cultivars have multiple sporulation cycles before dying. When leaves die prematurely, the fruit is subject to sunscald. Control measures include fungicide applications, the use of resistant cultivars, and good cultural practices. Plants

should be spaced to reduce canopy density and overhead irrigation avoided. A minimum of 6 hours leaf wetness at 100% humidity is required to produce spore bearing structures (sporangia). Downy Mildew is an obligate parasite. It cannot survive without a live cucurbit host. The distance from potential sources of inoculum should be maximized and volunteer cucurbits eliminated. Many fungicides are labeled for Downy Mildew. Fungicides with different modes of action should be alternated. A complete list may be found in Extension publication MP 154, Arkansas Plant Disease Control Products Guide

<https://www.uaex.uada.edu/publications/mp-154.aspx>

Pumpkin Downy Mildew- *Pseudoperonospora cubensis*



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Squash Downy Mildew- *Pseudoperonospora cubensis*



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Juniper

Tip moths, *Glyphidocera juniperella*, can damage cedars/junipers, arborvitae, cypress, and False cypress. The Plant Health Clinic receives multiple samples a season of Tip moth damage on junipers, arborvitae, and Leyland cypress. Damage made by this insect can be severe, causing shoot tip dieback and foliar scorch. Entire shoot tips are hollowed out by late instar larvae. Dead hollowed twigs break off easily. Heavily infested trees have a scorched appearance. Tip moth larvae overwinter inside the twigs until late April/early May, when they leave their mines and spin white paper-like cocoons among the plant's foliage.

About two weeks later adults emerge, mate, and lay individual eggs on green tips of twigs in late spring and early summer. Newly hatched larvae bore into individual scale leaves, creating mines. Larvae are pale yellowish green with a brown head and prothoracic shield. The mines involve 9-12 scales between summer and late winter. By the following spring, the larvae will have bored into shoots 0.3-2.0 cm and tunneled 0.5-2.5 cm down the shoot, sometimes into a lateral shoot. Each larva may affect 4-6 shoots in this manner. The entire life cycle lasts about 10 months. Susceptible trees should be checked for the white cocoons in the spring. If small silvery brown moths fly when branches are shaken, it is time to apply insecticides. Products containing abamectin, bifenthrin, cyfluthrin, imidacloprid, and lambda-cyhalothrin are labeled for Tip moths.

Juniper Tip Moth-*Glyphidocera juniperella*



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Dogwood

Erysiphe pulchra and *Phyllactinia guttata* are two species of fungi that can cause powdery mildew on dogwoods. Young leaves are especially susceptible to injury. White powdery growth develops on the new growth distorting and curling the leaves. Affected leaves develop yellow mottling and can appear scorched later in the season. Although powdery mildew does not kill trees, it can weaken them and is unsightly. Trees subjected to high levels of humidity are more prone to develop the disease. Control consists of sound cultural practices, resistant cultivars, and the use of fungicides. The Tennessee Agricultural Experiment Station has developed three new



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powdery mildew resistant cultivars. They are 'Jean's Appalachian Snow', 'Karen's Appalachian Blush', and 'Kay's Appalachian Mist'. Cultivars of Kousa dogwood are also resistant. Care should be taken not to overwater or apply too much nitrogen fertilizers, as these practices encourage a lot of tender succulent growth that is more prone to attack by the powdery mildew fungi. Provide good air circulation, keeping mind that dogwood do much better with some afternoon shade. Four fungicide applications made three weeks apart provide good control of powdery mildew. Heritage, Eagle, Spectracide Immunox, Banner Maxx, Cleary's 3336, Bayleton, and Strike are effective fungicides.

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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.

Dogwood Powdery Mildew- *Erysiphe pulchra*



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