





Anything FL doesn't have?

- mummy berry, Monilinia vaccinii-corymbosi
- Exobasidium, leaf and fruit spots
- viral scorch, stunt or shock
- nematodes



Stem blight

- Species within Botryosphaeriaceae
- Severity related to stresses
- No effective fungicide options

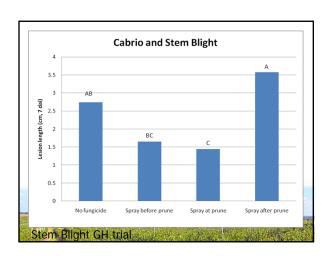


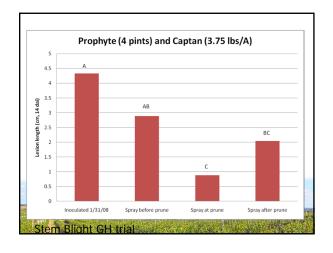


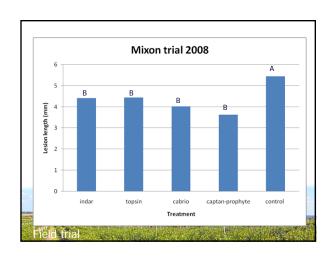




Colony	Seq. ^d	No.	Percent	No.	Percent	No.	Percent
	1000						
25	17	14	82	3	18	0	
							0.00
52	37	27	73	10	27	0	
				2			5
29		12				0	
						1	2
99	78	56	72	21	27	1	1
24				1	5	0	
							13
47	34	27	79	5	15	2	6
				3		2	12
				2			
	29	22				2	7
92	63	49	78	10	16	4	6
30	23	20	87	3	13	0	(100.0
30	18	14	78	4	22	0	
60	41	34	83	7	27	0	***
26	20	14	70	4	20	2	10
29	17	11	65	6	35	0	
55	37	25	68	10	27	2	5
115	78	59	76	17	22	2	2
	27 52 18 29 47 99 24 23 47 21 45 92 30 60 60 29 55 51 51	27 20 37 18 18 18 29 21 47 31 19 24 19 24 14 14 45 29 21 14 14 45 29 20 63 18 60 48 16 50 50 50 50 50 50 50 50 50 50 50 50 50	27 20 30 13 22 37 27 23 28 24 18 18 17 29 29 78 26 20 11 12 29 20 78 26 21 10 12 29 24 10 14 11 24 20 20 22 24 16 11 24 20	27 20 13 65 28 27 27 27 73 28 28 28 28 28 28 28 28 28 28 28 28 28 2	27 20 30 13 65 7 28 27 27 27 33 10 29 28 28 28 28 28 28 28 28 28 28 28 28 28	27 20 13 65 7 35 28 27 27 27 37 10 29 27 18 18 18 17 85 2 10 29 21 12 25 11 45 29 28 56 72 21 24 19 19 10 45 24 27 27 24 28 29 21 27 24 28 29 28 26 27 24 29 29 29 29 29 29 24 29 29 29 29 29 29 25 26 27 2 21 27 28 29 29 29 29 29 28 29	27 20 13 65 7 35 0 28 27 7 37 10 27 7 31 18 18 17 28 5 2 10 1 32 27 1 12 55 2 10 1 32 27 1 12 55 2 1 1 32 27 1 1 1 2 2 1 33 28 28 28 28 28 28 28 28 28 28 28 28 28

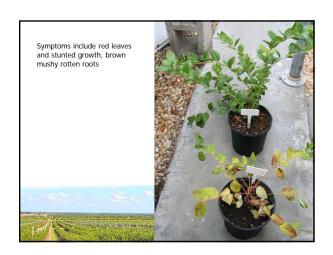




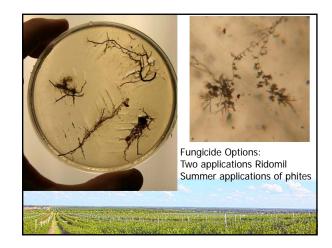


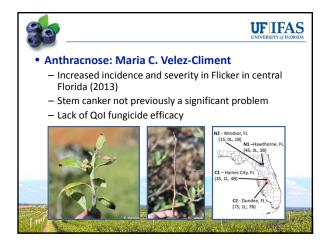






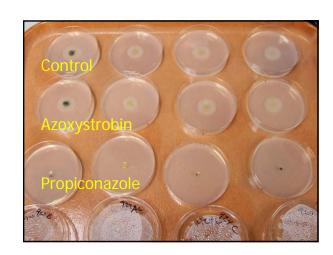




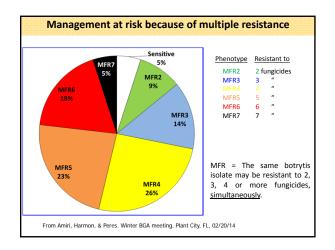


















Bacterial Wilt

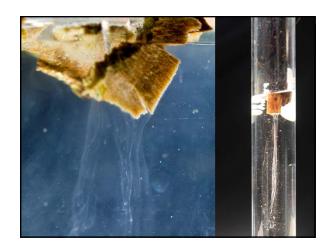
- Caused by Ralstonia solanacearum
 Soil-borne bacterium with a wide host range
- Similar symptoms to bacterial leaf scorch (*Xylella*)
- marginal scorching of leaves, dieback, stem blight, plant death
- symptoms move down the row more rapidly than across
- Xylem of plants loaded with bacterial ooze clogging vasculature causing wilt

Symptoms

- Similar to bacterial leaf scorch (Xylella)
- marginal scorching of leaves, dieback, stem blight, plant death
- symptoms move down the row more rapidly than across
- Xylem of plants loaded with bacterial ooze clogging vasculature causing wilt







Management

- Exclude the pathogen from your farm
 - Avoid movement of soil and water onto the farm
 - Sanitize equipment, tools
 - Do not use surface/recycled water for irrigation
 - Purchase clean, healthy plant material

Management

- Propagation measures to prevent bacterial wilt in nurseries
 - Do not use surface water for irrigation
 - Use well or municipal water rather than ebb and flood systems, or monitor and sanitize water
 - Do not allow soil contact with cuttings (use benches)
 - Keep production areas free of weeds and other potential host plants, particularly solanaceous

Management

- Host plant resistance
 - Arcadia, Kestrel, and Avanti are the known susceptible SHB, there will be more
 - Resistance in other crop plants has had minimal impact where the disease occurs
 - Resistance hasn't held over time or in different areas
 - Screening protocols will be incorporated in the UF IFAS blueberry breeding program
 - Need more research in this area, more time

Management

- pH, rotation, cover crops
 - High pH soil inhibits the bacterium but blueberry require low pH
 - Blueberry is a perennial crop so rotation is not an option
 - Co-cropping and cover cropping also are not viable options
- Do not plant in infested fields
 - The disease is also known as Granville wilt, after the town in NC where hundreds of tobacco farms were abandoned due to the disease

Management

- Chemical and fumigation options
 - Broad spectrum fumigants like methyl bromide, chloropicrin, 1,3D, and botanicals (Thymol) can reduce nematodes and bacterial populations, but the bacterium survives at depths below the treated soil, these products are increasingly difficult to find/use and are very costly
 - Soil drench and through-irrigation applications of phosphonate fungicides have reduced infection in vegetable and ornamental crops

Management

- EDIS publication: http://edis.ifas.ufl.edu/pp332
- K-Phite is an example product that is labeled for the disease and for blueberry
 - chemigation
 - 2 to 4 quarts in at least 200 gal of water per acre
 - drench
 - 2 to quarts in at least 100 gal of water
 - banded application
 - 2 to 4 quarts in at least 20 gal of water followed by light irrigation
 - 7 to 28 day interval

Management

- Protection options
 - no data on blueberry
 - these methods were shown effective preventing infection of geranium grown in infested soil
 - they do not cure infected plants







Managing algal stem blotch

- Copper fungicides may help
 - Two to four monthly applications in summer starting after harvest have been reported to keep the disease in check most years by growers
 - Kocide 3000 (also Kocide 2000) as well as several other products and formulations of copper
 - Avoid tank-mixes of Cu products
 - with phites and pesticides with EC formulation

Other methods?

- Phosphite fungicides applied for Phytophthora root rot management (but not immediately following copper) may help?
- Sprayers need to achieve good cane coverage
- Overhead irrigation will contribute to canopy wetness and disease
- Farthing, Primadonna, and older plantings of Emerald and Jewel get the disease.





