



Founded in 1875
Putting science to work for society

Dr. Sharon M. Douglas
Department of Plant Pathology and Ecology
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

Phone: (203) 974-8601
Fax: (203) 974-8502
Email: Sharon.Douglas@po.state.ct.us
Website: www.ct.gov/caes

VOLUTELLA BLIGHT OF PACHYSANDRA

SYMPTOMS AND DISEASE DEVELOPMENT:

Volutella blight, also called leaf and stem blight, is the most destructive disease of pachysandra (*Pachysandra terminalis*) in the Northeast. It is caused by the fungus *Volutella pachysandricola*. Patches of wilting and dying plants often indicate the presence of Volutella blight in a bed of pachysandra (Figure 1). This fungus is considered an opportunistic pathogen that attacks weak plants. It can infect leaves, stems, and stolons. Leaves develop irregular tan to brown blotches, often with concentric lighter and darker zones with dark brown margins (Figure 2). These necrotic blotches gradually increase in size until the entire leaf turns brown or black and dies.



Figure 1. Diagnostic patch of dead, “blighted” pachysandra.

Cankers can develop on stems and stolons and cause whole plants to shrivel and die. They can appear at terminal, mid-stem, or ground level portions of a stem. Cankers first appear greenish-brown and water-soaked but eventually turn brown or black and shrivel. As these cankers girdle the stem or stolon, they cause the whole plant to wither and die, sometimes as rapidly as within two weeks (Figure 3).



Figure 2. Necrotic foliar lesions with concentric light and dark zones.

In spring, especially during wet, humid weather, masses of pink spores are produced in cushion-like structures on infected tissues. By late summer or fall, these pink masses darken to reddish-orange and a second type of spore is produced (Figure 4).

Spread of the *V. pachysandricola* within a bed of pachysandra is by means of these fungal spores. Infections can occur at any time in the growing season.



Figure 3. Brown, shriveled stem lesion characteristic of Volutella blight.

Plants often die in patches and the disease commonly produces circular patterns in the bed. Volutella blight is more severe in plantings weakened by winter injury, insect infestation, recent transplanting, shearing, drought, and sudden changes in light levels, particularly increased exposure to full sun.



Figure 4. Reddish-orange, cushion-like fruiting structures of *V. pachysandricola* on stem lesions in autumn.

In spring, symptoms of winter injury and desiccation can be confused with Volutella blight (Figure 5). Leaves with winter injury appear scorched and tan and typically do not develop the diagnostic concentric rings of

dark and light associated with *V. pachysandricola* infections.

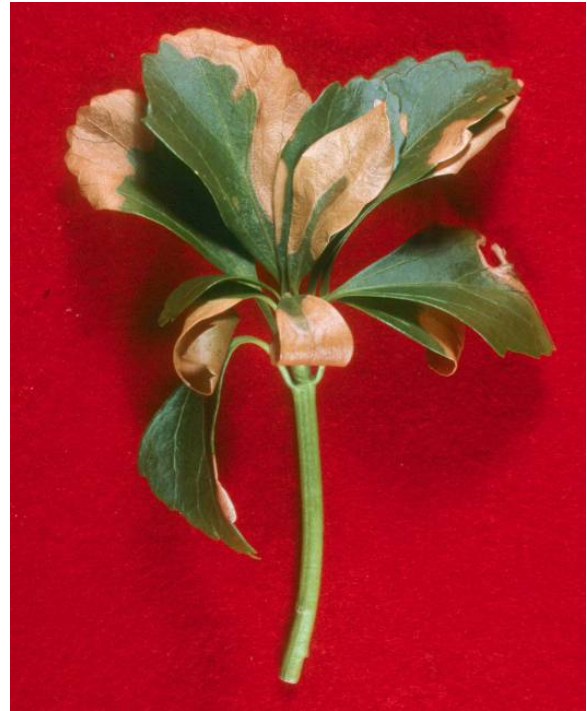


Figure 5. Symptoms of winter injury that are often confused with Volutella blight.

MANAGEMENT:

Volutella blight can be managed by following an integrated approach that includes sanitary, cultural, and chemical measures. Fall cleanup to remove any fallen leaves or plant debris from the bed helps to improve air circulation and reduce moisture levels. When infections are detected, all debris and severely diseased plants should be removed and destroyed. It is also helpful to periodically thin the planting to prevent dense growth and increase light and air circulation. In some situations, mowing the affected bed, followed by a vigorous raking, can help to rid the bed of infected plant material and inoculum.

Since Volutella blight is often present at some level in most beds of pachysandra (at very low levels, in the majority of cases), outbreaks are usually associated with plant stress. Therefore, it is important to identify

and control infestations of two-spotted spider mites and insects, particularly euonymus scale. It is also helpful to follow a program of sound cultural practices focused on maintaining the growth and vigor of the pachysandra. This includes watering during periods of drought and fertilizing in the spring when necessary as determined by a soil test. Since water favors disease development, it is best to water early in the day so the foliage dries before the cooler, nighttime temperatures that are conducive for fungal infections. It is helpful to avoid thick, heavy mulches since they hold excess moisture.

If Volutella blight is a recurring and persistent problem, alternative groundcovers such as Allegheny pachysandra (*Pachysandra procumbens*), which is less susceptible to this disease, or creeping myrtle or periwinkle (*Vinca minor*), which is not a host for this pathogen.

There are also biological, biorational, and traditional fungicides registered for use in Connecticut to manage Volutella blight. An organic biological option is *Bacillus subtilis*, QST 713 (Serenade®). Biorational and organic options include copper salts of fatty and rosin acids, basic copper sulfate, copper hydroxide, and potassium hydroxide. Some of the traditional fungicides are thiophanate-methyl, chlorothalonil, and mancozeb. Plants should be sprayed prior to symptom development when new growth starts in the spring. Applications can be repeated according to label directions to protect newly emerging tissues. Additional applications may be necessary during wet weather. The pesticide label will contain information on dosage rates and safety precautions.

April 2008 (revised)