Nursery Industry Voluntary Best Management Practices

For Cylindrocladium pseudonaviculatum (Boxwood Blight)

To prevent the introduction of the disease and what to do if it is detected in nursery operations

Version 1.0

Endorsements:

American Nursery & Landscape Association
Boxwood Blight Working Group
Horticultural Research Institute
National Plant Board









Suggested Best Management Practices (BMPs) for Boxwood Blight
Version 1.0 – Visit www.boxwoodblight.org for updates to BMPs. Updates to the
recommendations will be made as more information regarding the disease and its management
comes to light.

The following voluntary industry recommended Best Management Practices (BMPs) were designed to provide guidelines to help growers in managing the risk of Boxwood Blight (*Cylindrocladium pseudonaviculatum*) introductions and how to respond if the disease is confirmed on the nursery grounds. These suggestions are based largely on BMPs promoted by the Connecticut Agricultural Experiment Station (CAES) and the Oregon Department of Agriculture (ODA) and have received the support of the industry led Boxwood Blight Working Group (BBWG), coordinated by the American Nursery & Landscape Association (ANLA) and the Horticultural Research Institute (HRI). These recommendations are strictly voluntary and are intended to provide guidance that is practical in terms of cost and benefit, relevant to multiple types of production and take into consideration the diversity of nursery sizes, their regional climatic conditions, and their production systems. All statements regarding plant material pertain only to *Buxus* and *Sarcococca* species and are not to be interpreted more broadly.

Individual nurseries are encouraged to review the recommended practices and apply some or all of them, depending on their specific circumstances. Actionable BMPs are associated with a set of check boxes that can be used to denote if a nursery that has not had a confirmed detection of Boxwood Blight will employ the BMP (Pathogen Free), a nursery that did have a confirmed detection will employ the BMP (Pathogen Present), or if the BMP will not be employed (N/A).

- A) Training, Disease Diagnosis, and Record Keeping
 - a. Educate personnel to recognize the disease symptoms and know what to do if symptoms are observed.
 - i. See www.boxwoodblight.org for pest alerts containing images and descriptions.
 - ii. If a diseased plant is suspected contact your local/regional National Plant Diagnostic Network laboratory (www.npdn.org) or your State Department of Agriculture (www.nasda.org) to submit a sample for confirmation.
 - If the presence of disease is confirmed or strongly suspected take the appropriate eradication steps described in Pathogen Eradication (Section E of this document).
 - b. Accurate and detailed records for the following activities should be maintained for traceability.
 - i. Plants moving on and off site.
 - ii. Shipping quantities and destinations.
 - iii. Plant propagation.
 - iv. Fungicide treatments.
 - v. Names of brokers and/or growers from which material was acquired.

Pathogen Free	Pathogen Presen	N/A	

Pathogen Free	Pathogen Present	
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atho	atho	B) Evaluating On-Site Boxwood and Sarcococca Material
Д	Д	a. Boxwood and Sarcococca stock from previous seasons.
		i. Trained nursery staff should inspect current on-site stock for signs and
ш		symptoms of the disease.
		ii. Re-inspect on-site material on a monthly basis, including landscape plant
		on growing grounds.
		 When climatic conditions are conducive to disease development inspect more frequently.
		b. Recently acquired Boxwood and Sarcococca material.
		i. Trained nursery staff should inspect plants and cuttings for symptoms at
Ш	Ш	time of purchase.
		ii. Keep plants obtained from different vendors separated.
		1. Maintain vendor source records of plants.
		iii. New buy-ins meant for production should be separated by a physical
		barrier or break (minimum 3 meters) from Boxwood and Sarcococca
		nursery production stock for a minimum of 30 days.
		iv. Inspect material on a regular basis.
_		C) Sanitation and Water Management
		a. Avoid acquiring cuttings from high traffic and public areas (e.g., parks, parking
		lots, hedgerows along walkways).
		b. Follow standard in-field sanitation practices.
		i. Crews should begin work with block or house with lowest likelihood of
		infection (lots from previous seasons) and finish with the blocks with
		highest risk (recent buy-ins).
Н		ii. Individual pruning crews should work on a single house or block at a time
Щ	Щ	iii. Equipment should be sanitized between blocks.
		iv. Pruning should be done when plants are dry or during low humidity
		periods when possible.
H	Н	v. Do not over prune plants.
		vi. Remove debris from production area and dispose of properly (e.g., cull and compost piles).
		c. Holding Areas, Delivery Trucks, and Containers
		i. Surfaces should be cleared of plant debris and standing water.
H	H	ii. Use new or sanitized pots and flats for Boxwood production.
H	H	iii. Use new potting mixes or compost free of Boxwood debris.
	Ш	d. Water Management – water is an important part of the disease dispersal.
		i. Avoid overhead watering when possible.

		ii. Water plants in the morning hours unless weather conditions require
		additional watering. iii. Direct runoff water from compost and cull piles away from production
		areas.
		iv. Prevent the accumulation of pooling water in growing blocks.
	ΠП	v. Space plants to allow for air circulation.
		D) Returned Plants
		a. Avoid accepting returns on-site. However, if returns are accepted, treat material
		as new buy-ins (see B. b. i-iv).
Щ		b. No dead material should be accepted and disposed of on-site.
		c. Do not compost returned material.
		E) Pathogen Eradication – If a Boxwood Blight detection has been confirmed from the
		nursery.
		a. All infected plants and plant debris should be buried a minimum of 2ft. below
		surface, or preferably, burned.
		i. Be cautious when moving diseased material around.
\mathbb{H}		Cover or bag diseased plants. Denot request during ratio average.
Н		2. Do not move during rain events.
		3. Bury or disinfect pots but do not reuse in Boxwood production.4. Do not compost infected plant material.
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		Clothing, equipment, and vehicles used during the disposal of diseased plants should be destroyed or sanitized before re-
		entering production areas.
		b. Confirm that the sanitation practices described in Section C are followed.
		c. Dealing with presumed healthy plants from a site where Boxwood Blight was
		confirmed.
П		Temporarily suspend Boxwood sales until a delimitation survey is
Ш		completed.
П		2. Do not apply fungicides to Boxwood and Sarcococca plants within
ш		a 3 meter radius of infected plants.
		3. Evaluate all Boxwoods on property on a regular basis.
$\overline{\Box}$		4. Break up large contiguous blocks with 3 meters of non-Buxaceae
		plants or open space.
		5. Once an area is deemed free from the pathogen, place non-hosts
		in the previously infested area.