



Dr. Sharon M. Douglas
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

Phone: (203) 974-8496

Fax: (203) 974-8502

Email: Sharon.Douglas@ct.gov

Website: www.ct.gov/caes

Founded in 1875

Putting science to work for society

**SUGGESTED BEST MANAGEMENT PRACTICES FOR
BOXWOOD BLIGHT FOR CONNECTICUT**
-FOR LANDSCAPERS AND RESIDENTIAL, PUBLIC, AND COMMERCIAL
PLANTINGS-
Version 1.0**

**These Best Management Practices are subject to revision based on the availability of new information.

A. EXCLUSION OF THE PATHOGEN

1. Start with pathogen-free material by purchasing from reputable suppliers or nurseries that are licensed and/or certified according to all applicable phytosanitary laws and regulations.
 - i. Carefully inspect plants for symptoms at the time of purchase or when received from supplier. Personnel should be trained to detect boxwood blight.
 - ii. In Connecticut, regulatory actions for boxwood blight, caused by the fungus *Cylindrocladium pseudonaviculatum* (syn. *Calonectria pseudonaviculata*) are under the statutory authority of The Connecticut Agricultural Experiment Station (CAES), Sec. 22-84 and Sec 22-98 of the Connecticut General Statutes. Since CAES has full statutory authority for plant diseases, official diagnosis must be confirmed by CAES plant pathologists. Therefore, samples from any symptomatic/suspicious plants should be sent to The Connecticut Agricultural Experiment Station (CAES) for testing:
<http://www.ct.gov/caes/cwp/view.asp?a=3756&q=500388&caesNav=1>.
 - iii. Request a history of fungicide treatments with each shipment, if available (fungicide name, application rate, and time).
2. **IF THERE ARE ESTABLISHED BOXWOOD PLANTINGS ON THE PROPERTY:** Newly purchased plants should be isolated from existing boxwood plantings for at least four weeks, but preferably for longer.
 - i. Keep plants labeled to be able to track the vendor source, if purchased from more than one supplier.
 - ii. Physically separate material by source—avoid co-mingling of plant material, if purchased from different vendor sources.
 - iii. Holding area should have a surface that can be easily cleaned of plant debris.

- iv. All plant debris should be removed on a regular basis by vacuuming, sweeping, or raking and properly disposed (e.g., bagged for municipal trash, buried). This should NOT be composted.
 - v. Suspend the use of fungicides on new plants during the holding period.
 - vi. Monitor sanitation practices of anyone entering or working in the holding area.
 - a) Readily available products for sanitizing: alcohols—ethyl and isopropyl, 60-85% (Lysol Spray), quaternary ammonium 0.5-1.5% (Consan Triple Action 20, Physan 20, Green-Shield 20), and chlorine 100-1,000 ppm (10% Clorox, 10% household bleach).
 - vii. Any boxwood with suspicious symptoms should be sent to CAES for diagnosis and testing as previously described.
 - viii. IF NO SYMPTOMS DEVELOP DURING THE HOLDING PERIOD, the risk of introducing boxwood blight into an established planting is reduced, so the plants can be installed.
3. IF THERE ARE NO ESTABLISHED BOXWOOD PLANTINGS ON THE PROPERTY: Newly purchased plants can be installed at time of purchase. However, it is advisable to wait for at least four weeks to make certain the plants are pathogen-free prior to planting.
- i. Keep plants labeled to be able to track the vendor source, if purchased from more than one supplier.
 - ii. Physically separate material by source—avoid co-mingling of plant material, if purchased from different vendor sources.
 - iii. Holding area should have a surface that can be easily cleaned of plant debris.
 - a) All plant debris should be removed on a regular basis by vacuuming, sweeping, or raking and properly disposed (e.g., bagged for municipal trash, buried). This should NOT be composted.
 - iv. Suspend the use of fungicides on new plants during the holding period.
 - v. Monitor sanitation practices of anyone entering or working in the holding area.
 - a) Readily available products for sanitizing: alcohols—ethyl and isopropyl, 60-85% (Lysol Spray), quaternary ammonium 0.5-1.5% (Consan Triple Action 20, Physan 20, Green-Shield 20), and chlorine 100-1,000 ppm (10% Clorox, 10% household bleach).
 - vi. Any boxwood with suspicious symptoms should be sent to CAES for diagnosis and testing as previously described.
 - vii. IF NO SYMPTOMS DEVELOP DURING THE HOLDING PERIOD, the plants can be installed, since the risk of planting boxwood blight-infected plants is minimal.

B. WATER MANAGEMENT

- 1. Avoid overhead watering, if possible, or working with plants when they are wet.
 - i. Water is important for the spread and development of boxwood blight.
- 2. Avoid or minimize accumulation of standing water in boxwood plantings.

C. SANITATION

1. Remove leaf debris by raking or vacuuming. Debris should be bagged for municipal waste. It should NOT be composted.
2. Monitor plant debris in run-off water. Divert from other boxwood plantings.
3. Routine operations to maintain the boxwood planting (e.g., planting, pruning, grooming) should include sanitation practices. A suggested protocol is outlined as follows:
 - i. Pruning should be done as rapidly as possible.
 - ii. Pruning should not occur if plants are wet or if there is high humidity.
 - iii. Optional: The day before pruning is scheduled, plants can be thoroughly sprayed with ZeroTol. Immediately after pruning is done, the planting can be sprayed again with ZeroTol.
 - iv. Any routine fungicide programs can resume after pruning, as applicable.
 - v. Tools and equipment should be sanitized when moving between different boxwood plantings on a property or between properties.
 - a) Products for sanitizing: alcohols—ethyl and isopropyl, 60-85% (Lysol Spray), phenolics 0.4-5% (Pheno-cen), quaternary ammonium 0.5-1.5% (Consan Triple Action 20, Physan 20, Green-Shield 20), and chlorine 100-1,000 ppm (10% Clorox, 10% household bleach).
4. Work in plantings suspect plants last—after completing work with healthy plants.
 - i. Wearing of protective gear can be helpful.
5. If a planting or property known to have boxwood blight has been visited, wash and sanitize shoes, tools, equipment, and vehicles that may have become contaminated before traveling to other properties.
 - i. Use of protective gear can be helpful.
6. Train all personnel and home and property owners to avoid movement through plantings with infected or exposed and potentially infected plants and to regularly sanitize clothing and equipment as part of standard operating procedures.

D. INSPECTION

1. Inspect all boxwood plantings throughout the growing season by trained personnel.
 - i. If boxwood blight symptoms are detected, immediately send samples from all symptomatic plants to The Connecticut Agricultural Experiment Station (CAES) for testing.
 - ii. Infected plant material should NOT be composted.
 - iii. If you observe suspicious symptoms on boxwood, it is important to have the disease accurately identified by a specialist (state inspector or CAES plant pathologist).
2. Routinely monitor and inspect all incoming boxwood material, when applicable.

E. RECORD KEEPING/TRACEABILITY

1. Keep accurate, detailed records of:
 - i. Source of boxwood and planting date;
 - ii. Map location of boxwood plantings in the landscape;
 - iii. Mortality due to any cause;
 - iv. All pesticide/fertilizer applications;

F. TRAINING

1. Educate and train personnel as well as home and property owners to recognize boxwood blight.
 - i. Early detection is critical.
2. Train personnel and home and property owners in BMPs, including sanitation.

Version 1.0 (26 June 2012)