

First Year Scouting Insights from the Oregon Boxwood Blight Survey

Jerry Weiland

USDA-ARS, Corvallis, OR



Initial thoughts

Affects small portion of the industry

- 2019 survey based on 6/8 nurseries
- ~80 boxwood nurseries in OAN nursery guide
 - Many more not listed
- 2010: >1800 nursery & greenhouse operations
- Proactive

Pictures

- Don't try identifying nurseries by pictures
- Same structures, block patterns, etc. occur at many nurseries

Useful

- Nurseries with boxwood blight
- Nurseries producing or buying in boxwood
- Anyone scouting for boxwood blight

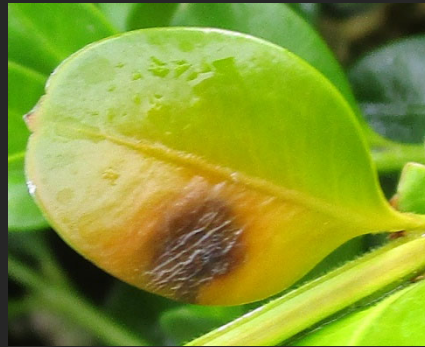
Overview

Biology

Scouting

Risks

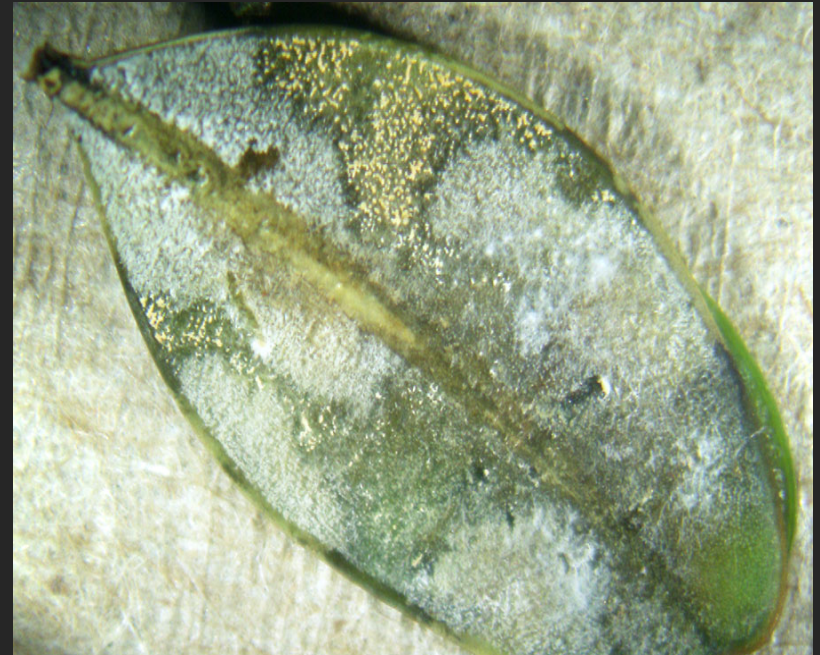
Observations



Biology

Spores (conidia)

- White, sticky masses
- Warm and humid
- Leaves, stems, microsclerotia
- Moved by water splash
- Also on clothing, tools, animals, equipment, and infected plants



Biology

Microsclerotia

- Brown survival structures last for years
- Develop inside leaves/stems
- Produce spores
- Released as tissues decompose (3,600/leaf)



Biology

Microsclerotia and infected tissues

- Moved on clothing, water run-off, wind, equipment, tools, and infected plants



Biology

Infection

- Needs 5+ hours of moisture/humidity (64-77°F)
- Symptoms can develop in 3-7 days
- Can seem explosive, appearing quickly after rain/irrigation
- 1 week to produce new spores



Scouting do's and dont's

Scout

- Cloudy
- Early morning, late afternoon
- More frequently when warm and wet (Spring to Fall)
during dry spells

Don't scout

- Rainy/wet
- Overhead, bright sun

Other tips

- Don't go from dirty to clean blocks
- Disinfest in between blocks
- Change clothes



Scouting strategy

Scan for plants that break the pattern

Look for the obvious first...



Scouting strategy

Scan for plants that break the pattern

Look for the obvious first...



Scouting strategy

Scan for plants that break the pattern

Look for the obvious first...



Scouting strategy

Scan for plants that break the pattern

Look for the obvious first, and then the less obvious



Scouting strategy

Scan for plants that break the pattern

Look for the obvious first, and then the less obvious



Scouting strategy

Scan for plants that break the pattern

Look for the obvious first, and then the less obvious



Scouting strategy

Scan for plants that break the pattern

Look for the obvious first, and then the less obvious



Scouting strategy

Scan for plants that break the pattern

Look for the obvious first, and then the less obvious



Less obvious symptoms

Get close!



Less obvious symptoms

Get close!



Less obvious symptoms

Get close!



Less obvious symptoms

Go low!



Less obvious symptoms

Go down under!



Less obvious symptoms

Go down under!



Less obvious symptoms

Go down under!



Less obvious symptoms

Go all in!



Less obvious symptoms

Go all in!



Less obvious symptoms

Go all in!



Less obvious symptoms

Go all in!



Less obvious symptoms

Look around!



Less obvious symptoms

Look around!



Scouting strategy

Other diseases: Volutella blight



Scouting strategy

Other diseases: *Phytophthora* root rot



Scouting strategy

Other: Spray damage



Scouting strategy

Other: Winter damage



Scouting strategy

Other: Winter damage



Boxwood Blight Risks

- Buying in plants (#1 risk)
- Pot-to-pot, pot tight
- Overwatering
- Scouting obstacles
- Mild symptoms/outgrow symptoms
- Susceptible cultivars
- Other jobs and nursery tours?



Overwatering



Overwatering

Under drip spots



Overwatering

Where irrigation overlaps



Scouting obstacle 1

Pot tight – can't see lower canopy



Scouting obstacle 2

Blocks too big to scout center



Scouting obstacle 3

Paths too narrow

No paths or narrow spacing between plants

Paths difficult to navigate



Scouting obstacle 4

Weeds



Scouting obstacle 4

Weeds



Scouting obstacle 5

Trimmings



Mild symptoms/outgrow symptoms



Mild symptoms/outgrow symptoms



Mild symptoms/outgrow symptoms



Mild symptoms/outgrow symptoms



Boxwood Blight Observations

Eradication zones: bigger probably better



Boxwood Blight Observations

If you find it once, you will probably find it again



Boxwood Blight Observations

Hotspot locations

- Block interior > perimeter (48:25)
- Next to tall plants/barriers
- Shaded



Boxwood Blight Observations

BB symptoms in fungicide-treated blocks

Production cohorts

- Some blocks apparently BB free
- Related to age (year BB introduced) or material source



Grower perceptions

BB goes away once:

- plants are spaced properly
- plants moved out to field
- fungicide treatments begin

BB mainly affects younger plants

BB explodes in Fall/Spring rains



Misperceptions

Fungicides cure BB

BB cannot come from debris



Cultivars affected

Cultivar	% pos. samples from at least 1 nursery						Ave %	# samples
	1	2	3	4	5	6		
Arctic Emerald	67						67	6
Baby Gem	60						60	5
Chicagoland Green	16						16	60
Common	82	30	5	0			39	170
Dee Runk	75	50	14	0	0		46	44
Graham Blandy	83	0					83	24
Green Gem	55	33	29	0			39	101
Green Mound	100						100	1
Green Mountain	34	12	7	3	0	0	14	423
Green Velvet	86	84	44	30	17	11	45	467
Highlander	50	0	0				50	13
Julia Jane	17	0					17	22
Newport Blue	32						32	19
Skywalker	11	0					11	23
Sprinter	50						50	1
Suffruticosa + sel.	100	100	37	0			79	71
Vardar Valley	50	50					50	4
Variiegata	40	21	0	0			31	37
Winter Gem	83	19	18	0	0		40	24
Wintergreen	75						75	35



Cultivars affected

Cultivar	% pos. samples from at least 2 nurseries						Ave %	# samples
	1	2	3	4	5	6		
Vardar Valley	50	50					50	4
Variegata	40	21	0	0			31	37
Common	82	30	5	0			39	170
Suffruticosa + sel.	100	100	37	0			79	71
Green Gem	55	33	29	0			39	101
Dee Runk	75	50	14	0	0		46	44
Winter Gem	83	19	18	0	0		40	24
Green Mountain	34	12	7	3	0	0	14	423
Green Velvet	86	84	44	30	17	11	45	467

Boxwood Blight Recommendations

1. Quarantine new plants
2. Eliminate pot-to-pot production
3. Smaller blocks and adequate plant spacing
 - Be able to see in and walk through
4. Environmental management
 - Reduce shading
 - Don't overwater
 - Increase air circulation/drying
5. Guidance on what to do if BB is found
 - Fungicides don't cure BB
 - Destruction blocks/eradication zones

