



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.

### Grape by Rebecca Barocco

Anthracnose, or bird's-eye rot, can be a problem for grape production in rainy, humid, and warm climates. The fungus responsible for this disease is *Elsinoë ampelina*. Grape yields and fruit quality can be reduced as the vine becomes weakened and the leaves lose vigor. The most distinct symptoms will appear on the fruit as reddish brown or violet gray and black circular lesions. These have light centers with dark margins giving them an appearance similar to a bird's eye. Fruit cracking may be induced as the necrosis extends to the pulp. Leaf lesions begin as reddish brown or violet black spots that are either angular or round. The spots will grow and merge into large angular necrotic areas. The center of the lesions will become dry and gray which eventually drop out. This creates "shot-holes" within the leaves. Black acervuli dots will also form within the lesions. The stems, petioles, rachises, and pedicels also have notable symptoms with lesions similar to those of the fruit. As the disease progresses, girdling may occur on the rachises, and the clusters will shrivel. *E. ampelina* overwinters by the production of sclerotia. Plant debris should be removed to lessen infections from the sclerotia that sporulates in the spring. Infected plant parts should also be pruned out and destroyed during the dormant season, and nearby wild grapes should be removed from fence rows or from areas as far out as possible. Some cultivars are more susceptible to anthracnose than others, so these should be avoided. Improving air circulation within the canopy will create an environment less conducive to fungal growth. This can be achieved by a good training system and the removal of some leaves. Dormant sprays of liquid lime-sulfur or Nu-Cop 50DF should also be applied before bud swell in late winter.

### Grape anthracnose



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### Tomato

Septoria leaf spot caused by *Septoria lycopersici* is one of the most destructive diseases of tomato foliage. Symptoms usually appear on the lower leaves after the first fruit sets. Lesions are circular, about 2.6mm in diameter. They have dark brown margins with tan to gray centers. A narrow yellow halo may often be observed around the lesion. The centers of older lesions become dotted with small black fruiting bodies of the fungus (pycnidia). Lesions may coalesce to form larger blighted areas. Badly affected leaves turn yellow, then brown and fall off the plant. There are no resistant cultivars available. Control measures include crop rotation with a non host, control of weeds in tomato crops, removal of all crop debris, and avoidance of night watering and overhead irrigation. Protective fungicides at regular intervals during the growing season will be necessary for most growers. Quadris, Cabrio, Flint,



Bravo, Mancozeb, and Gavel are labeled for Septoria leaf spot control.

### Tomato Septoria leaf spot



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### Peanut

Tomato spotted wilt virus (TSWV) has a large host range, infecting nearly 200 species of plants. At least nine species of thrips transmit the virus. TSWV causes millions of dollars of worth of damage to susceptible crops such as tomatoes, peppers, peanut, tobacco, and many others. In peanuts, a wide variety of symptoms have been reported, but concentric rings are always present on the leaves. Young plants are stunted, and shoots have small, distorted, mottled leaves. Plants infected at a young age rarely set pods, but if pods are formed they are significantly reduced in size and number. Older plants usually set pods, but pod size is reduced, and the seeds are often shriveled and mottled. Certain isolates of the virus cause significant bud necrosis which may spread to petioles and stems, killing

the plant. Control of TSWV is difficult and calls for a comprehensive strategy. Planting cultivars with some level of resistance is the first line of defense. Georgia Green is widely planted for its moderate TSWV resistance. Tifguard is resistant to both root knot nematode and TSWV. Planting date also plays an important role in limiting Tomato spotted wilt virus. Peanuts planted early are more prone to acquiring the virus from migrating thrip populations than peanuts planted in mid-season. Additionally, thin plantings suffer greater losses than plantings with good stands. This is not because more plants in thin plantings get the virus, but because there are more healthy plants in a thicker stand to increase yields from the planting. Insecticide control with the chemical - phorate (Thimet 20G and Phorate 20G), has demonstrated consistent, low-level suppression of TSWV. It is thought that the ingredient phorate may trigger a plant defense response in peanut that makes the plant more resistant to infection. Research has also shown that peanuts planted in 7-10 inch twin row spacing have fewer incidence of TSWV.

### Peanut with TSWV



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## Peanut with TSWV



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## Soybean

Fusarium root rot of soybean is caused by *Fusarium oxysporum* or *Fusarium solani*. With *Fusarium oxysporum* we see the disease most often on young plants. Symptoms are generally seen only on the roots and lower stems. Adventitious roots usually develop on older sections of the taproot, producing a shallow, fibrous root mass. The vascular system is invaded in advanced cases. Reddish-brown streaking when a stem is cut longitudinally is characteristic. When soil moisture is low plants may wilt. *Fusarium solani* causes mostly pre-emergence damping off and limited post-emergence damping off. Dark brown to reddish-brown or black lesions form on the taproots and lateral roots. Cotyledons and hypocotyls may also get lesions. The lesions girdle roots and stems and result in death of the

plant. Cultivars resistant to Fusarium diseases should be planted where possible. Good soil fertility and adequate irrigation to reduce stress factors helps to limit the damage.

## Soybean Fusarium



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## Adventitious roots



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