

# PLANT HEALTH CARE REPORT



## Boxwood

Boxwood (*Buxus sempervirens*) is the aristocrat of formal gardens. Native to Europe, this species has been used extensively in North America since colonial times. The dwarf variety, known as English boxwood (*Buxus sempervirens* ‘Suffruticosa’), is widely used as edging, hedges and foundation plants. Many other cultivars of common or American boxwood (*B. sempervirens*) have been selected for form and foliage characteristics. Varieties and selection of littleleaf boxwood (*Buxus microphylla*), which are from Asia, are also popular in the landscape. Many hybrids between American and littleleaf boxwood are available and can be grown in northern areas of the United States and southern Canada.

‘Green Gem’ boxwood used as edging



‘Dee Runk’ has a columnar habit

Boxwood prefers partial shade and protection from the afternoon sun. Northern or eastern exposures near buildings or in the understory of tall trees are ideal sites. Winter injury, sunscald, and desiccation are more prevalent in full sun and in western and southern exposures. Soils must be well drained and organic with a slightly acidic-to-neutral pH. The shallow root system, which extends far beyond the edge of the crown, is intolerant of competition from turf and other ground covers. A light layer of mulch benefits root development. Soil disturbances such as compaction, cultivation, and construction should be avoided. Excessive irrigation is one of the most common causes of decline of boxwood. Boxwood is highly drought tolerant once established.

Boxwood should be routinely pruned by removing or reducing small branches in the outer canopy to allow light and air penetration to the center. Boxwood that has been properly pruned should have growth along its entire stem. Dead branches should be removed when detected. Periodically removing leaves and other debris from the center of the plant will allow stems and branches to dry following rainfall or irrigation, which can reduce the incidence of certain diseases. Shearing, which is frequently done to provide a formal appearance, stresses the plant and increases the likelihood of disease and winter injury. Avoid pruning during the growing season or when boxwood foliage is wet to reduce the likelihood of introducing the fungus that causes boxwood blight. The best time to prune is in the dormant season after two to three freezes have occurred.

Boxwood is susceptible to *Phytophthora* root rot, which is a leading cause of premature decline and death of boxwood. *Phytophthora* root rot develops primarily on wet, poorly drained soils. *Phytophthora* is managed through an integrated approach that includes managing soil moisture and using wood-based mulches, organic amendments, and soil treatments during periods when plants are most susceptible to infection.

Boxwood blight, a fungus disease caused by *Calonectria pseudonaviculata*, was discovered in the United States and Canada in 2011. Boxwood blight was introduced from Europe and rapidly spread by distribution of infected nursery stock. It causes leaf spots, defoliation, twig and branch cankers, dieback and death of plants. It can rapidly spread through nurseries and landscape plantings.



Shearing, sprinkler irrigation, and densely crowded conditions will encourage disease outbreaks once the pathogen is introduced to a site. Some Asiatic and hybrid cultivars are more tolerant to boxwood blight than European boxwood cultivars. The NewGen™ boxwood series including cultivars ‘Freedom’ and ‘Independence’ are highly tolerant to this disease.

*Volutella* blight is common on plants stressed by root disease, nematodes, winter injury, drought and other environmental stresses. *Volutella* infects through wounds causing canker and dieback. Removing dead tissue and maintaining plant vigor will prevent injury by *Volutella*. Treatments may also be applied. The fungus *Macrophoma* may also cause leaf spot or leaf blight. It is a secondary invader of stressed and dead tissue.

English boxwood is susceptible to a decline that is thought to be caused by one or more soilborne, fungal pathogens. Commonly referred to as “boxwood decline,” this disease causes a progressive deterioration in plant vitality, branch dieback, and ultimately death. English boxwood should not be replanted on sites affected by boxwood decline. American and littleleaf boxwoods and hybrids with these species appear to be resistant.

Foliage-feeding pests include psyllids, spider mites and leafminers (damage by leafminer pictured at right). These pests can weaken and disfigure plants. Damage can be prevented by periodically inspecting plants and implementing management strategies before pests reach damaging levels.



Root-feeding nematodes can damage boxwood. These microscopic worms have stylets which puncture root cells and remove their contents. Nematodes can severely stunt root growth and predispose plants to winter injury and nutrient deficiencies. Maintaining plant vigor will help boxwood tolerate the infestation. The use of finely ground pine bark mulches and additions of other organic matter may help suppress nematode populations, which are higher in sandy soils with low organic matter.

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## Monitoring and Treatment Considerations for Boxwood

### Late winter

Apply dormant treatment to suppress psyllids and mites. Remove fallen leaves from the center of plants. Remove winter-damaged branches, and reduce crown density as necessary. Sample soil for nutrient and pH levels. If decline is evident, submit root samples for Phytophthora root rot testing.

### Early spring

Apply preventative fungicide treatment to suppress boxwood blight and Volutella blight as needed. Apply soil treatment to prevent Phytophthora root rot if there is poor soil drainage. Monitor for psyllids, mites and leafminers; treat as needed. Correct soil drainage as needed. Excavate mulch from root collars and add finely ground pine bark mulch to root zone as needed. Fertilize, adjust pH, and amend soil according to soil analysis.

## Mid-spring

Apply preventative fungicide treatment to suppress boxwood blight and Volutella blight as needed. Monitor for psyllids, mites and leafminers; treat as needed. Monitor irrigation and soil moisture levels to prevent water stress and suppress root disease.

## Early summer

Apply preventative fungicide treatment to suppress boxwood blight. Monitor for spider mites; treat as needed. Monitor irrigation and soil moisture levels to prevent water stress and suppress root disease. Sample for nematodes if this pest is suspected.

## Late summer

Apply preventative fungicide treatment to suppress boxwood blight as needed. Monitor for spider mites and treat as needed. Monitor irrigation and soil moisture levels to prevent water stress and suppress root disease.

## Fall

Apply preventative fungicide treatment to suppress boxwood blight as needed. If sucking insects were problematic this past growing season, consider treating with an appropriately timed systemic product. Expose and inspect root collar for problems; add mulch as necessary. Monitor irrigation and soil moisture to minimize winter injury. Fertilize, adjust pH, and amend soil according to soil analysis. Set up burlap barriers to protect against desiccation on exposed sites.

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