

Boxwood Blight- A Managed Disease

Bennett Saunders
Saunders Brothers, Inc.
Saunders Genetics LLC
February 2020



1948
The
Beginnings













The
Future of
Boxwood

- 1) Better Boxwood Cultivars**
- 2) Best Management Practices

Why All the Cultivars?

English Boxwood (*Buxus Suffruticosa*)

	1-10 Each	10-100 Each	100-250 Each
2-3" Liners.....	\$.15	\$.14	\$.12
3-4" Liners.....	.18	.17	.16
4-6" Gallon Cans.....	.60	.50	.45
6-8" Gallon Cans.....	.90	.80	.70
8-10" B.B.....	1.25	1.15	1.10
10-12" B.B.....	1.75	1.50	1.40
12-15" B.B.....	2.25	2.00	1.75
15-18" B.B.....	4.50	4.00	

Specimen English Boxwood (*Buxus Suffruticosa*)

Typical Prices

15" B.B.....	\$ 3.00 Ea.	27" B.B.....	\$15.00 Ea.
18" B.B.....	6.00 Ea.	30" B.B.....	20.00 Ea.
21" B.B.....	9.00 Ea.	33" B.B.....	27.50 Ea.
24" B.B.....	12.00 Ea.	36" B.B.....	35.00 Ea.

Ilex Crenata Rotundifolia

Boxwood Decline



1970's- 1980's- NEW CULTIVARS
EMERGE

Buxus microphylla var. japonica 'Green Beauty'

Buxus x 'Green Velvet'

Buxus sempervirens 'Justin Brouwer'

Buxus x 'Green Mountain'

Another
pest-
Boxwood
Leafminer





Defoliation
from
Boxwood
Leafminer



Search for
cultivars
with
better BLM
resistance



2000's-
Research on
BLM
resistance



2011
The Game
Changer-
Boxwood Blight



What is Boxwood Blight?

- Fungus: *Cylindrocladium buxicola*
- Sticky, heavy spores
- Movement: water, plant to plant, debris, human/equipment
- Optimal conditions: warm and wet, 65-75 F
- Sensitive to heat/cold
- Pathogen can live in ground, perhaps for years
- Spreads with water splashing

Circa 2013-
Staunton,
VA



Varietal
Tolerance-
2012-2014
Searching for
Solutions with
N. C. State



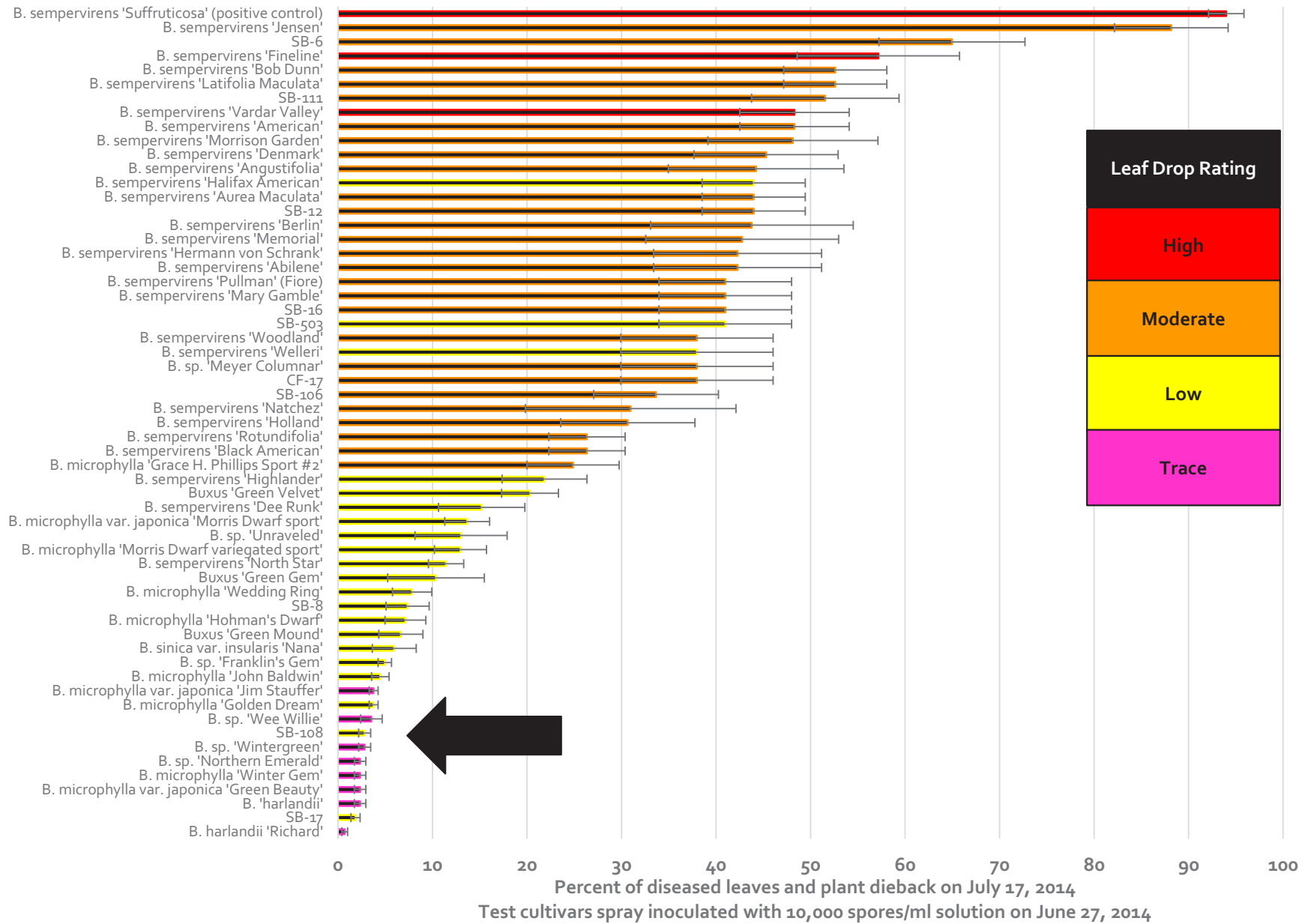




2012 – HOPE

157 Cultivars tested

Susceptibility of Commercial Boxwood Cultivars to Boxwood Blight
 Summer 2014 - 21 dpi



2015-2018
Private
Research





GROUP 7B - Aug 23 2018, Keith and Bennett ratings					
	Avg	Avg	Avg	Avg	Overall Average % defoliation
	Rep 1	Rep 2	Rep 3	Rep 4	
Cultivar					
Golden Dream	2.0%	0.0%	1.0%	1.0%	1.0%
SB 108	0.0%	0.0%	1.0%	3.5%	1.1%
Green Beauty	2.0%	2.0%	1.0%	1.5%	1.6%
SB 300	1.5%	3.5%	1.0%	0.5%	1.6%
TM110	1.0%	1.0%	2.5%	2.0%	1.6%
G H Phillips	3.5%	3.5%	3.5%	2.0%	3.1%
Cranberry Creek	4.5%	5.0%	2.0%	2.0%	3.4%
TM102	3.5%	4.5%	2.0%	3.5%	3.4%
Lil One	3.5%	5.0%	1.0%	4.5%	3.5%
8-00-120	2.0%	2.0%	5.0%	7.5%	4.1%
1-98-96	3.5%	6.0%	6.0%	2.0%	4.4%
11-0-489	5.0%	2.5%	3.0%	7.5%	4.5%
1-98-83	6.0%	3.5%	6.0%	3.5%	4.8%
TM108	5.0%	4.5%	10.0%	3.5%	5.8%
TM101	7.5%	8.5%	6.0%	5.0%	6.8%
SB 17	8.5%	11.5%	6.5%	5.0%	7.9%
Green Velvet	20.0%	10.0%	6.0%	2.0%	9.5%
Wee Willie	10.0%	10.0%	25.0%	10.0%	13.8%
New Boxwood	22.5%	16.0%	15.0%	6.0%	14.9%
Hohman's Dwarf	32.5%	12.5%	3.5%	11.0%	14.9%
Vardar Valley	40.0%	30.0%	40.0%	30.0%	35.0%
Buddy	57.5%	30.0%	32.5%	37.5%	39.4%
Chloe	62.5%	22.5%	37.5%	40.0%	40.6%
Suffruticosa	75.0%	80.0%	65.0%	20.0%	60.0%

The
Industry
Standard
- Green
Velvet



Better Box Blight Tolerance





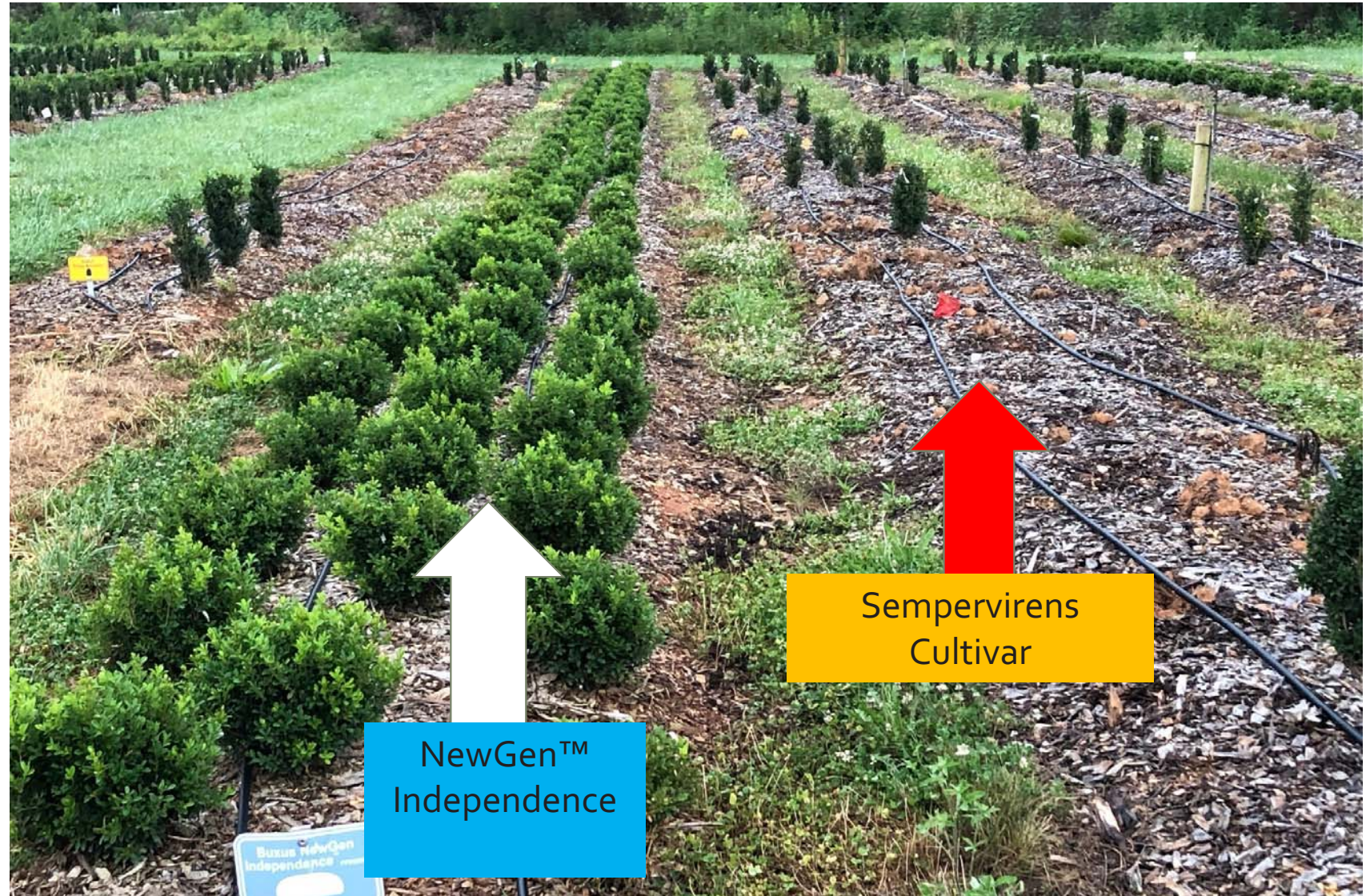
2018
The Perfect
Storm for
Boxwood
Blight



What about
Phytophthora-
aka Root Rot?



Tolerance to Phytophthora



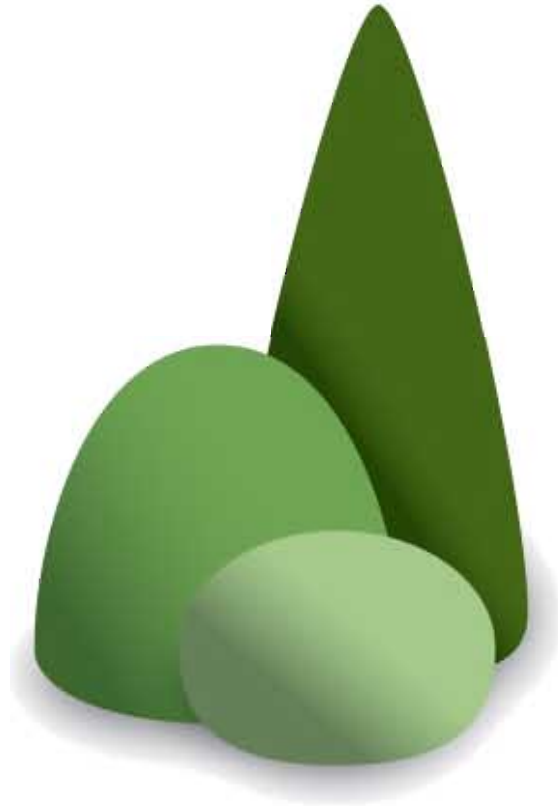
Grower Friendliness



04.30.2013

Consideration for a NewGen™ Cultivar

- Better Blight Tolerance
- WOW Factor
- Better Boxwood Leafminer Resistance
- Grower Friendliness
- Other
 - Winter Hardiness
 - Winter Color
 - Phytophthora susceptibility



NEW
GENTM
BOXWOOD

The Boxwood Revolution



NewGen™
Debut-
MANTS
2019





The
Future of
Boxwood

1) Better Boxwood
Cultivars

**2) Best Management
Practices**

Air Flow is
Important!





Example of rotational schedule-B

Week 1: Chlorothalonil (44 fl oz/A).

Week 3: Mancozeb + Tebuconazole (1.5 lb + 13 fl oz/A)

Week 5: Chlorothalonil (44 fl oz/A).

Week 7: Mancozeb + Trifloxystrobin (1.5 lb + 2 oz/A).

Week 9: Start back with the Week 1 rotation. If need be, there are other classes of systemic fungicides that could be substituted into the rotation.

Mulching
to slow
down/
prevent
Box Blight



Chuan Hong Research Key Points

- Recent research showed that mulching reduced Box Blight lesions by up to 97%
- Mulching creates a barrier between fallen infected leaves and healthy leaves.
- Any type (hardwood, softwood, pine needles) of mulch should be effective.
- Add thin layer (1/2"-1") of mulch every Spring to keep this barrier.
- If Box Blight is already present in plants, before mulching
 - a.Carefully remove ALL infected foliage from ALL boxwood in area
 - b.Remove bottom 12" of limbs/ leaves of boxwood to reduce splashing on lower leaves of plants, and to promote better air flow.

✘ Cleaning station

■ Boxwood growing area







STOP ALL VISITORS
To help ensure we don't spread plant diseases, please step gently in the footbath (black plastic mat) before entering office.
Thank you

SAUNDERS BROS. INC.
MAIN OFFICE

NO SOLICITING

SAUNDERS BROS. INC. 100





Plastic or rubber
boards preferred
over metal
for drainage

Know Cultivar Susceptibility

Cultivar	Zone	Updated Box Blight Tolerance	Leafminer Resistance
<i>Buxus sempervirens</i> 'Buddy'	6-8	-	++
<i>Buxus</i> x 'Glencoe' Chicagoland Green™	5-8	+ -	--
<i>Buxus sempervirens</i> 'Dee Runk'	6-8	+*	+
<i>Buxus sempervirens</i> 'Elegantissima'	6-8	--	+
<i>Buxus sempervirens</i> 'Fastigiata'	6-8	+*	+
<i>Buxus microphylla sinica</i> 'Franklin's Gem'	5-8	++	++
<i>Buxus microphylla</i> 'Golden Dream'	6-8	++	++
<i>Buxus microphylla</i> 'Grace Hendrick Phillips'	6-8	-	++
<i>Buxus microphylla</i> v. <i>japonica</i> 'Green Beauty'	6-8	++	-
<i>Buxus</i> x 'Green Gem'	5-8	+ -	--
<i>Buxus</i> x 'Green Mound'	5-8	+ -	-
<i>Buxus</i> x 'Green Mountain'	5-8	+ -	-
<i>Buxus microphylla</i> 'Green Pillow'	5-8	-	++
<i>Buxus</i> x 'Green Velvet'	5-8	+ -	--
<i>Buxus harlandii</i>	7-9	++	++
<i>Buxus sinica</i> v. <i>insularis</i> 'Nana'	6-8	++	++
<i>Buxus sempervirens</i> Jensen	6-8	--	+
<i>Buxus microphylla</i> v. <i>japonica</i> 'Jim Stauffer'	5-8	++	+
<i>Buxus microphylla</i> 'John Baldwin'	6-8	++	-
<i>Buxus sempervirens</i> 'Justin Brouwers'	6-8	--	--
<i>Buxus microphylla</i> 'Little Missy'	5-8	++	+
<i>Buxus microphylla</i> v. <i>japonica</i> 'Morris Dwarf'	6-8	--	++
<i>Buxus microphylla</i> v. <i>japonica</i> 'Morris Midget'	6-8	--	+
<i>Buxus</i> NewGen Freedom™	5-8	++	++
<i>Buxus</i> NewGen Independence™	5B-8	++	+
<i>Buxus harlandii</i> 'Richard'	7-9	++	++
<i>Buxus sempervirens</i> (American)	5-8	+ -	+
<i>Buxus sempervirens</i> 'Suffruticosa' (English)	6-8	--	++
<i>Buxus sempervirens</i> 'Vardar Valley'	5-8	-	++
<i>Buxus microphylla</i> v. <i>japonica</i> 'Winter Gem'	5-8	++	++
<i>Buxus microphylla</i> v. <i>japonica</i> 'Wintergreen'	5-8	++	+

*Better Tolerance because of upright plant architecture

Boxwood Blight* Tolerance Key

Most Tolerant	++
Somewhat Tolerant	+
Variable Tolerance/Susceptibility	+ -
Somewhat Susceptible	-
Most Susceptible	--

Boxwood Leafminer** Resistance Key

Very Resistant	++
Somewhat Resistant	+
Neither Resistant nor Susceptible	+ -
Somewhat Susceptible	-
Very Susceptible	--

*Boxwood blight tolerance data based on multiple tests and observations from Saunders Brothers 2012-2018.

**Boxwood leafminer resistance data based on multiple tests from Saunders Brothers 2008-2018.

The End of
Suffruticosa-
English
Boxwood



Be Blight Smart

- Stay educated.
- Use compliant suppliers.
- Clean up between blocks.
- Minimize pruning during warm temperatures
- Avoid overhead irrigation.
- Air circulation.
- Mulch.
- More tolerant cultivars.



Take
Precautions
if Blight is
suspected



If Blight is suspected

- Take samples for testing.
- Isolate infection.
- If confirmed, carefully remove plants.
- Sanitation.
- Replanting? Mulch. Use more tolerant Varieties.
- Use BMP's published by Virginia Tech Extension.



Blight Contingency Plan



“There is no replacement for boxwood”.





ILEX
SELECT 100% GREEN

€ 22.99

4540

SELECT 100% GREEN
DARK GREEN ILEX
DARK GREEN ILEX
100% GREEN

-LE IT!
Dark Green

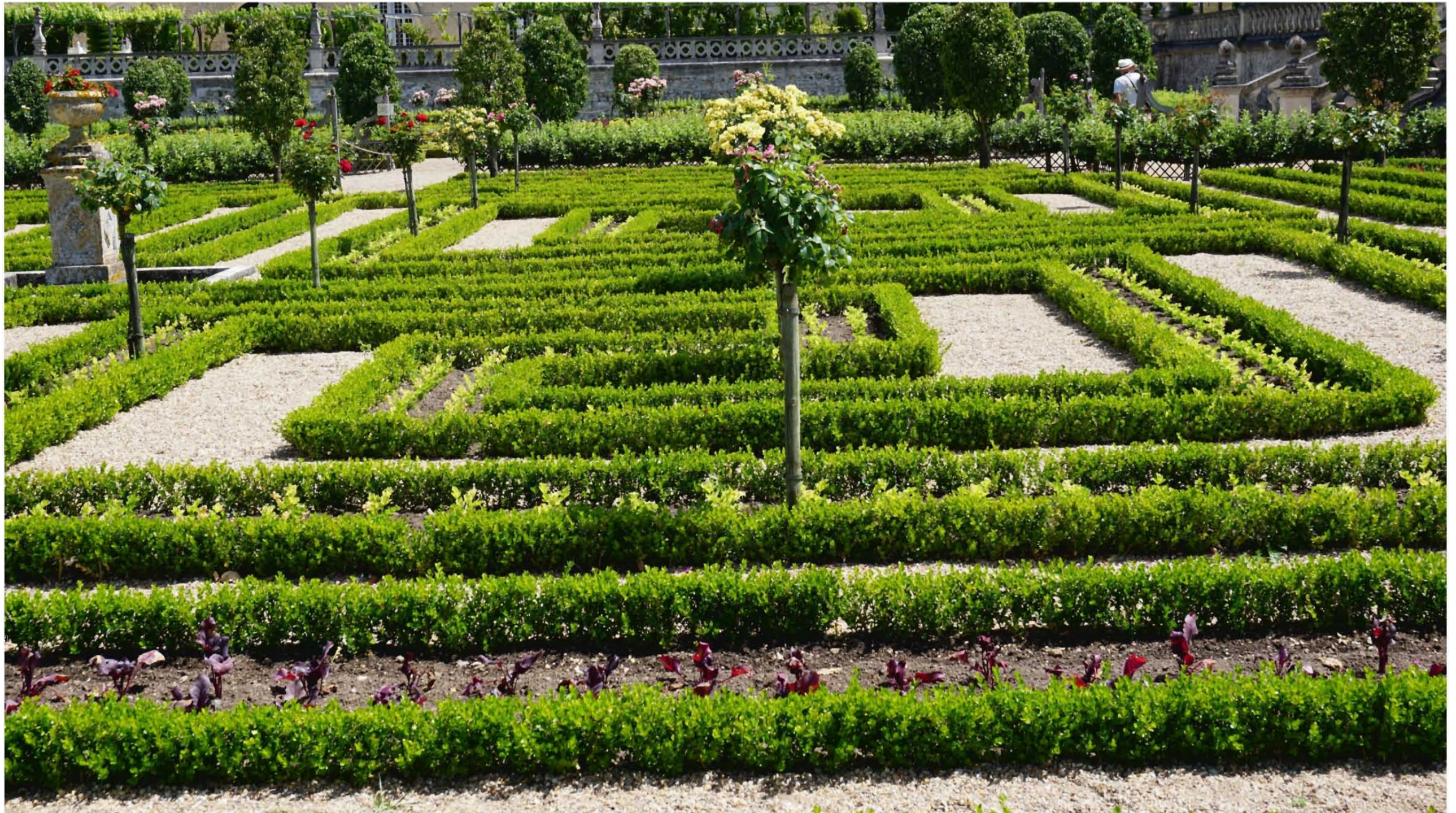
Substitute???



Sky
Pencil
Holly?













MaxMara











**SAVE
THE
DATE**

The
AMERICAN BOXWOOD SOCIETY
presents



Third International Summit on Boxwood Challenges

A ONE-DAY SUMMIT TO DISCUSS THE MOST UP-TO-DATE
INFORMATION FOR THE MANAGEMENT & PREVENTION OF
Boxwood Blight and Boxwood Tree Moth

February 19, 2020

Location

The National Agriculture Library
Main Reading Room
USDA-ARS
10301 Baltimore Ave
Beltsville, MD 20705



MORE DETAILS TO COME!

PLEASE CONTACT US BY EMAIL AT AMBOXWOODSOCIETY@GMAIL.COM
OR VISIT OUR WEBSITE, WWW.BOXWOODSOCIETY.ORG, TO REGISTER.

Save the Date!

THANKS!



Common or Tag Name	3 yr avg BLM/leaf	1st year BLM test year	# years tested	
Insularis 'Nana'	0.1	2008	3	
Suffruticosa	0.3	2008	3	
SB17	0.5	2012	3	Genetically almost identical to New Gen Freedom™
Jim Stauffer	1.1	2008	3	
Wintergreen	1.1	2008	3	
Elegantissima	1.9	2008	3	
SB108	2.1	2010	3	New Gen Independence™
Dee Runk	2.2	2008	3	
Small Leaf Wintergreen	2.9	2010	3	
Green Mound	4.2	2008	3	
Green Beauty	4.4	2008	3	
John Baldwin	4.4	2008	3	
Green Mountain	4.7	2008	3	
Green Velvet	5.1	2008	3	
Justin Brouwers	5.8	2008	3	
Chicagoland Green	6.2	2008	3	
Green Gem	6.2	2008	3	
Green Gem	7.1	2011	3	
Elizabeth H. Inglis	7.6	2008	3	

The Future of Boxwood









07 01 2016





A New G



**NEW
GEN™
BOXWOOD**
The Boxwood Revolution

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Blight Contingency Plan

