Abiotic Disorders of Boxwood

Dr. Fulya Baysal-Gurel and Mary A. Holden

Otis L. Floyd Nursery Research Center
College of Agriculture
Tennessee State University
fbaysalg@tnstate.edu

ANR-PATH-13-2018

Abiotic disorders are generally defined as problems caused by unfavorable environmental conditions and improper cultural practices, that affect the overall health of the plants. The list of problems includes winter injury, snow injury and poor drainage as well as improper cultural practices such as fertility imbalances, chemical toxicity, siting issues, deep planting, and watering; either too much or too little (Figure 1-14). This factsheet describes a number of common abiotic disorders in boxwood plants (Table 1).

Table 1. Common abiotic disorders of boxwood plants

Cause	Symptoms and signs
Winter injury	Off colored leaves (reddish-orange, straw-colored), stunted growth, tip and stem dieback, bark injury
Snow load injury	Bending branches downward
Salt injury	Burn symptom, bleached foliage
Drought stress	Straw-colored leaves, desiccated stem tips
Overwatering	Aerial roots on interior stems
Poor drainage	Off colored leaves (straw-colored), root and crown rot
Planting depth	Chlorotic leaves, stunted growth, root and crown rot
Poor pruning	Winter burn, new growth dieback in spring
Chemical damage/ herbicide injury	Browning-yellowing of the leaf margins, brown discoloration irregularly on the leaves, distortion of the new foliage, defoliation
Nutrient imbalances	Yellow to orange leaf tips and margins
Rodent injury	Off colored or chlorotic leaves, stem girdled (may see tooth marks), chewed bark, tunnels

Management Strategies

Winter Injury: Avoid planting in sites exposed to winter extremes. Use de-icing materials that are landscape friendly on walkways near plantings. Make sure plants are well watered before the soil freezes. Prune out dead or affected growth.

Planting: Inspect root systems at planting, either container or in field. Inspect for circling or unhealthy roots. Plant in well-drained soil. If plants have been planted too deep, raise them up to the proper level.

Watering: Do not over water as this may promote disease. Avoid overhead irrigation when possible. Irrigate during drought periods.

Pruning: Prune to increase air circulation. Do not prune any later than mid-August as this can encourage tender new growth that could be damaged during the cold winter months.

Nutrient Deficiencies: If deficiency is detected, obtain a soil and foliar test in late to correct the deficiency. Have a soil nutrient analysis taken before applying fertilizers and to check the soil pH. Optimal pH range is 6.0 to 7.2.

Mulching: Do not apply more than three inches of mulch and keep it away from around the stems of the plants.

Figure 1. Winter injury

Figure 2. Snow load injury

Figure 3. Fertilizer burn

Figure 4. Drought stress

Figures 5 and 6. Shearing injury


Figures 7 and 8. Poor drainage (Photo credit Donna Fare)


Figures 9 and 10. Poor pruning


Figures 11 and 12. Deep planting


Figures 13 and 14. Shallow planting

For additional information, contact your local nursery specialist office at:

Tennessee State University
College of Agriculture
3500 John A. Merritt Blvd., Box 9635 Nashville, TN 3720-1561

http://www.tnstate.edu/extension

Tennessee State University, Otis L. Floyd Nursery Research Center
472 Cadillac Lane McMinnville, TN 37110 http://www.tnstate.edu/agriculture/nrc/

Disclaimer

The recommendations in this publication are provided only as a guide. The author(s) and Tennessee State University assume no liability resulting from the use of these recommendations.

Dr. Chandra Reddy, Dean, Tennessee State University, College of Agriculture, Human and Natural Sciences
Dr. Latif Lighari, Associate Dean Extension, Tennessee State University, College of Agriculture, Human and Natural Sciences
Dr. Nick Gawel, Superintendent, Otis L. Floyd Nursery Research Center, Tennessee State University, College of Agriculture, Human and Natural Sciences