

Proper Disease Identification Leads to Better Management



Dr. Jeff Miller

Dr. Nora Olsen



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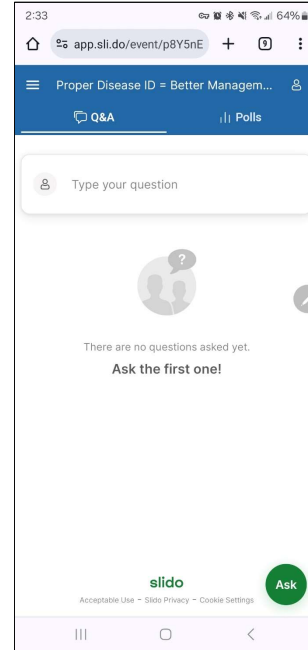


Join at slido.com
#DiseaseID-MR

① Start presenting to display the joining instructions on this slide.

Q & A with Slido

- Anonymously add questions.
- We will do our best to answer.



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Audience Q&A Session

① Start presenting to display the audience questions on this slide.

Which is Rhizoctonia canker?



A



B




C

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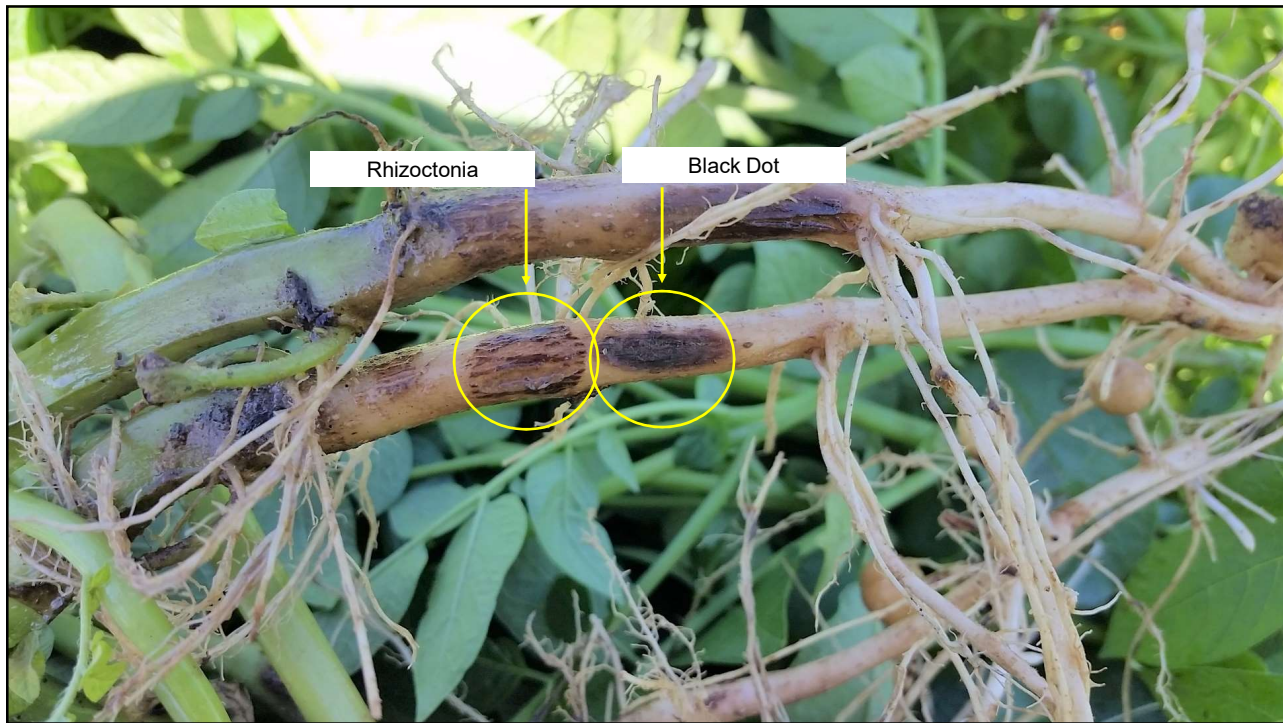


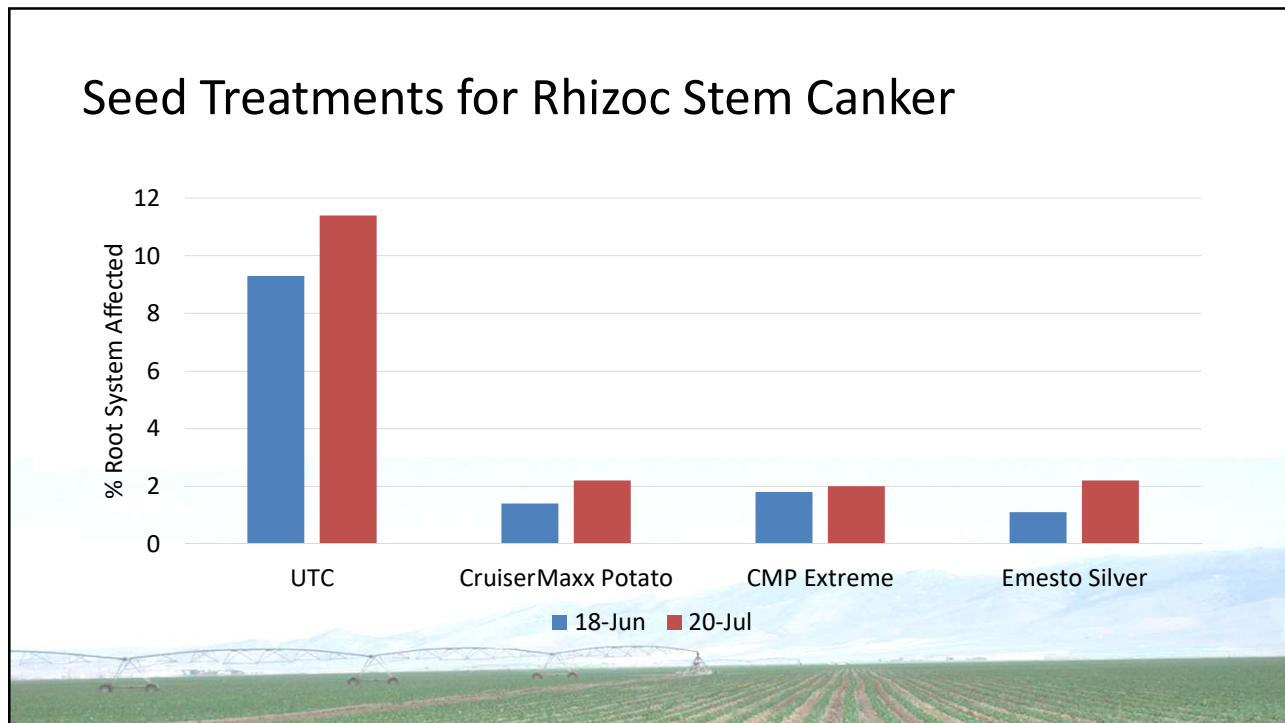
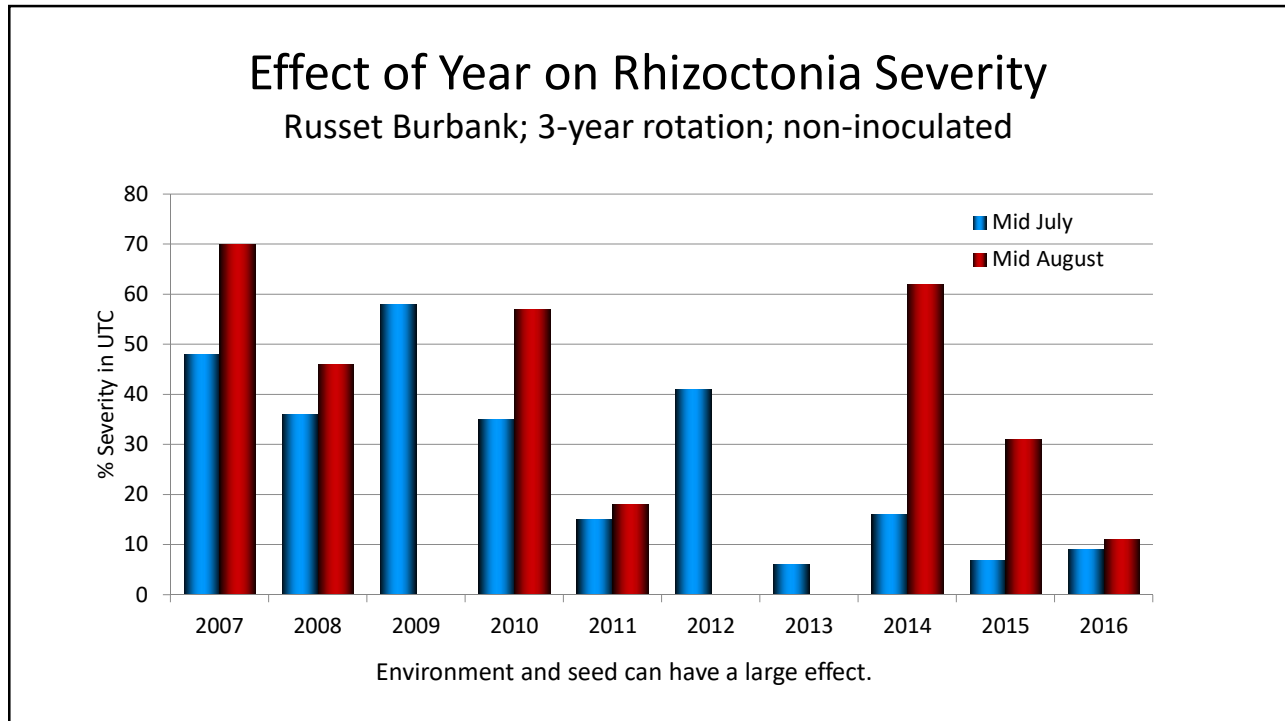
Which one is Rhizoctonia?

① Start presenting to display the poll results on this slide.



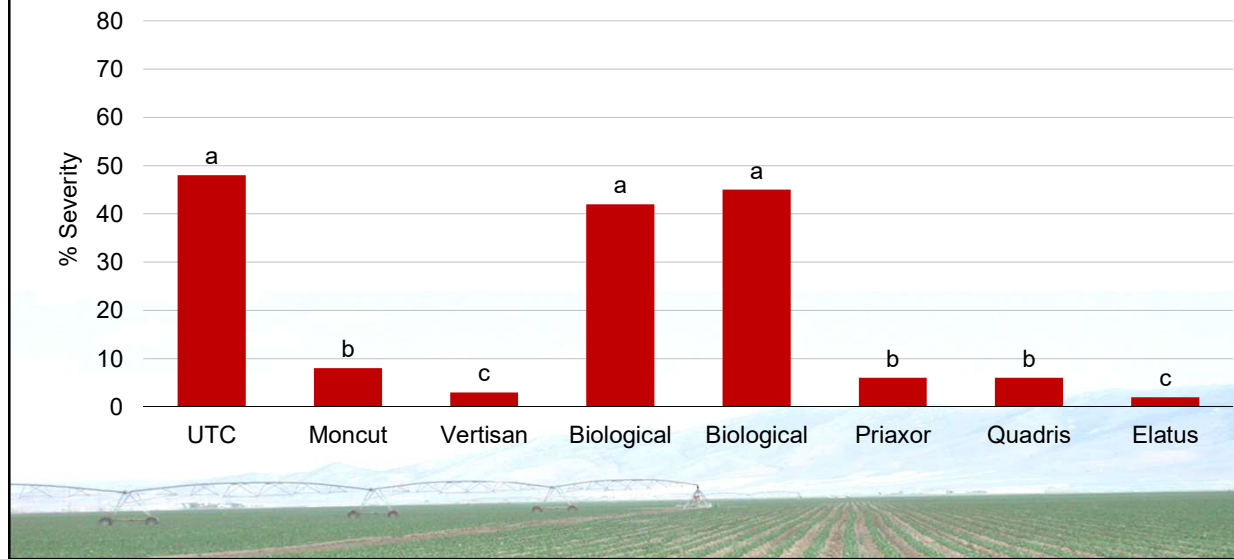
	A	B	C
Disease	Black dot	Rhizoctonia canker	Pink rot
Fungicides	*	***	***
-- ST	No	Several	(No)
-- IF	No	Several	Mefenoxam, OXTP
-- Foliar	Strobilurins (early)	No	Mefenoxam, Phos acid





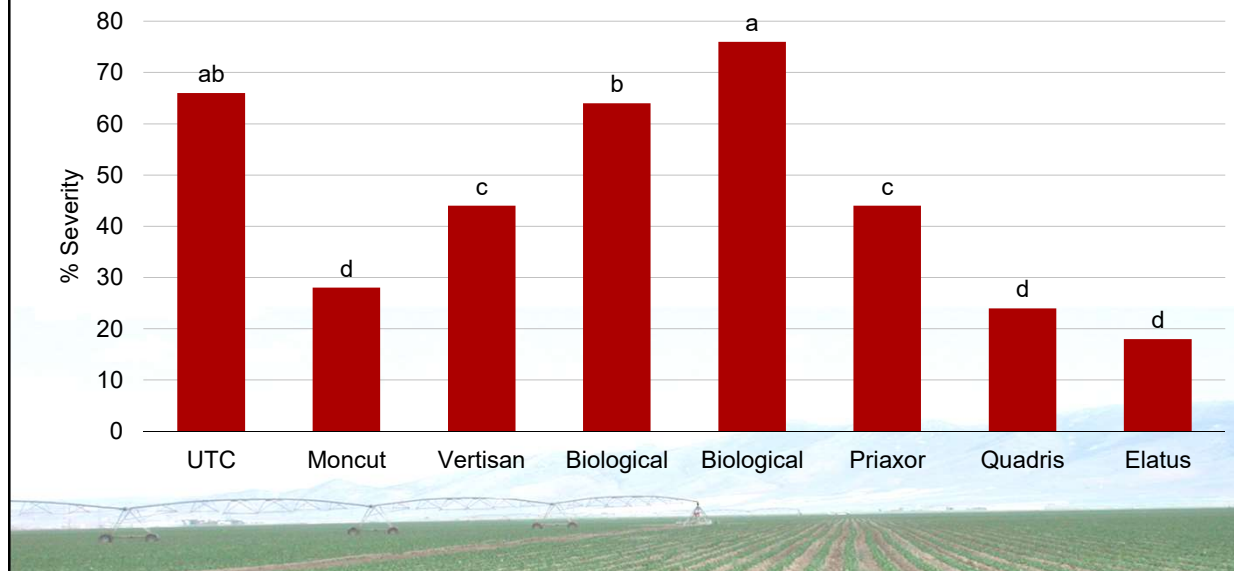
Rhizoctonia Stem Canker - 2017

June 21, 49 DAP

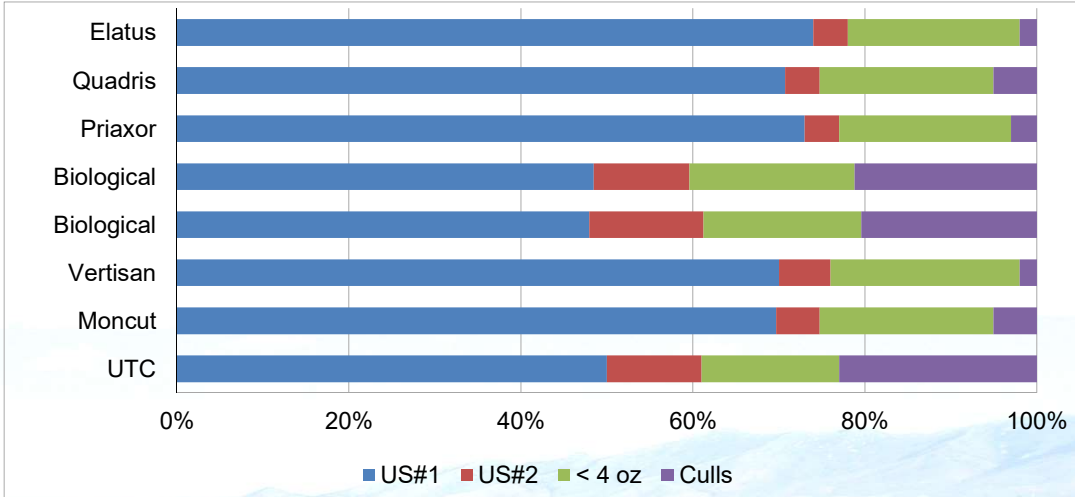


Rhizoctonia Stem Canker

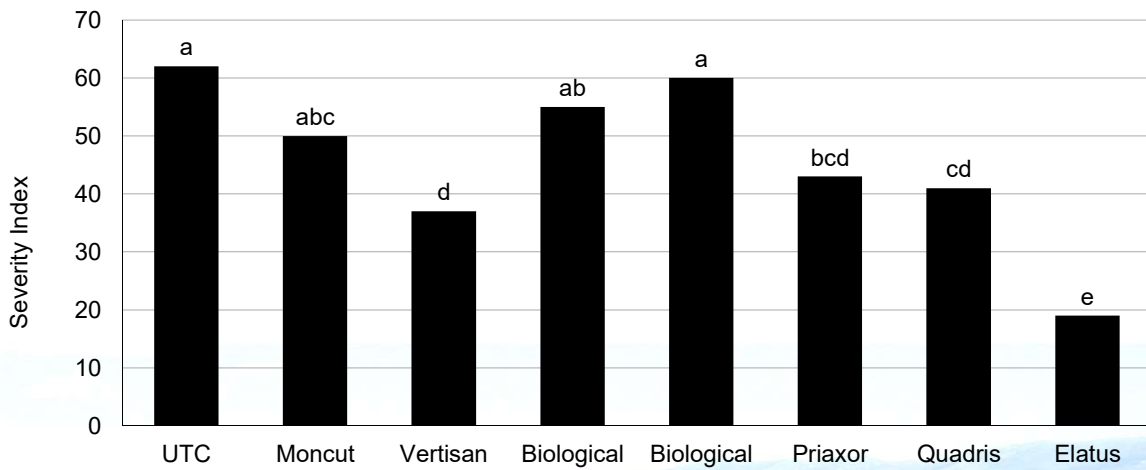
July 26, 84 DAP



Tuber Quality



Tuber Black Scurf



Which is white mold?



A



B




C

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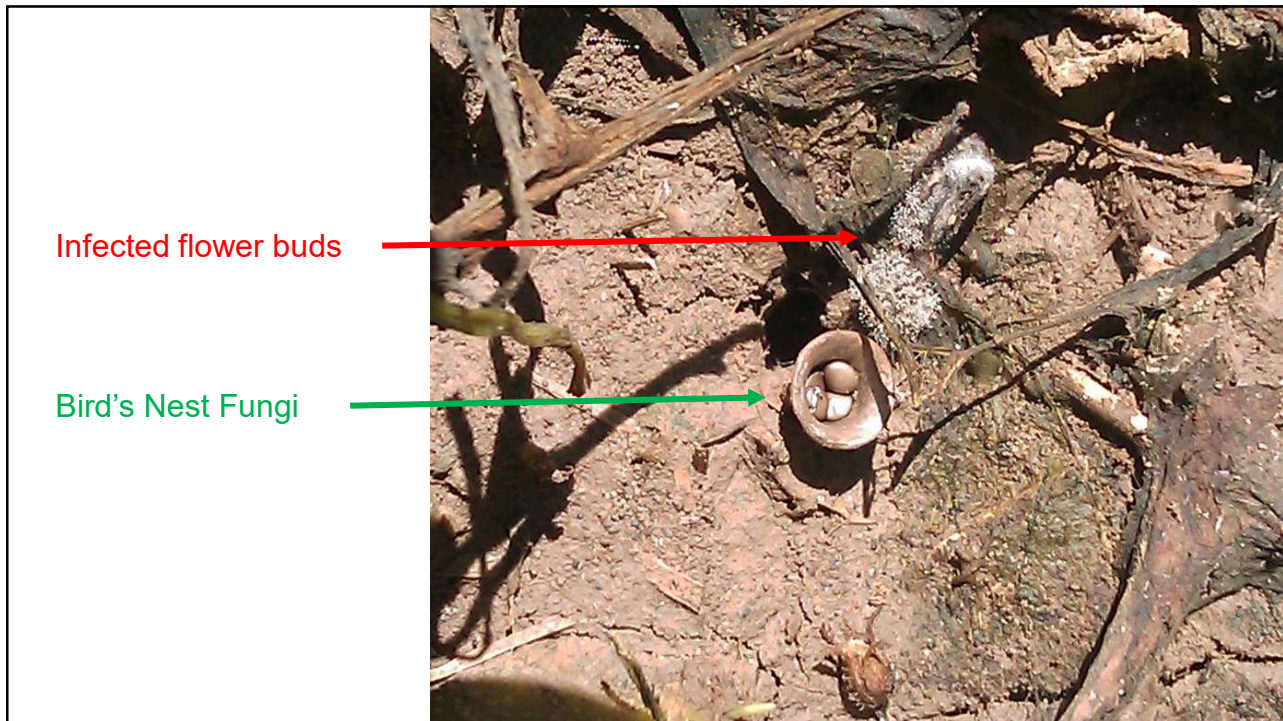


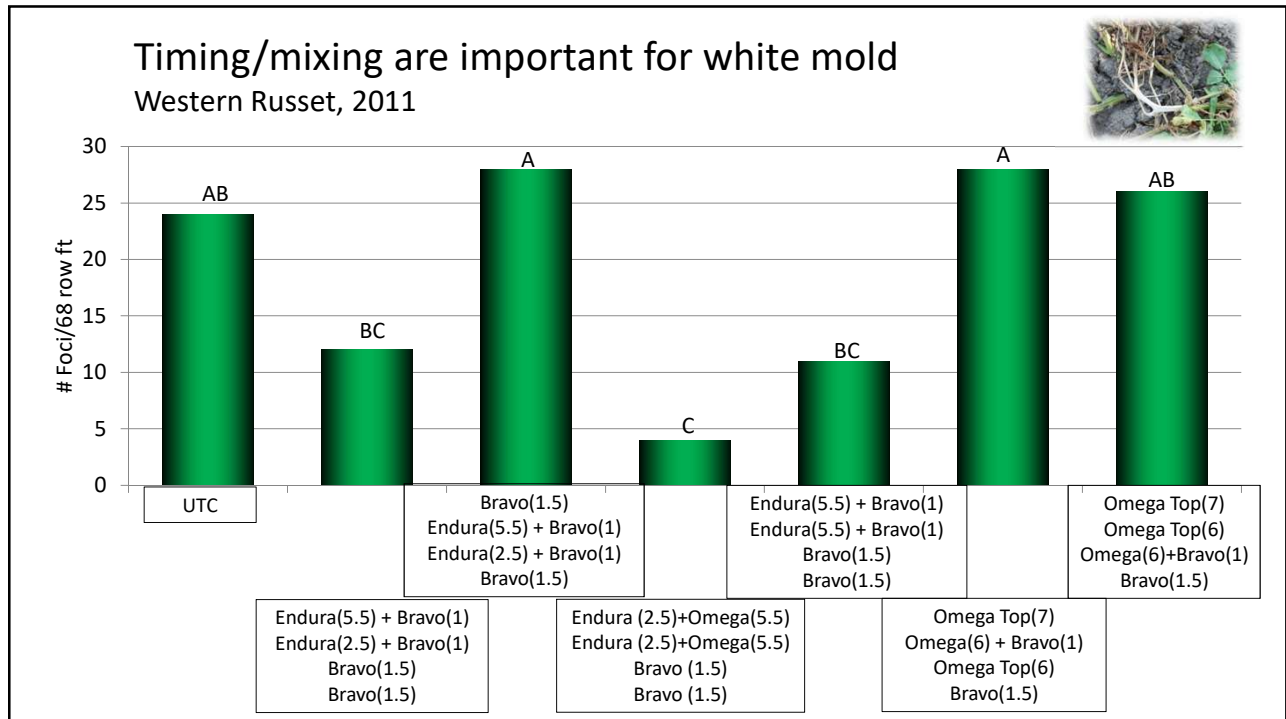
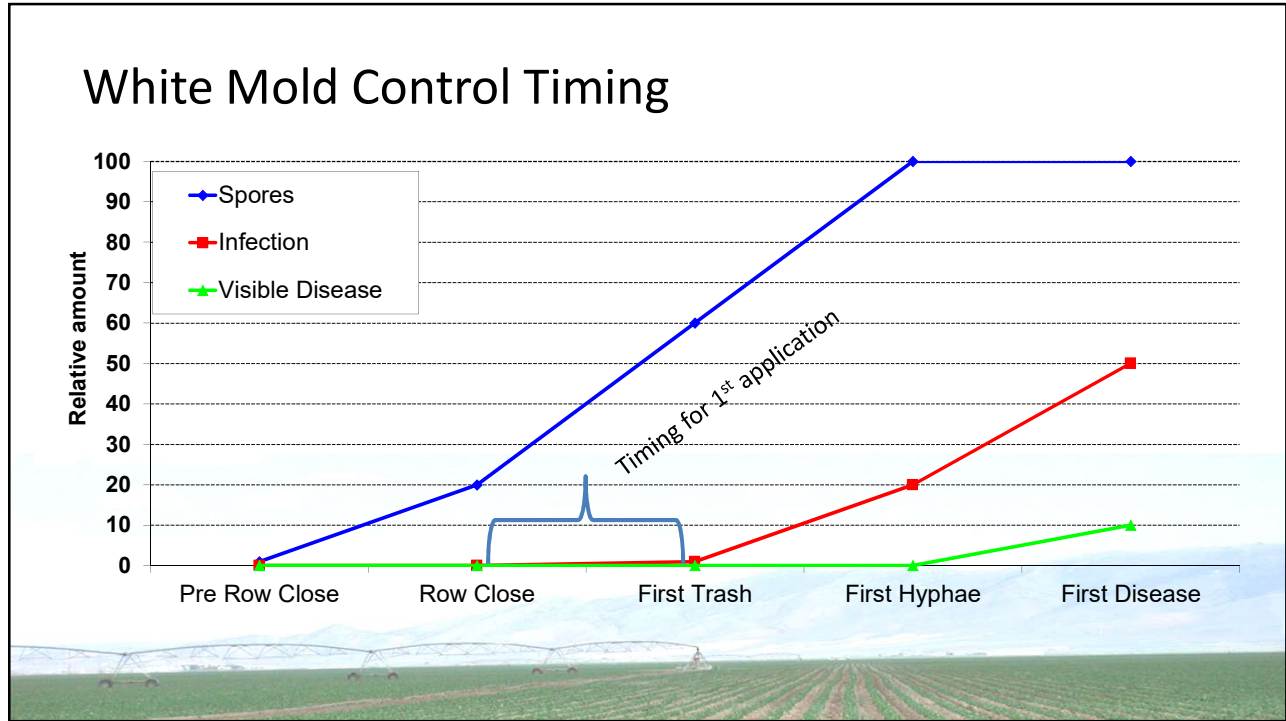
Which one is white mold?

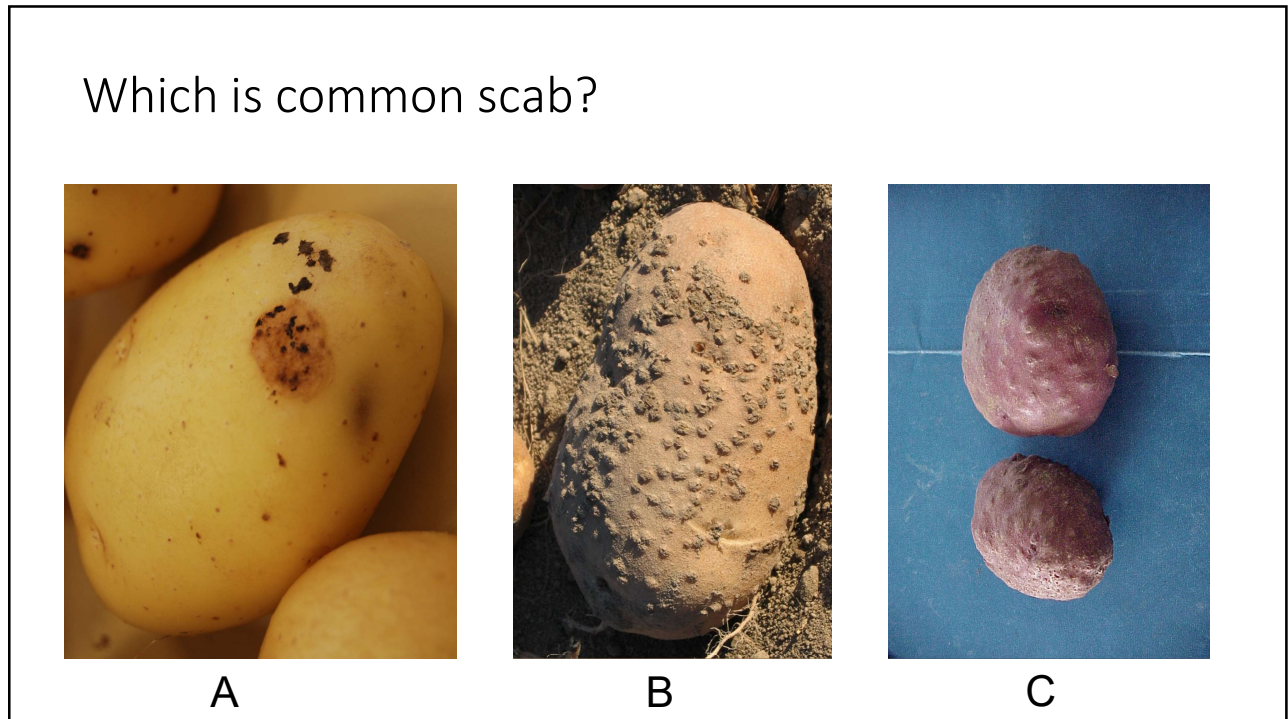
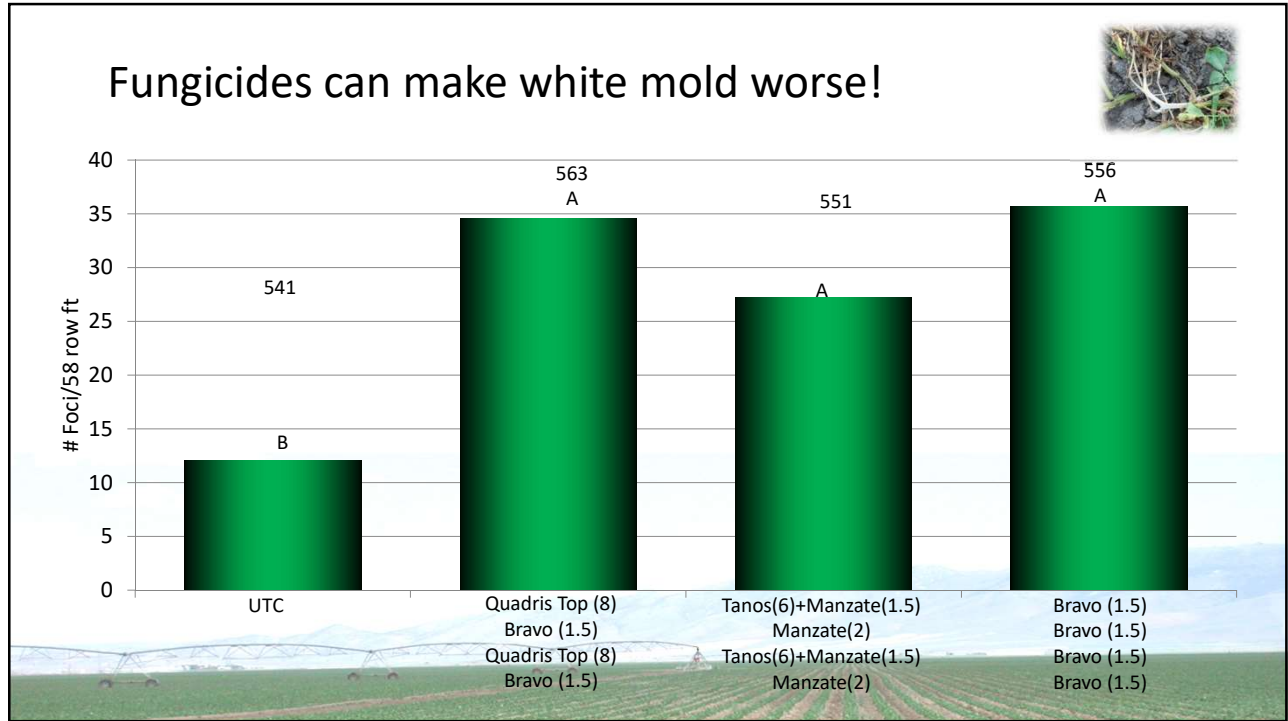
① Start presenting to display the poll results on this slide.



	A	B	C
Disease	White mold	Rhizoctonia solani	Gray mold
Fungicides	***	(Yes)	**
-- ST	No	Yes	No
-- IF	Velum	Several	No
-- Foliar	Endura, Luna, Omega, Miravis Prime	No	Pyrimethanil, others(?)







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Which one is common scab?

① Start presenting to display the poll results on this slide.

	A	B	C
Disease	Common scab	Powdery scab	Root knot nematode
Fungicides	Chloropicrin fumigation	No	Nematicides
-- ST	No	No	No
-- IF	Blocker	No	Fluopyram
-- Foliar	No	No	No



Which is Fusarium dry rot?



A



B



C

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Which one is Fusarium dry rot?

⌚ Start presenting to display the poll results on this slide.

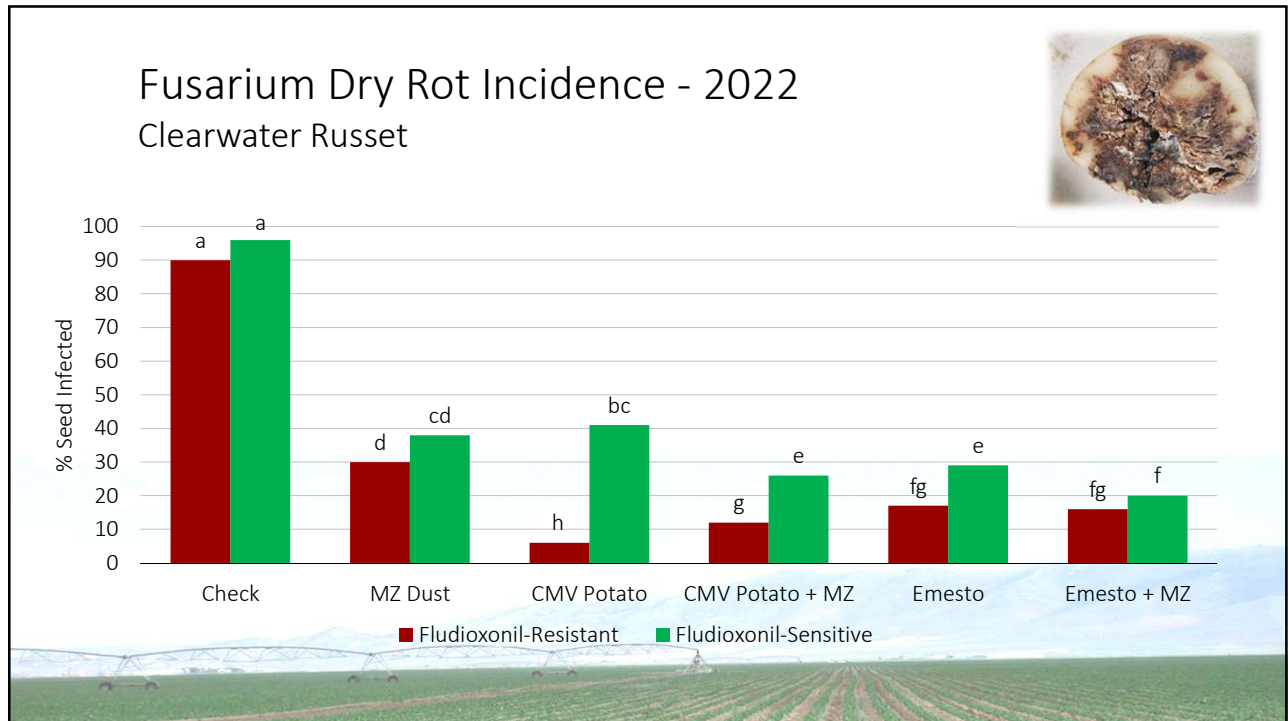
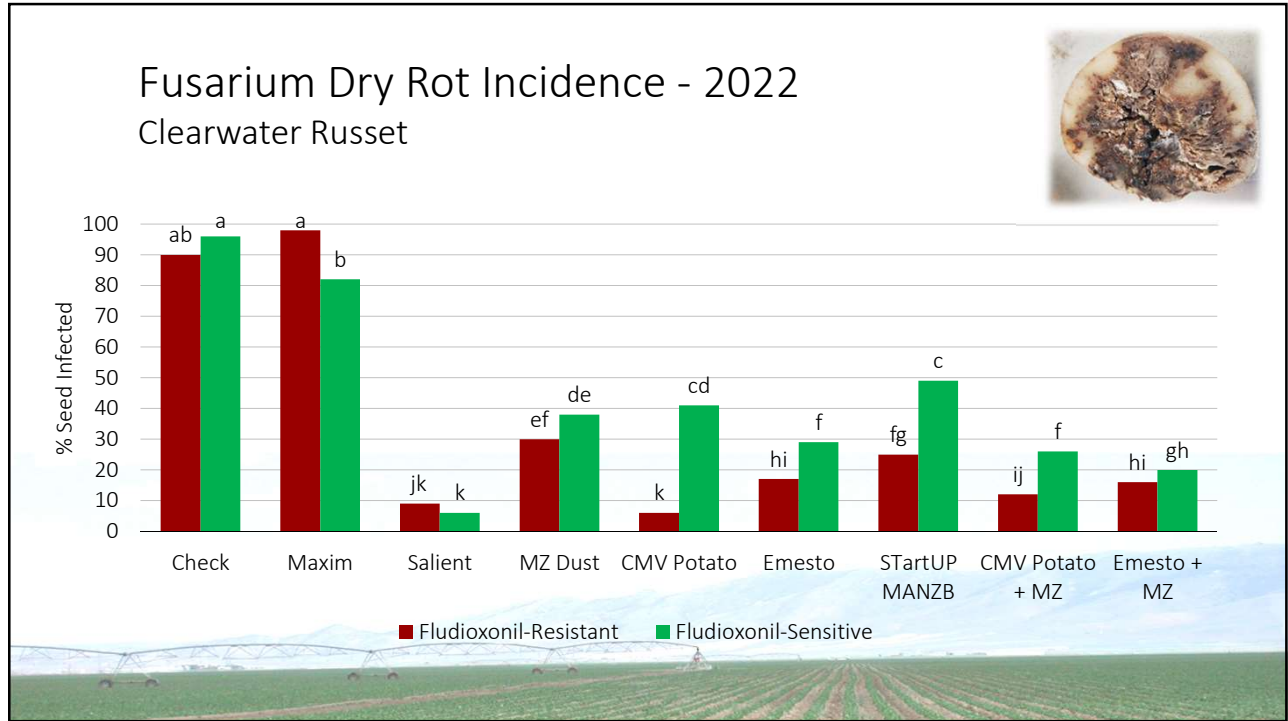


	A	B	C
Disease	Blackheart	Early blight	Fusarium dry rot
Fungicides	No	(No)	***
-- ST	No	No	Several
-- IF	No	No	No
-- Foliar	No	No	No

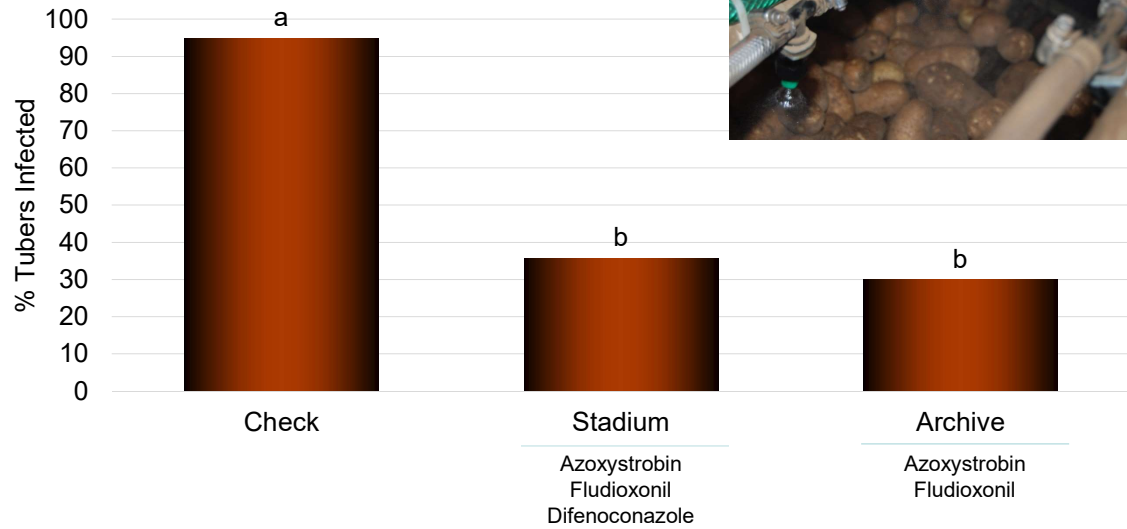
More common in sandy soils than silt loam.

Selected Seed Treatment Options				Weak on Dry Rot		Resistance Concerns	
Product	Form	M3	3	7	11	12	40
MZ Dust	Dust	X					
STartUP MANZB	Liquid	X					
Maxim 4 FS	Liquid					X	
Maxim MZ	Dust	X				X	
Moncoat MZ	Dust	X		X			
CruiserMaxx Potato	Liquid					X	
Spirato	Liquid					X	
STartUP FLUDI	Liquid					X	
CruiserMaxx Potato Extreme	Liquid		X			X	
CruiserMaxx Potato Vibrance	Liquid		X	X		X	
Emesto Silver	Liquid		X	X			
Salient	Liquid		X				
Vibrance Ultra Potato	Liquid		X	X			X
Reason 500 SC	Liquid				X		

Selected Seed Treatment Options					
Product	Form	Fus. Dry Rot	Rhizoctonia	Silver Scurf	Late Blight
MZ Dust	Dust	MZ			MZ
STartUP MANZB	Liquid	MZ			MZ
Maxim 4 FS	Liquid	fludi	fludi	fludi	
Maxim MZ	Dust	fludi + MZ	fludi	fludi	
Moncoat MZ	Dust	MZ	flutolanil	flutolanil	
CruiserMaxx Potato	Liquid	fludi	fludi	fludi	
Spirato	Liquid	fludi	fludi	fludi	
STartUP FLUDI	Liquid	fludi	fludi	fludi	
CruiserMaxx Potato Extreme	Liquid	fludi + difen	fludi	fludi + difen	
CruiserMaxx Potato Vibrance	Liquid	fludi + difen	fludi + sed	fludi + difen	
Emesto Silver	Liquid	proth	penflufen	pen + proth	
Salient	Liquid	difen		difen	
Vibrance Ultra Potato	Liquid	difen	sed	difen	mandi
Reason 500 SC	Liquid				fenamidone



Dry Rot Incidence in Clearwater Post-Harvest Fungicides



Which is Potato Mop Top Virus (PMTV)?



A



B



C

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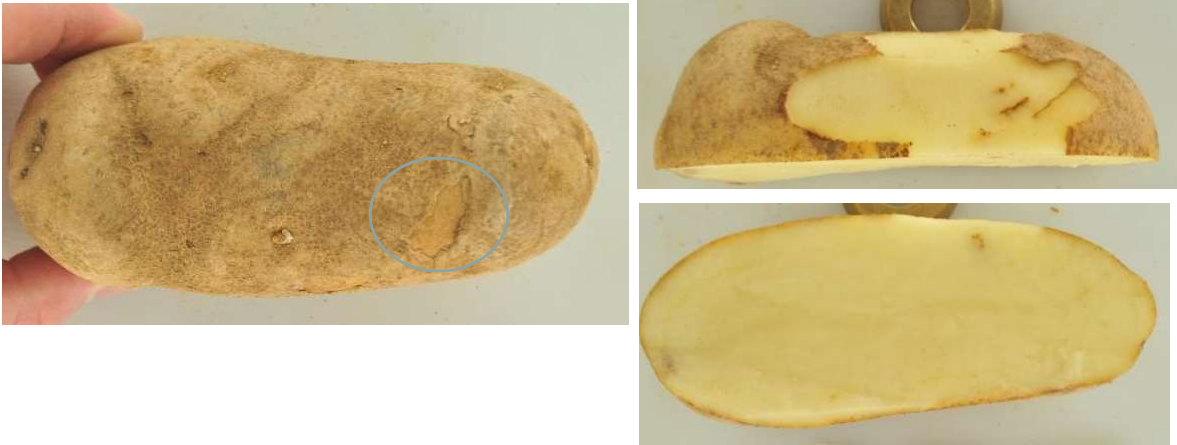
Which one is Potato Mop Top Virus?

① Start presenting to display the poll results on this slide.

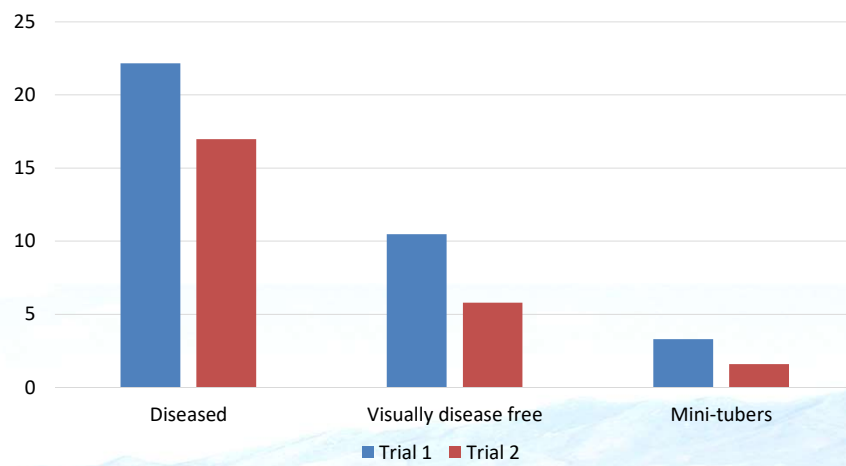


	A	B	C
Disease	Corky ringspot (TRV)	Heat necrosis	PMTV
Fungicides	(Vydate)	No	No
-- ST	No	No	No
-- IF	No	No	No
-- Foliar	No	No	No

PMTV Positive

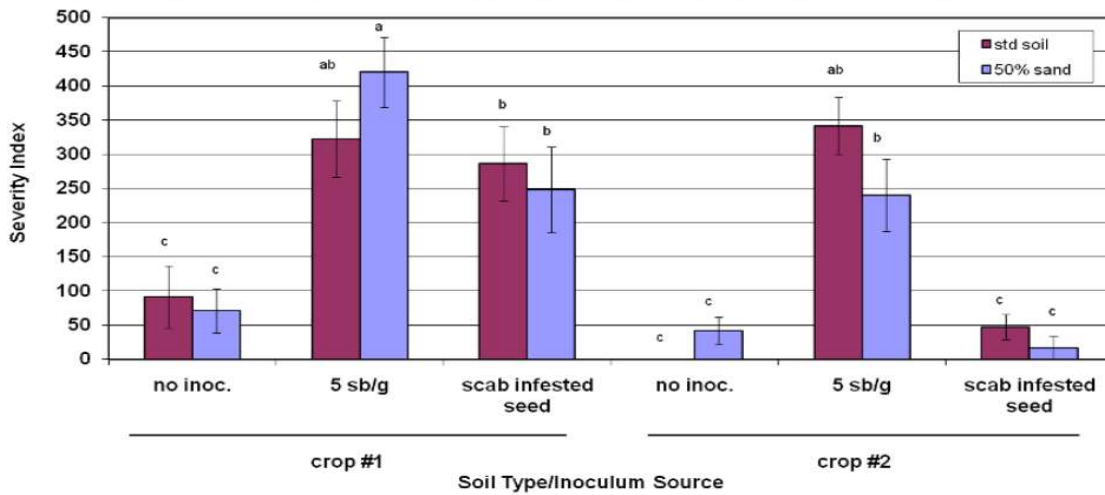


Effect of Seed on Powdery Scab



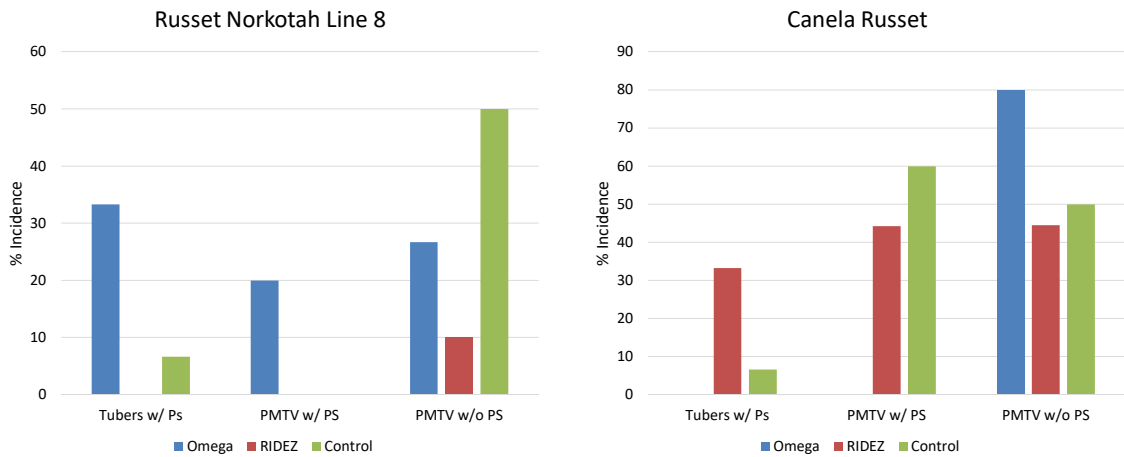
Tegg et al., 2016, AJPR 93:231-238

Effect of Seed/Soil Inoculum on Powdery Scab



Dr. Rob Davidson, Practical Management of Powdery Scab, Focus on Potato

Effect of Chemical Treatment on Scab and PMTV



Zeng et al., 2020, Plant Disease 104:2807-2816

Powdery Scab/PMTV

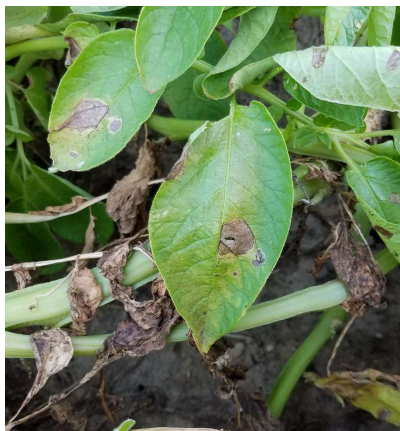
- Seed and soil can be the source
- Fungicides are not economically effective
- Russet cultivars generally more resistant varieties to tuber lesions
 - Use of a soil test?
- Link between PS symptoms and PMTV symptoms not solid
- Keeping soil dry at tuber initiation recommended, but likely won't help



Which is early blight?



A



B



C

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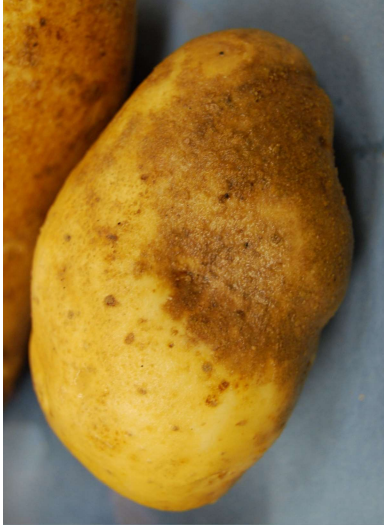
Which one is early blight?

⌚ Start presenting to display the poll results on this slide.



	A	B	C
Disease	Gray mold	Early blight	Brown spot
Fungicides	**	***	***
-- ST	No	No	No
-- IF	No	Fluopyram	Fluopyram
-- Foliar	Pyrimethanil, others(?)	Several	Several

Which is black dot?



A



B



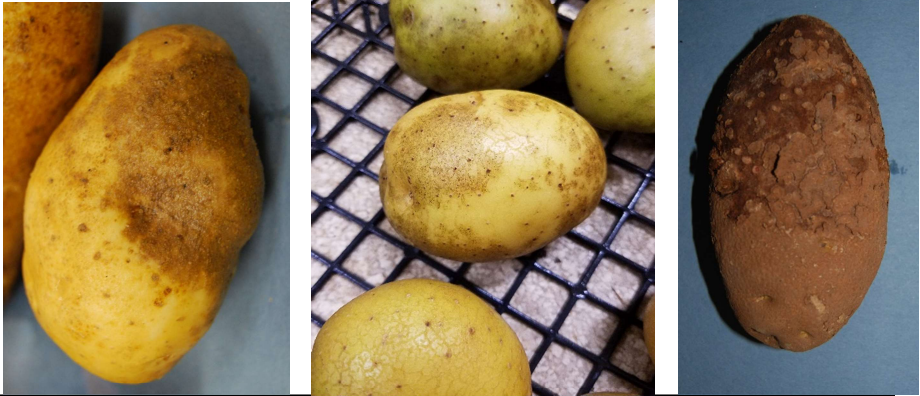
C

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Which is black dot?

① Start presenting to display the poll results on this slide.




	A	B	C
Disease	Silver scurf	Black dot	Periderm disorder (Pink eye)
Fungicides	***	?	No
-- ST	Yes	No?	No
-- IF	Yes	No	No
-- Foliar	No	?	No

Silver Scurf vs. Black Dot



Helminthosporium solani conidia



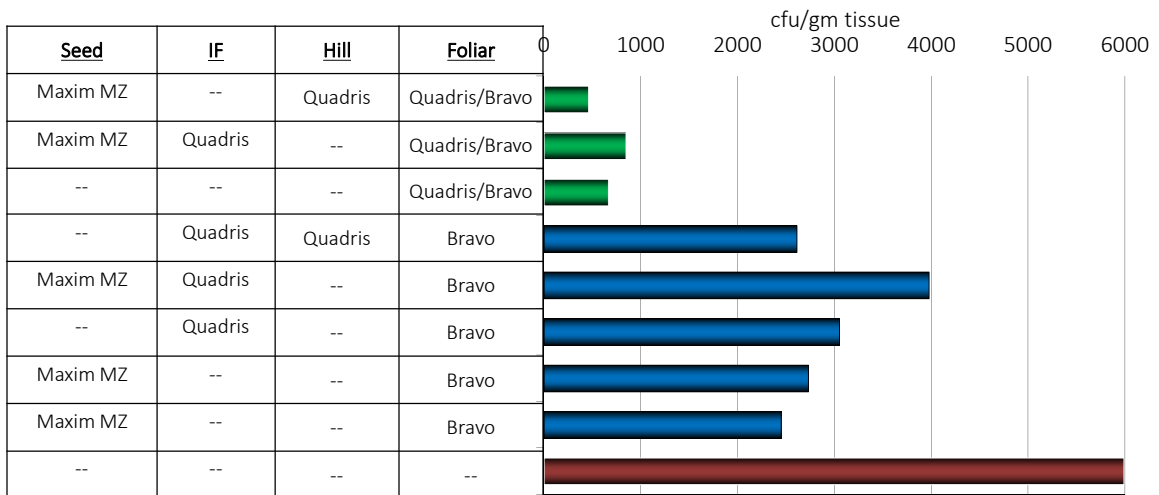
Colletotrichum coccodes sclerotia





Effect of Fungicides on *C. coccodes* stem colonization

Russet Burbank



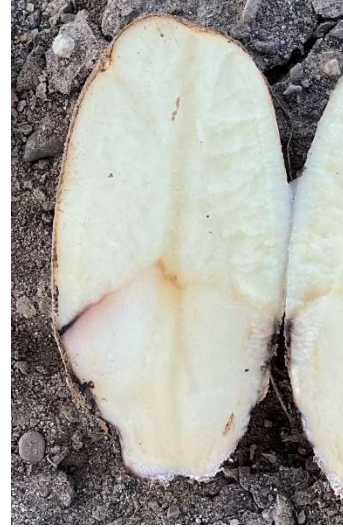
Which is pink rot?



A



B



C

slido



Which one is pink rot?

① Start presenting to display the poll results on this slide.

	A	B	C
Disease	Bacterial soft rot	Pythium leak	Pink rot
Fungicides	No	**	***
-- ST	No	No	No
-- IF	No	Mefenoxam, OXTP?	Mefenoxam, OXTP
-- Foliar	No	Mefenoxam(?)	Mefenoxam, Phos acid

Pythium Leak vs. Pink Rot

Pythium Leak

Pink Rot

Bacterial Soft Rot

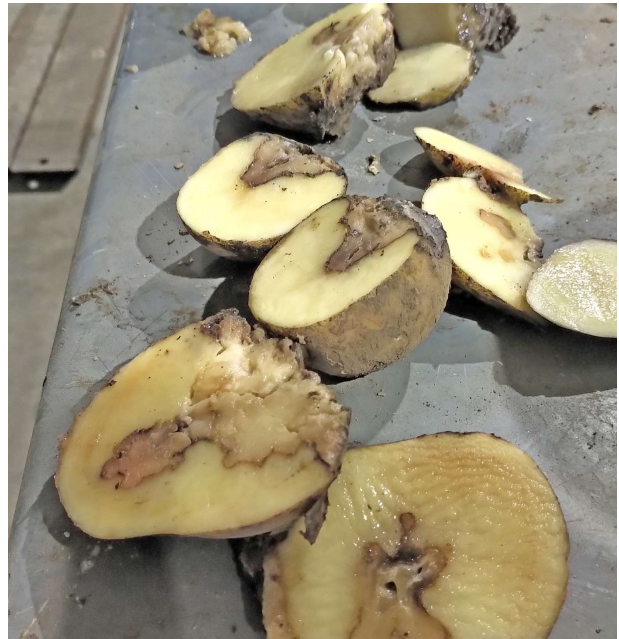
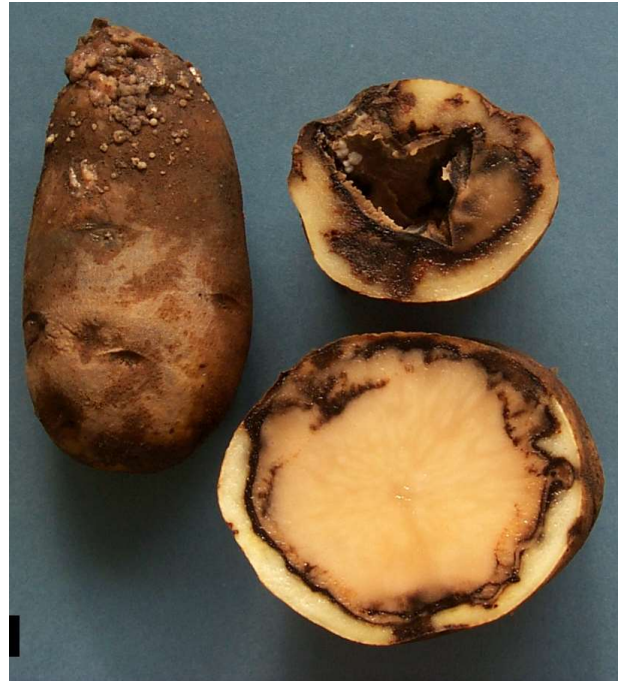
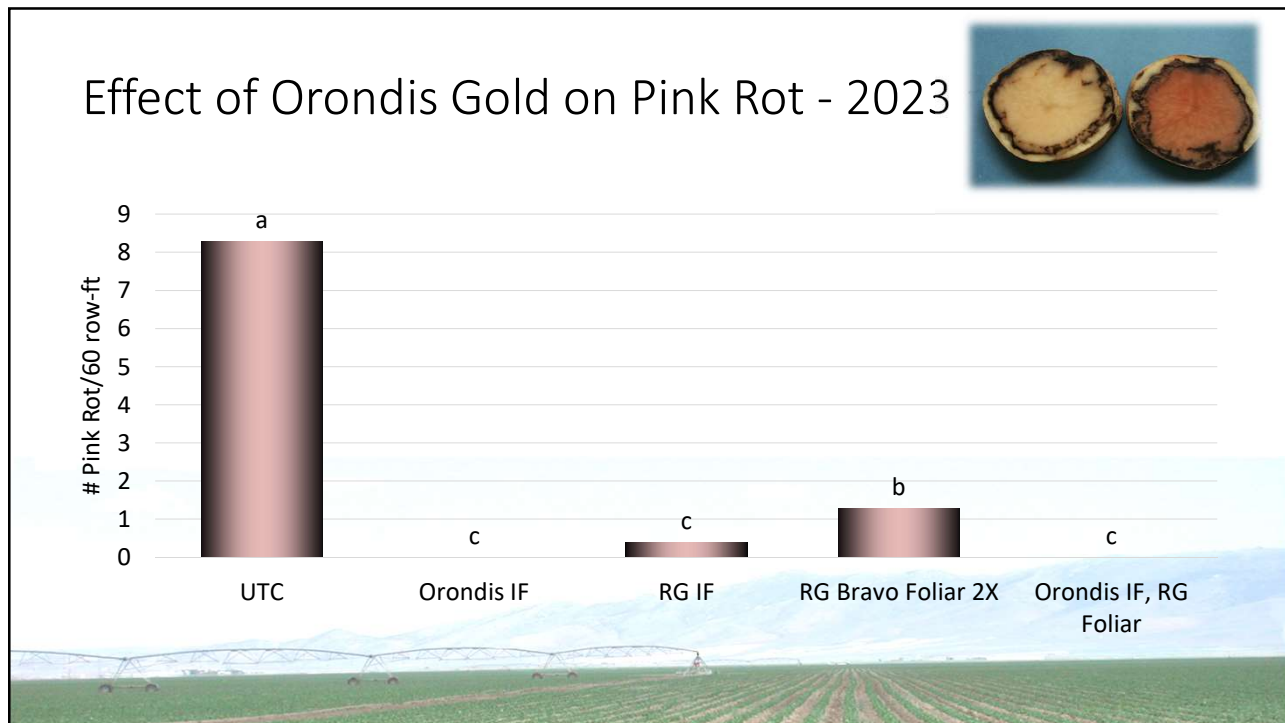
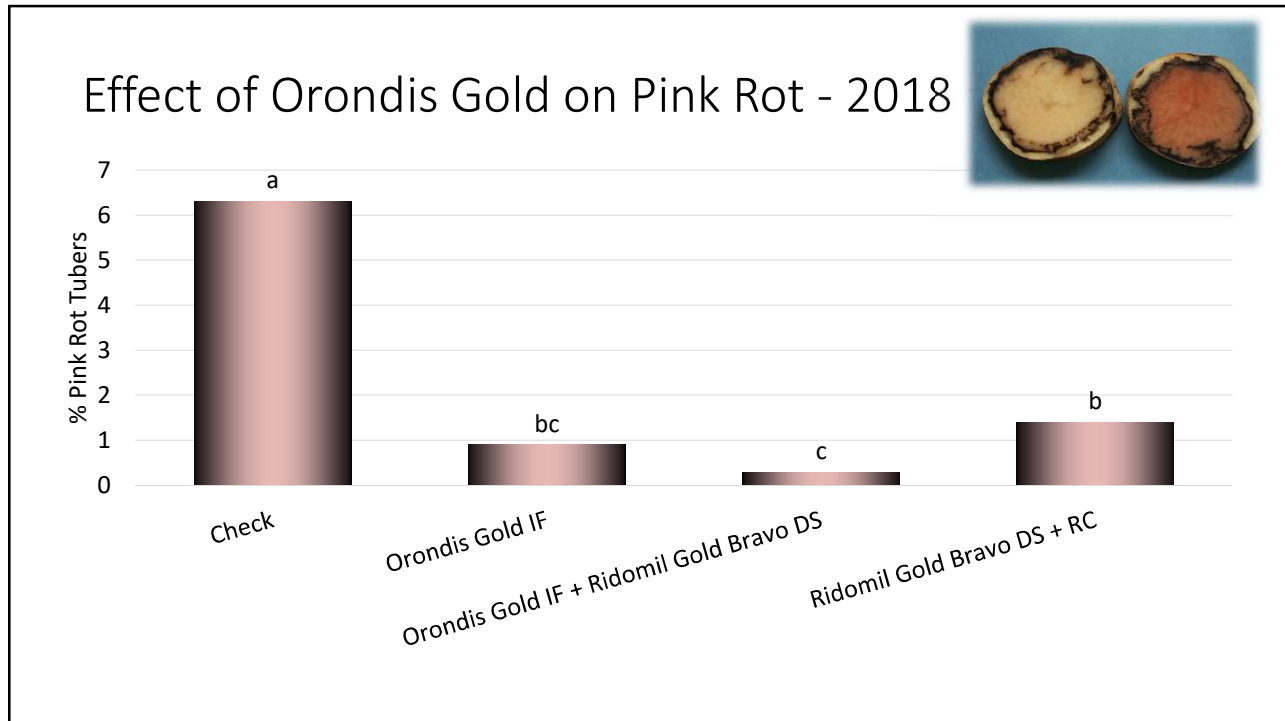


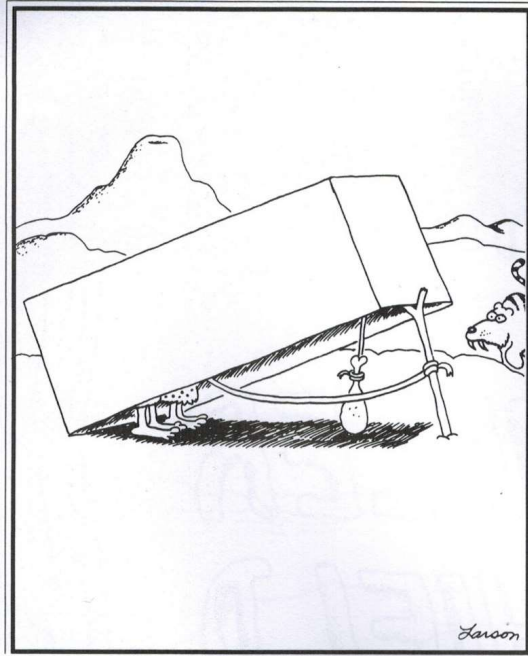
Photo courtesy Eugenia Banks

Pink Rot





Questions?



"Shhhh, Zog! ... Here come one now!"