



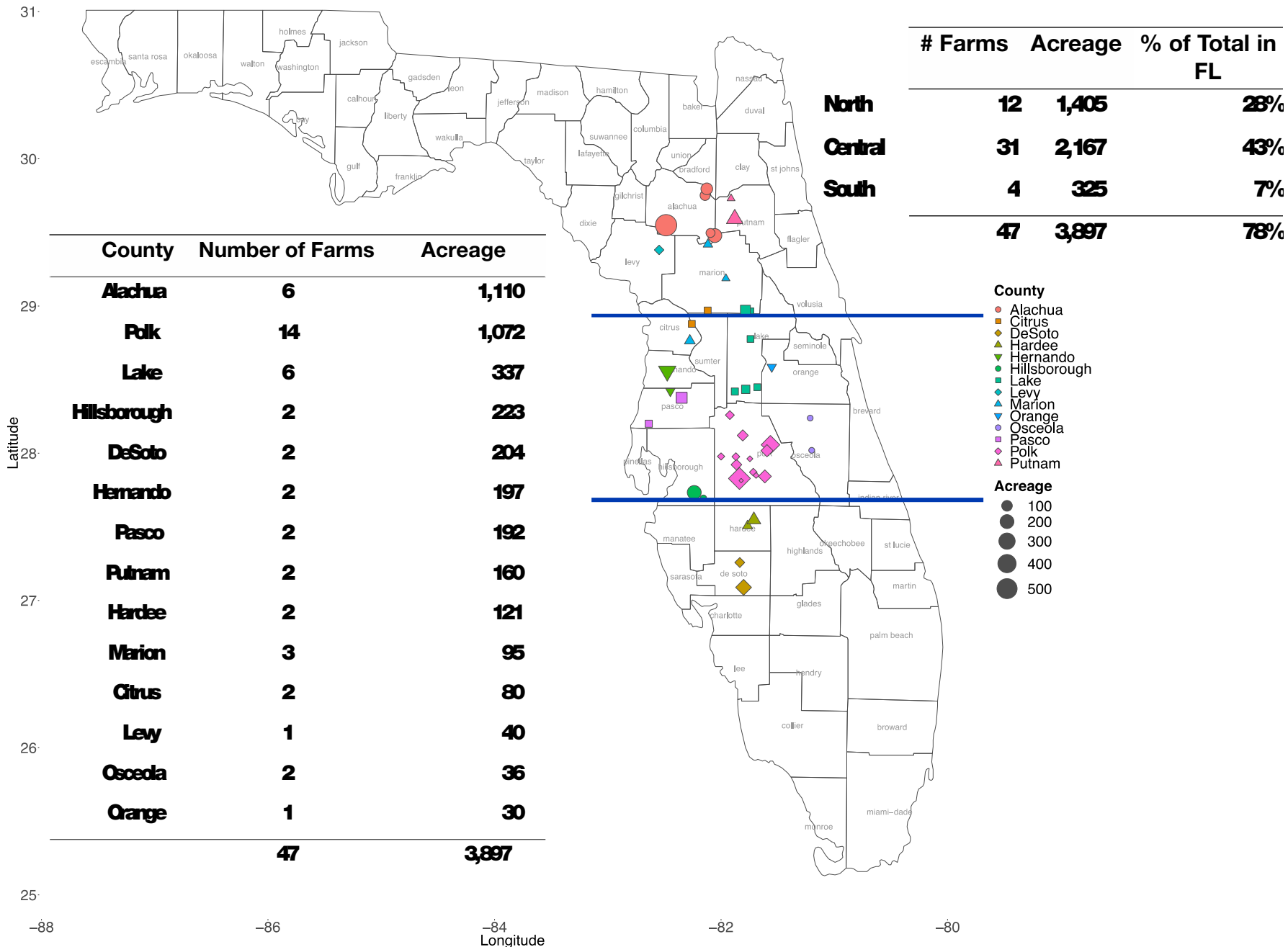
# 2019 End of Season Data Summary FBGA Fall Meeting

Doug Phillips

UF/IFAS Blueberry Extension Coordinator

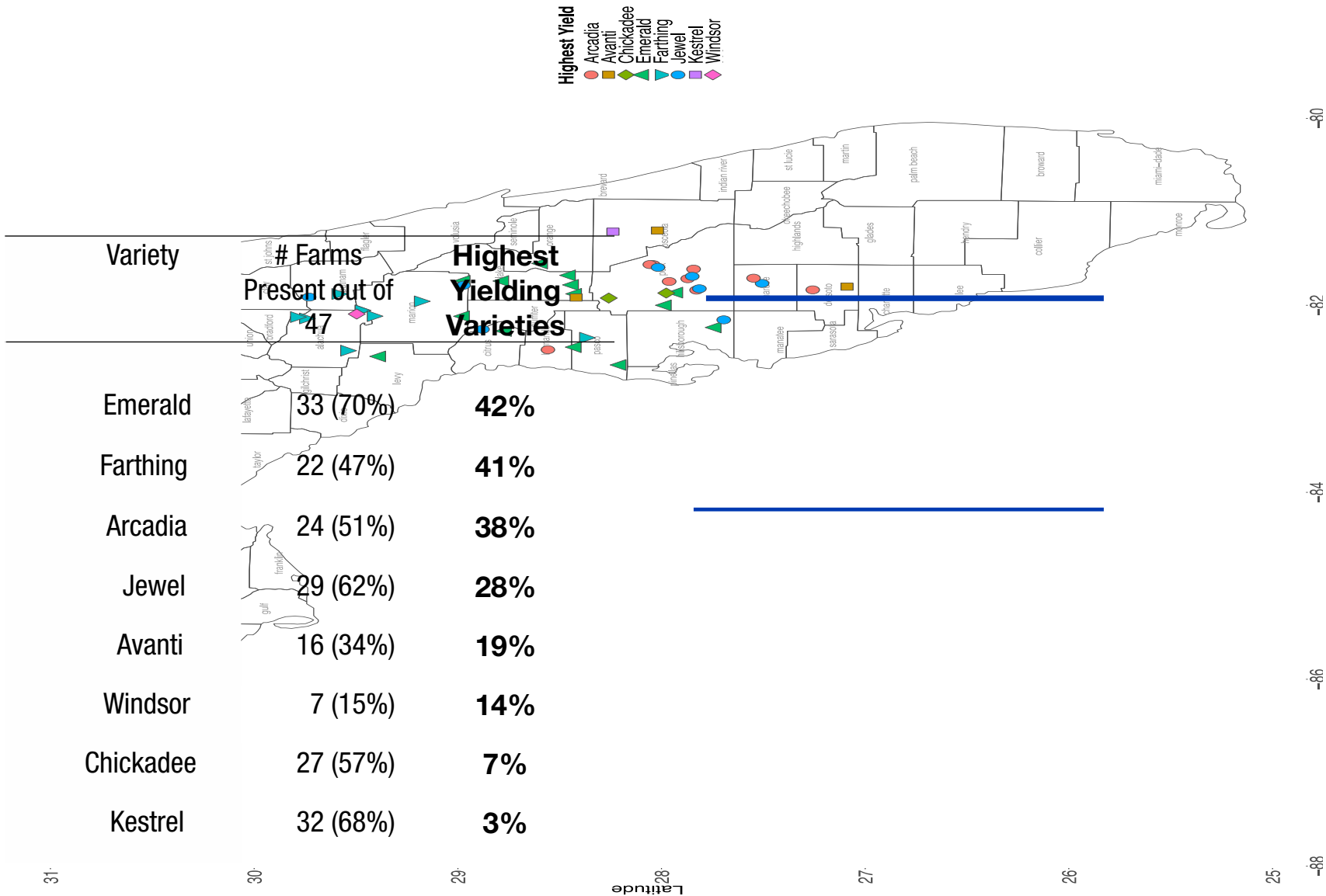
October 25, 2019

# Florida Blueberry Farms Surveyed 2019 Season



# Highest Yielding Varieties Reported by Growers

Highest Yield 2019 season



31- 30- 29- 28- 27- 26- 25- Latitude -80 -82 -84 -86 -88

# Highest Yielding Reported by Region

North-Central

Variety	# Farms Present out of 12	Highest Yielding
Farthing	12 (100%)	<b>67%</b>
Emerald	7 (58%)	<b>29%</b>
Jewel	7 (58%)	<b>29%</b>
Windsor	4 (33%)	<b>25%</b>

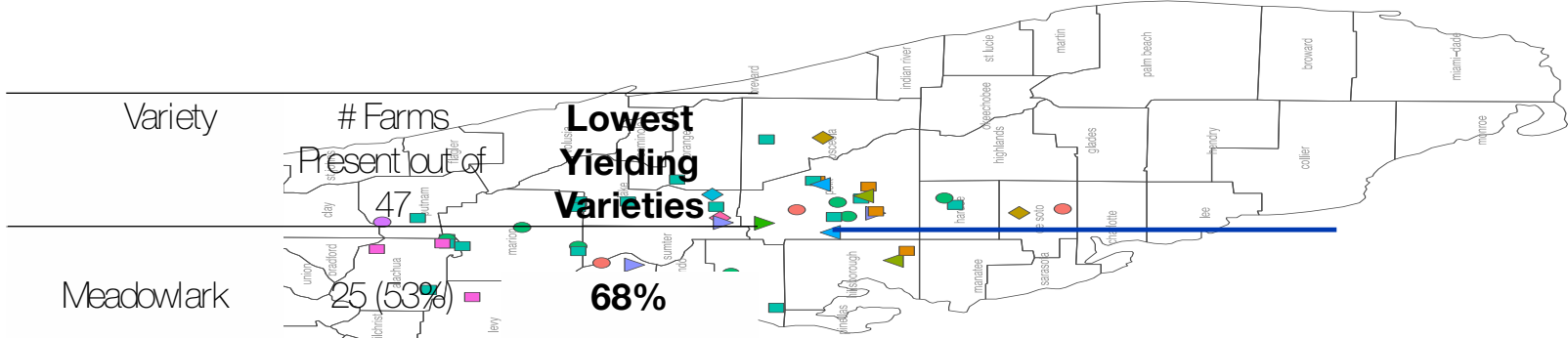
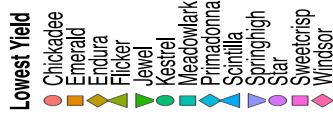
Central

Variety	# Farms Present out of 31	Highest Yielding
Emerald	24 (77%)	<b>50%</b>
Arcadia	19 (61%)	<b>37%</b>
Jewel	20 (65%)	<b>30%</b>
Avanti	11 (35%)	<b>18%</b>
Chickadee	19 (61%)	<b>11%</b>
Farthing	9 (29%)	<b>11%</b>
Kestrel	21 (68%)	<b>5%</b>

South-Central

Variety	# Farms Present out of 4	Highest Yielding
Arcadia	3 (75%)	<b>67%</b>
Avanti	2 (50%)	<b>50%</b>
Jewel	2 (50%)	<b>50%</b>

# Lowest Yielding Varieties Reported by Growers



Lowest Yield 2019 season

Variety	# Farms Present out of 47	Lowest Yielding Varieties
Meadowlark	25 (53%)	68%
Sweetcrisp	5 (11%)	60%
Flicker	7 (15%)	29%
Scintilla	8 (17%)	25%
Star	4 (9%)	25%
Kestrel	32 (68%)	22%
Primadonna	11 (23%)	18%
Endura	11 (23%)	18%
Springhigh	19 (40%)	16%
Windsor	7 (15%)	14%
Emerald	33 (70%)	12%
Chickadee	27 (57%)	11%
Jewel	29 (62%)	7%

Latitude

27

26

25

# Lowest Yielding by Region

## North-Central

Variety	# Farms Present out of 12	Lowest Yielding
Sweetcrisp	4 (33%)	<b>75%</b>
Meadowlark	8 (67%)	<b>63%</b>
Kestrel	7 (58%)	<b>29%</b>
Star	4 (33%)	<b>25%</b>
Springhigh	7 (58%)	<b>14%</b>

## Central

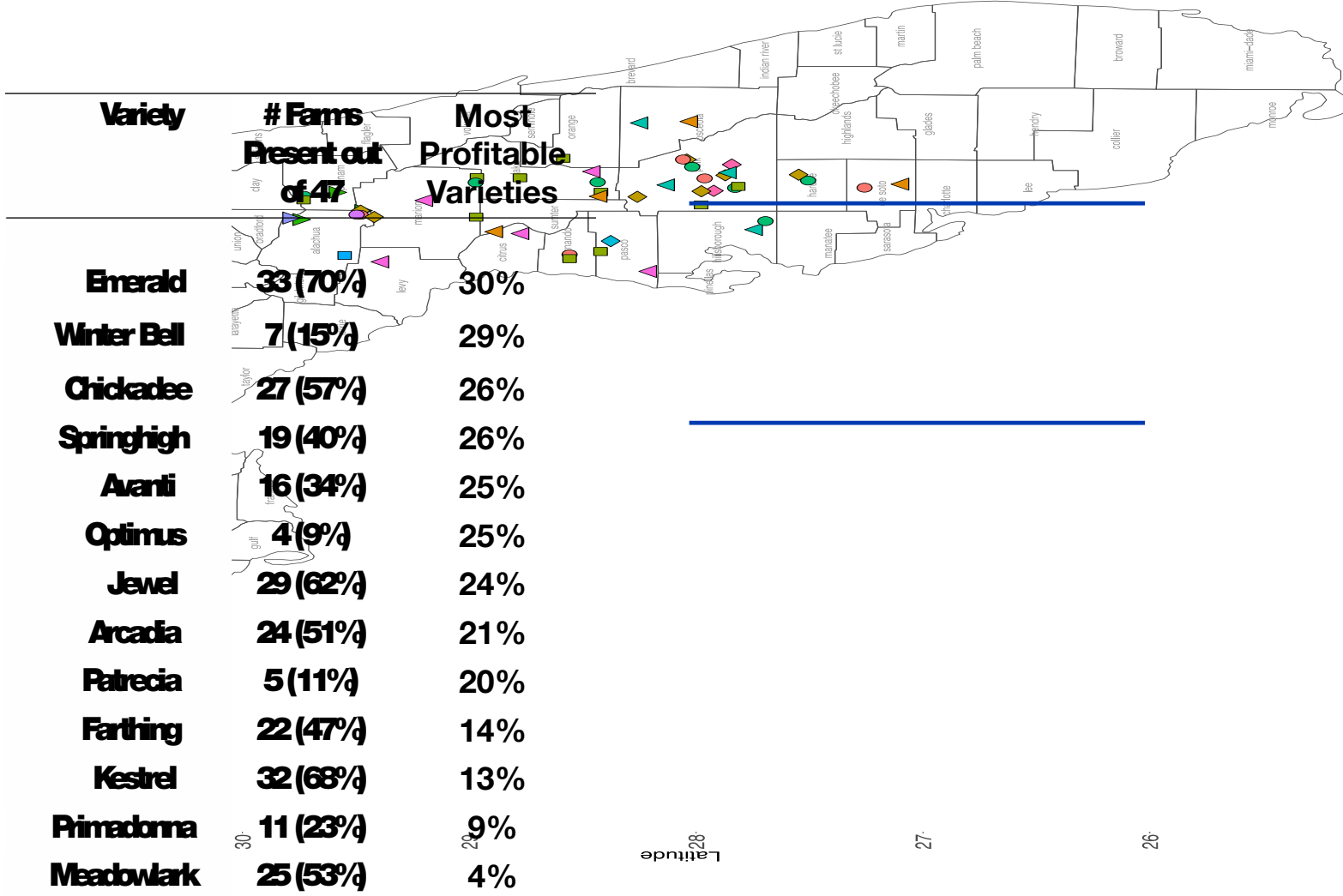
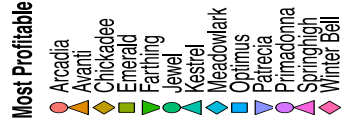
Variety	# Farms Present out of 31	Lowest Yielding
Meadowlark	17 (55%)	<b>65%</b>
Windsor	2 (6%)	<b>50%</b>
Primadonna	5 (16%)	<b>40%</b>
Scintilla	5 (16%)	<b>40%</b>
Flicker	7 (23%)	<b>29%</b>
Kestrel	21 (68%)	<b>19%</b>
Springhigh	11 (35%)	<b>18%</b>
Emerald	24 (77%)	<b>17%</b>
Chickadee	19 (61%)	<b>11%</b>
Endura	9 (29%)	<b>11%</b>
Jewel	20 (65%)	<b>10%</b>

## South-Central

Variety	# Farms Present out of 4	Lowest Yielding
Meadowlark	1 (25%)	<b>100%</b>
Endura	2 (50%)	<b>50%</b>
Chickadee	3 (75%)	<b>33%</b>
Kestrel	4 (100%)	<b>25%</b>

# Most Profitable Varieties Reported by Growers

Most Profitable 2019 season



Latitude

27

26

25

# Most Profitable by Region

## North-Central

Variety	# Farms Present out of 12	Most Profitable
Optimus	1 (8%)	<b>100%</b>
Arcadia	2 (17%)	<b>50%</b>
Chickadee	5 (42%)	<b>40%</b>
Farthing	12 (100%)	<b>25%</b>
Springhigh	7 (58%)	<b>25%</b>
Patrecia	4 (33%)	<b>25%</b>
Primadonna	6 (50%)	<b>17%</b>
Emerald	7 (58%)	<b>14%</b>
Jewel	7 (58%)	<b>14%</b>

## Central

Variety	# Farms Present out of 31	Most Profitable
Emerald	24 (77%)	<b>38%</b>
Avanti	11 (35%)	<b>27%</b>
Jewel	20 (65%)	<b>25%</b>
Chickadee	19 (61%)	<b>21%</b>
Winter Bell	10 (32%)	<b>20%</b>
Kestrel	21 (68%)	<b>19%</b>
Springhigh	11 (35%)	<b>18%</b>
Arcadia	19 (61%)	<b>16%</b>
Meadowlark	17 (55%)	<b>6%</b>

## South-Central

Variety	# Farms Present out of 4	Most Profitable
Avanti	2 (50%)	<b>50%</b>
Jewel	2 (50%)	<b>50%</b>
Arcadia	3 (75%)	<b>33%</b>
Chickadee	3 (75%)	<b>33%</b>





# Diseases by Region

North-Central

Disease	Freq	% Farms Surveyed
Algal Stem Blotch	6	50%
Anthrax Fruit Rot	4	33%
Xylella	4	33%
Stem Blight	3	25%
Rust	1	8%

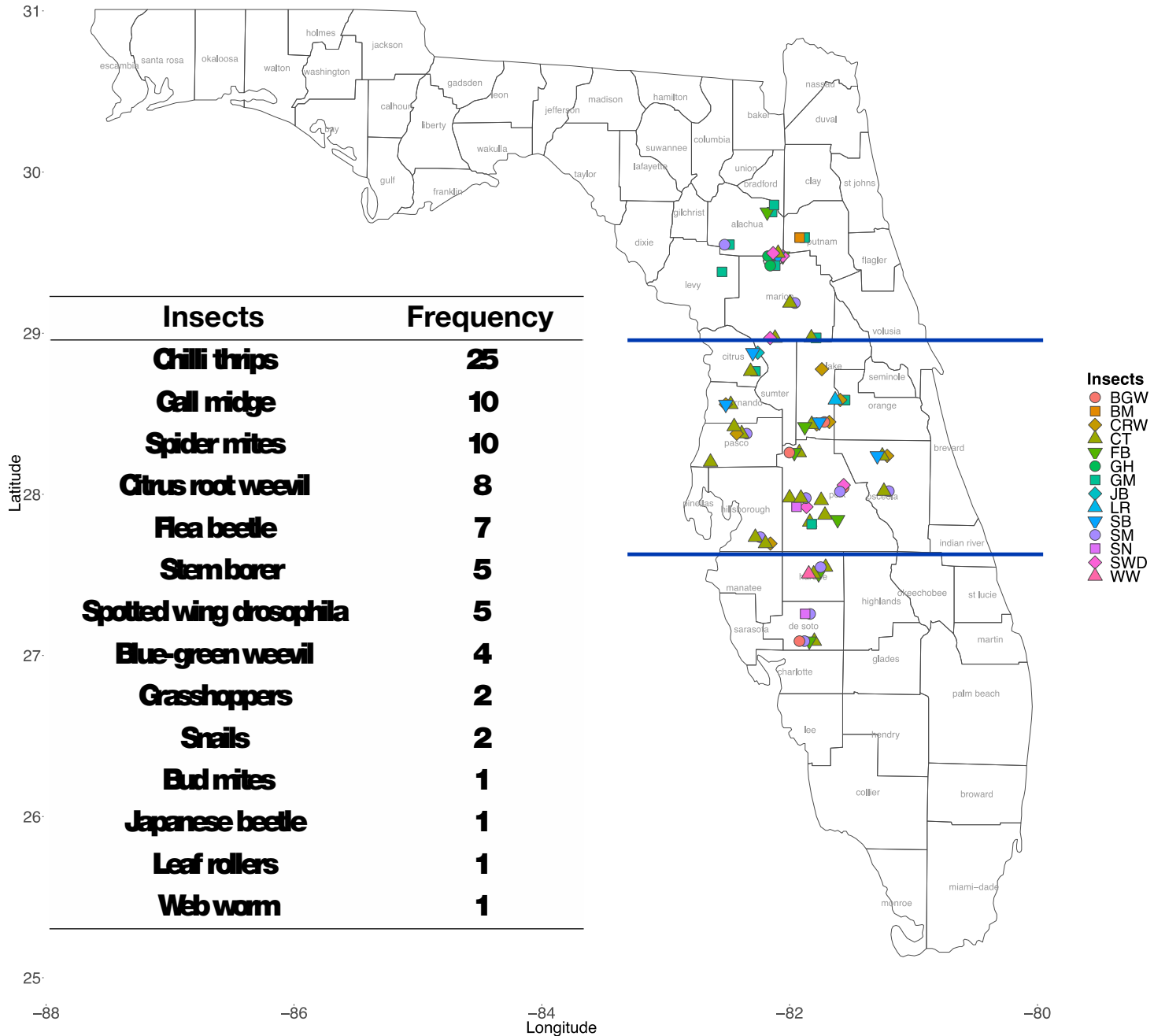
Central

Disease	Freq	% Farms Surveyed
Algal Stem Blotch	10	32%
Stem Blight	9	29%
Xylella	5	16%
Ralstonia	4	13%
Anthrax Fruit Rot	3	10%
Rust	3	10%
Phomopsis	2	6%
Target Spot	2	6%
Phyllosticta	1	3%
White Mold	1	3%

South-Central

Disease	Freq	% Farms Surveyed
Algal Stem Blotch	3	75%
Ralstonia	2	50%

# Insect Pests Most Frequently Reported by Growers



# Insect Pests by Region

## North-Central

Pests	Freq	% Farms Surveyed
Gall Midge	7	58%
Chilli Thrips	5	42%
Flea Beetles	2	17%
Grass-hoppers	2	17%
Spider Mites	2	17%
SWD	2	17%
Bud Mites	1	8%
Flatheaded Borer	1	8%

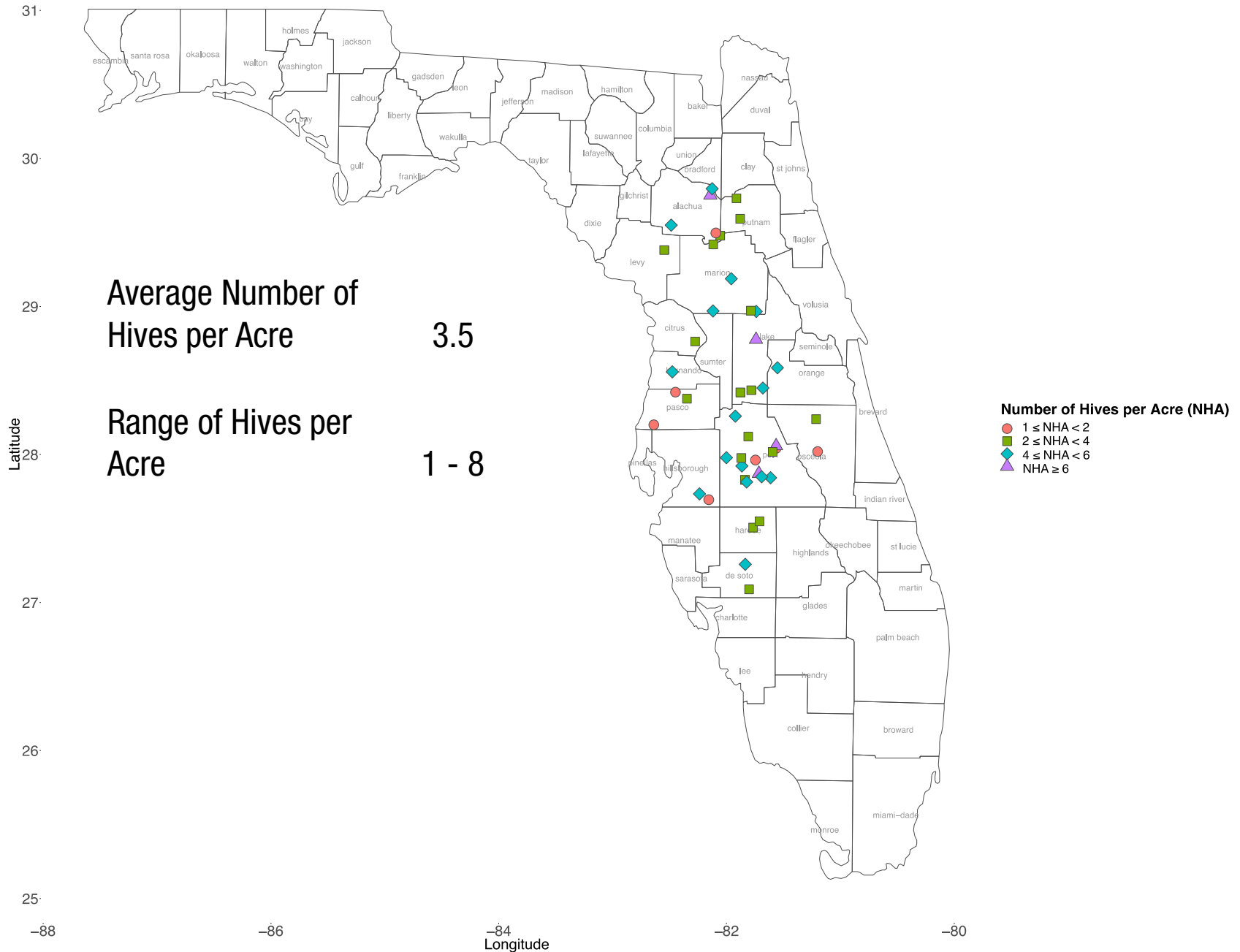
## Central

Pests	Freq	% Farms Surveyed
Chilli Thrips	17	55%
Citrus Root Weevil	8	26%
Spider Mites	5	16%
Flatheaded Borer	4	13%
Blue-Green Weevil	3	10%
Flea Beetle	3	10%
Gall Midge	3	10%
SWD	3	10%
Japanese Beetle	1	3%
Leaf Roller	1	3%
Snails	1	3%

## South-Central

Pests	Freq	% Farms Surveyed
Chilli Thrips	3	75%
Spider Mites	3	75%
Flea Beetles	2	50%
Blue-Green Weevil	1	25%
Snails	1	25%
Web Worms	1	25%

# Honey Bee Hives per Acre Reported by Growers





# 2018 – 2019 Comparison

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	<b>2019 (47 Farms)</b>	<b>2018 (24 Farms)</b>
<b>Highest Yield</b>	<b>Emerald</b>	<b>Emerald</b>
<b>Lowest Yield</b>	<b>Meadowlark</b>	<b>Meadowlark</b>
<b>Most Profitable</b>	<b>Emerald</b>	<b>Chickadee, Emerald, Springhigh</b>
<b>Diseases</b>	<b>Algal Stem Blotch</b>	<b>Algal Stem Blotch</b>
<b>Insect Pests</b>	<b>Chilli Thrips</b>	<b>Gall Midge, Spider Mites</b>

# UF Blueberry Breeding Website

2019 season data maps are available on the UF blueberry breeding website –

[www.blueberrybreeding.com/blog](http://www.blueberrybreeding.com/blog)

You can also access –

- information and data on UF blueberry cultivars
- all UF EDIS blueberry extension publications



# Florida Blueberry Scouting Phone App

- Scouting tool for field diagnosis of –
  - Disease
  - Insect pests
  - Nutrient deficiencies
  - Abiotic damage
- Specific to Florida and southern highbush
- Diagnostic key, images, extension publications

Note - this is not a substitute for sending samples for diagnosis to the UF plant disease clinic for confirmation.

# Diagnostic Key Example

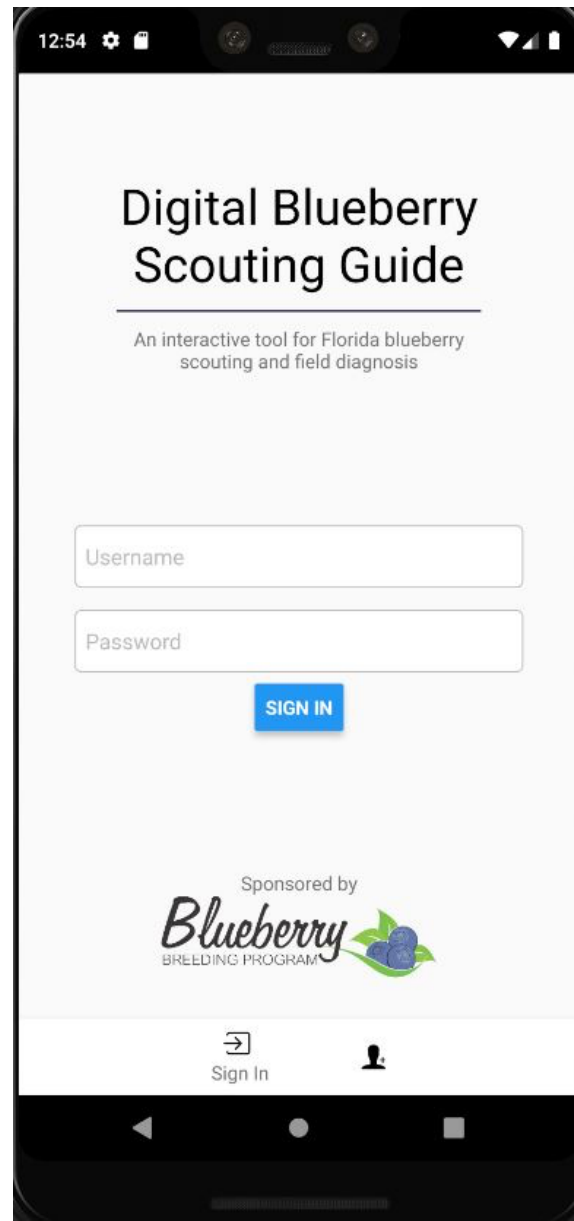


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GALLERY SEARCH

SCAN

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 Search...

Diagnostic Key >

Bacterial Disease >

Fungal Disease >

Viral Disease >

Parasitic Algae >


Insect/Mite Damage >

Nutrient Deficiency/Toxicity >

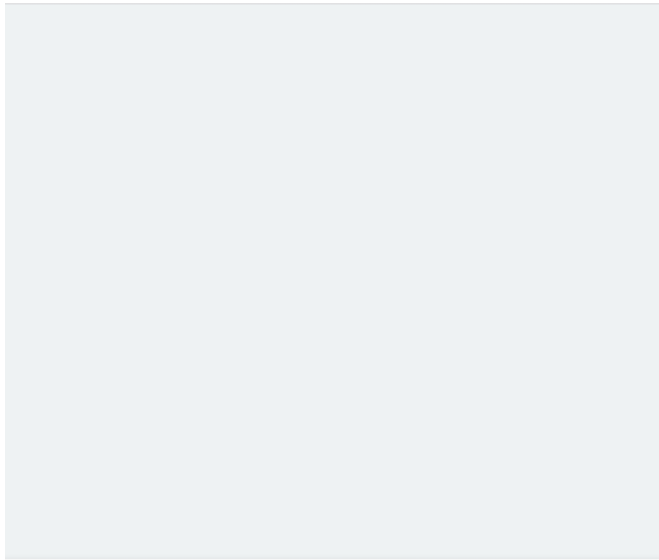
Herbicide and Other Chemical Damage >

Abiotic >



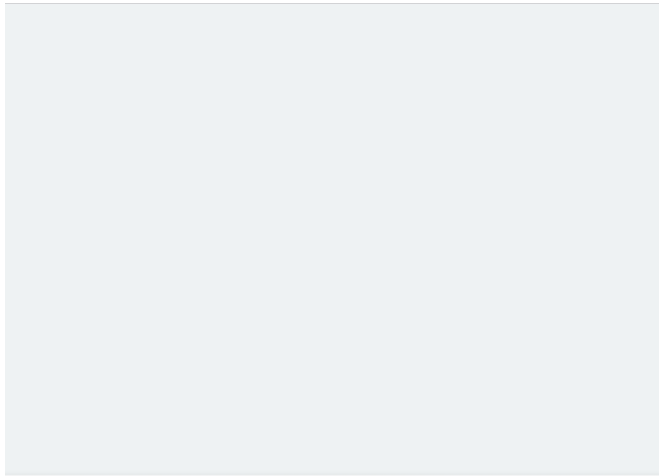
 Diagnostic Key

- a. Leaves >
- b. Stems/Canes >
- c. Floral Bud >
- d. Flower >
- e. Fruit >
- f. Roots >



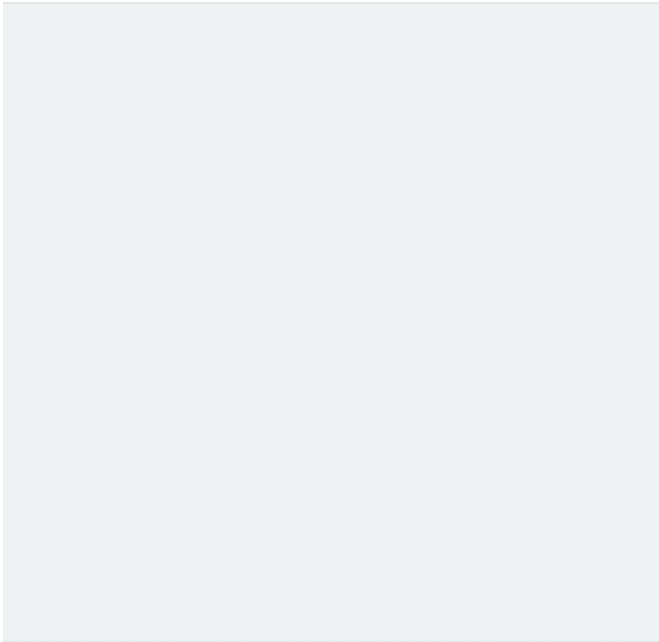
← Leaves


- i. Marginal burn >
- ii. Spotting >
- iii. Reddening, yellowing (chlorosis) >
- iv. Curling, cupping, discoloration >
- v. Blackened tip - newly emerging leaves >
- vi. Notching, shot holes >
- vii. Stippling pattern, webbing >



← Marginal Burn

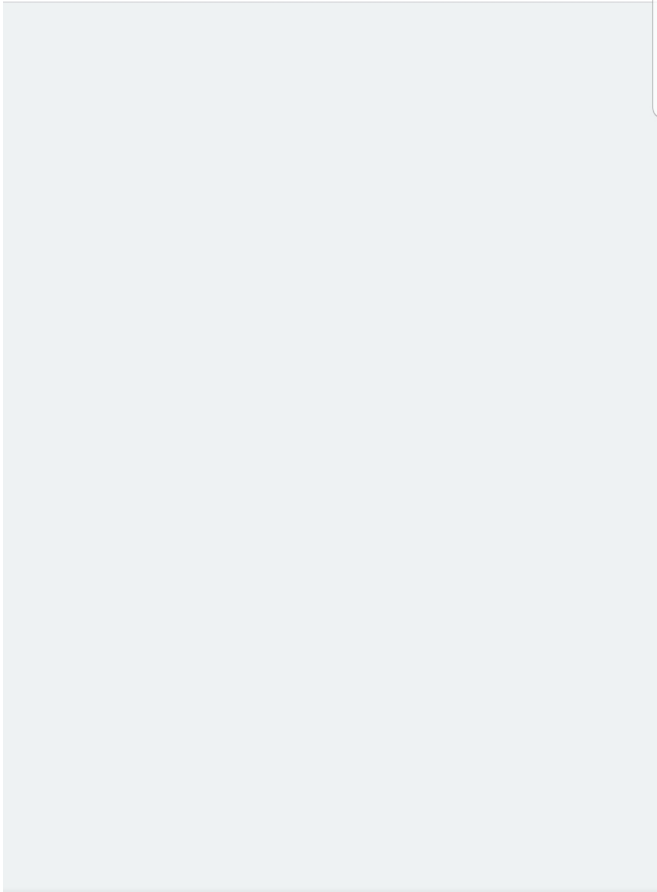
- 1. Bacterial Disease >
- 2. Fungal Disease >
- 3. Nutrient Deficiency >
- 4. Herbicide and Other Chemical Damage >
- 5. Abiotic Condition >



 Bacterial Disease

Bacterial Scorch - *Xylella fastidiosa* >

Bacterial Wilt - *Ralstonia solanacearum* >







## Bacterial Scorch

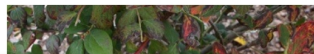
*Xylella fastidiosa*

**Symptoms** – Symptoms start as marginal-irregular leaf scorch and may appear similar to bacterial wilt or drought stress. Initial symptoms are observed on leaves attached to individual stems or groups of stems on one side of a plant. Plant vigor is reduced, stems and twigs of some varieties also acquire a distinctive yellow color, and the bushes eventually die. Symptoms typically develop within one year of infection and continue through at least a second year before plant death. Diseased plants typically are observed randomly scattered through a field rather than in distinct circles or groups within a row. The variety 'Meadowlark' is susceptible to this disease.

**Disease Cycle** – Insect vectors (primarily glassy-winged sharpshooter) transmit the bacteria by injecting it into the plant xylem during feeding. The bacteria move throughout the xylem, forming colonies and producing exudate that clogs the xylem. Propagation from infected plants may also transmit the bacteria infrequently.

**Management** – There are no known chemical controls for the *Xylella* bacteria. Some control of new infections may be achieved by controlling the insect vector with insecticides. Infected plants should be removed and destroyed. Reducing plant stress may help to minimize the development of symptoms.

### Images



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## Bacterial Scorch

*Xylella fastidiosa*

variety 'Meadowlark' is susceptible to this disease.

Disease Cycle – Insect vectors (primarily glassy-winged sharpshooter) transmit the bacteria by injecting it into the plant xylem during feeding. The bacteria move throughout the xylem, forming colonies and producing exudate that clogs the xylem. Propagation from infected plants may also transmit the bacteria infrequently.

Management – There are no known chemical controls for the *Xylella* bacteria. Some control of new infections may be achieved by controlling the insect vector with insecticides. Infected plants should be removed and destroyed. Reducing plant stress may help to minimize the development of symptoms.

### Images



### Resources

2019 Florida Blueberry Integrated Pest Management Guide. (<https://edis.ifas.ufl.edu/hs380>)



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# Acknowledgements

- Participating blueberry growers
- Ivone de Bem Oliveira – map development
- UF Blueberry Breeding Program





# Questions?

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