

Welcome to the 2022 Miller Research Potato Pest Management Seminar



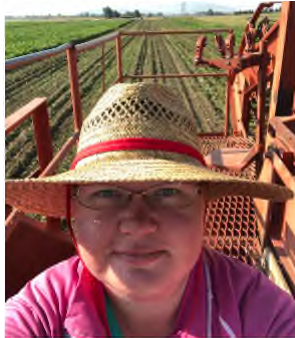
Thank You!



Dr. Nora Olsen and the University of Idaho Potato Storage Research Team



The 2021 Miller Research Team



Links to handouts and recordings

MILLERRESEARCH

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EXPERTS IN AGRICULTURAL RESEARCH

Miller Research LLC is dedicated to providing scientific research for the improvement of crop production. Miller Research is operated by Jeff Miller, Trent Taysom, Scott Andersoh and Cheryn Suarez.

USE THE MILLER RESEARCH POTATO DISEASE REFERENCE GALLERY [VIEW GALLERY >](#)

RESEARCH CAPABILITIES

We conduct residue and efficacy research on pesticides for commercial chemical companies. In addition, we perform contract research for agricultural productions groups such as the Idaho Potato Commission and the Snake River Sugar Association.

On occasion we work with growers and/or private companies to investigate crop damage incidents. We have served as expert witnesses in litigation and insurance claim dispute

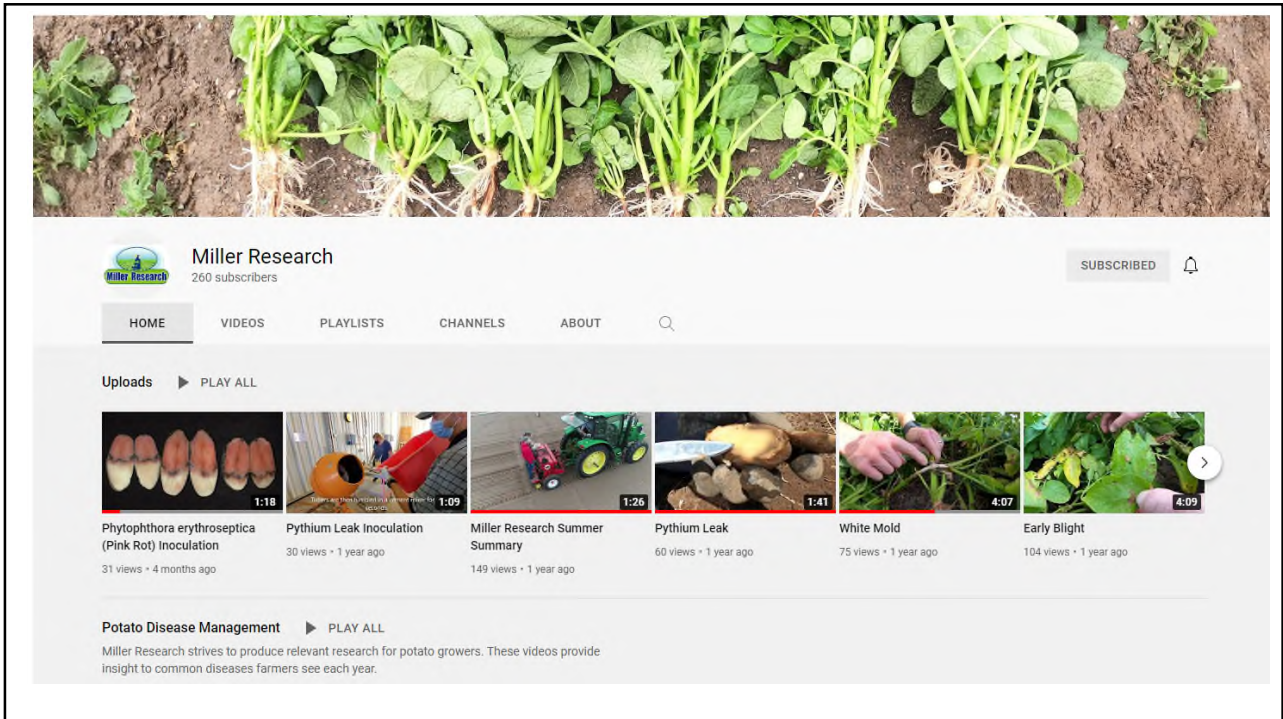
LATEST POSTS



2022 Idaho Potato Conference Presentations

The 2022 Idaho Potato Conference was held January 19-20 at the Pond Student Union Building in Pocatello, ID. Miller Research was involved in six presentations related to disease management. Handouts from those presentations can be found here. Managing Fusarium Dry Rot...

[Read More](#)



The image shows a screenshot of the Miller Research YouTube channel page. At the top is a banner image of potato plants in a field. Below the banner is the channel name "Miller Research" with a logo and "260 subscribers". There are navigation tabs for "HOME", "VIDEOS", "PLAYLISTS", "CHANNELS", and "ABOUT". A "SUBSCRIBED" button and a notification bell are on the right. The "Uploads" section is active, showing a "PLAY ALL" button and a row of video thumbnails. The thumbnails are: "Phytophthora erythroseptica (Pink Rot) Inoculation" (1:18, 31 views), "Pythium Leak Inoculation" (1:09, 30 views), "Miller Research Summer Summary" (1:26, 149 views), "Pythium Leak" (1:41, 60 views), "White Mold" (4:07, 75 views), and "Early Blight" (4:09, 104 views). Below the thumbnails is a "Potato Disease Management" section with a "PLAY ALL" button and a description: "Miller Research strives to produce relevant research for potato growers. These videos provide insight to common diseases farmers see each year."





Field Conditions

% Sand: 80	% OM: 0.91	Texture: Loamy sand
% Silt: 13	pH: 7.1	Soil Name: Tindahay
% Clay: 7	CEC: 8.0	

Salts (mmhos/cm)	0.4	Organic N (lb/acre)	35	Calcium (meq/100 g)	4.9
Chlorides (ppm)	7	Ammonium-N (ppm)	4.9	Magnesium (meq/100g)	1.8
Sodium (meq/100g)	0.20	Nitrate-N (ppm)	6	Zinc (ppm)	3.0
Excess Lime (%)	0.0	Phosphorus (ppm)	24	Iron (ppm)	17.2
		Potassium (ppm)	150	Manganese (ppm)	2.2
		Sulfate-S (ppm)	7	Copper (ppm)	0.9
				Boron (ppm)	0.31



Fertility Program

Date	Fertilizer	Composition	Rate/acre	Method	Units Applied
At planting	Ammonium phosphate	11-37-0	22.5 gal	Planter/In-row	30 N, 100 P ₂ O ₅
	Boron 10%	0-0-0-10 B	1.0 gal		1.1 B
	Zinc Ultra-Che 9% EDTA	0-0-0-10 Zn	1.0 gal		1.1 Zn
03 May	Urea	46-0-0	184 lb	Tyler air cart	85 N
	MAP	11-52-0	97 lb		10 N, 50 P ₂ O ₅
	Muriate of Potash (KCl)	0-0-60	167 lb		100 K ₂ O
	Sulfate of Potash (K ₂ SO ₄)	0-0-50-17 S	250 lb		125 K ₂ O, 43 S, 1 Mg
	Manganese Sulfate	0-0-0-15 S-32 Mn	16 lb		2 S, 5 Mn
04 Jun – 03 Aug	UAN	32-0-0	1.84 - 5.66 gal	Fertigation (17)	6.5 – 20.0 N per application 275 total N

N	400	Zn	1.1
P ₂ O ₅	150	B	1.1
K ₂ O	225	Mg	1.0
S	45	Mn	5.0



Maintenance Program

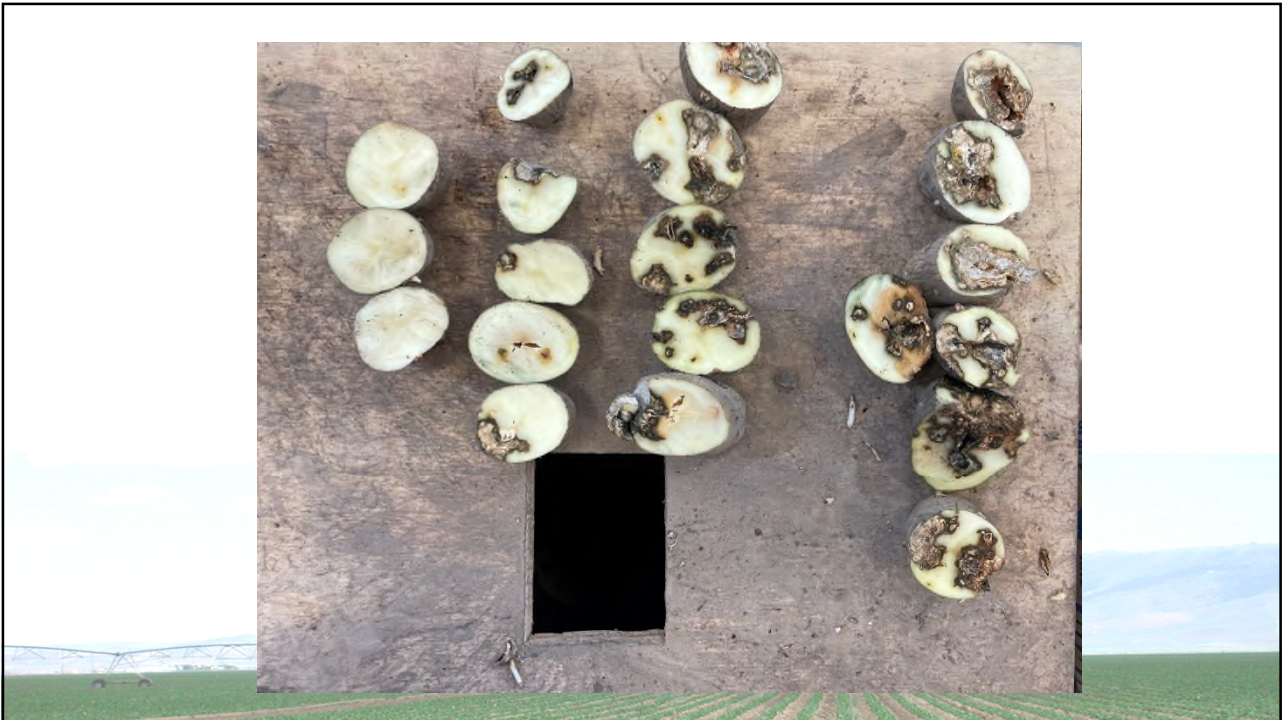
Date	Product	Rate/Acre	Target
27 Oct 21	Sectagon-42	40 gal	Verticillium
At planting	Ridomil Gold SL	6.5 fl oz	Pink rot, leak, late blight(?)
	Verimark	13.5 fl oz	Insects
05 May 22	Tricor	0.75 pt	Weeds
	Outlook	15 fl oz	
	Prowl H2O	1.5 pt	
22 Jun, + 2 weeks (7 Jul)	Luna Tranquility	11.2 fl oz	EB, WM
	Bravo WS	1.0 pt	EB, WM
+ 2 weeks (20 Jul, 4 Aug)	Bravo WS	1.5 pt	EB, WM



Seed Treatments for Fusarium Dry Rot Management

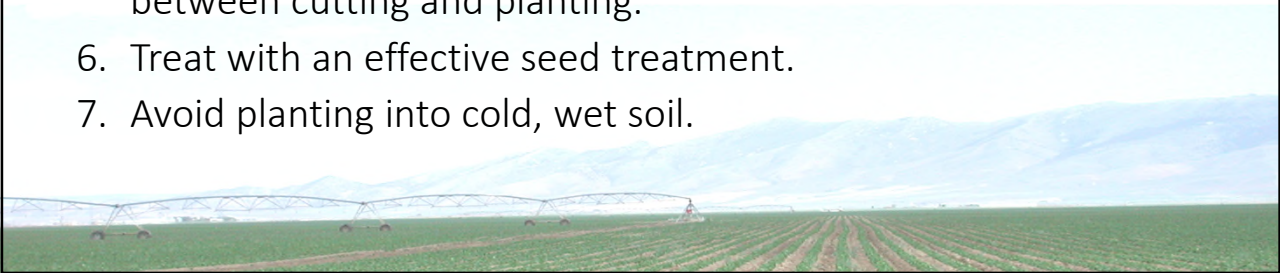


Jeff Miller



So what do I do to prevent seed piece decay?

1. Purchase seed with as little dry rot as possible.
2. Plant uncut seed, if possible.
3. Sterilize seed cutting equipment.
4. Sharpen seed cutting knives.
5. Ensure pre-cut seed is suberized properly OR reduce time between cutting and planting.
6. Treat with an effective seed treatment.
7. Avoid planting into cold, wet soil.



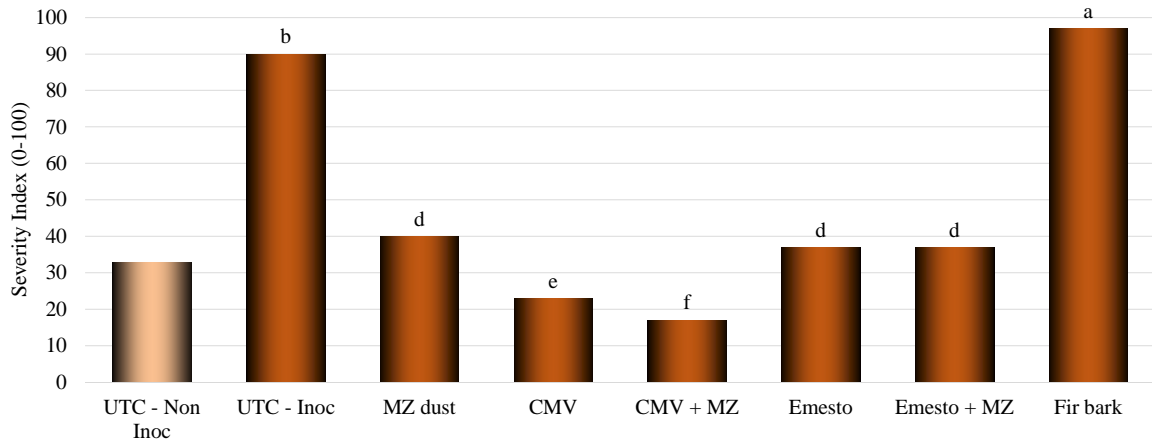
Selected Seed Treatment Options

Product	Form	M3	Group 12	Group 3	Group 7
MZ Dust	Dust	Mancozeb			
STartUP MANZB	Liquid	Mancozeb			
Maxim 4 FS	Liquid		Fludioxonil		
Maxim MZ	Dust	Mancozeb	Fludioxonil		
Moncoat MZ	Dust	Mancozeb			Flutalonil
CruiserMaxx Potato	Liquid		Fludioxonil		
Spirato	Liquid		Fludioxonil		
STartUP FLUDI	Liquid		Fludioxonil		
CruiserMaxx Potato Extreme	Liquid		Fludioxonil	Difenoconazole	
CruiserMaxx Potato Vibrance	Liquid		Fludioxonil	Difenoconazole	Sedaxane
Emesto Silver	Liquid			Prothioconazole	Penflufen
Salient	Liquid			Difenoconazole	

Fungicide resistance concerns

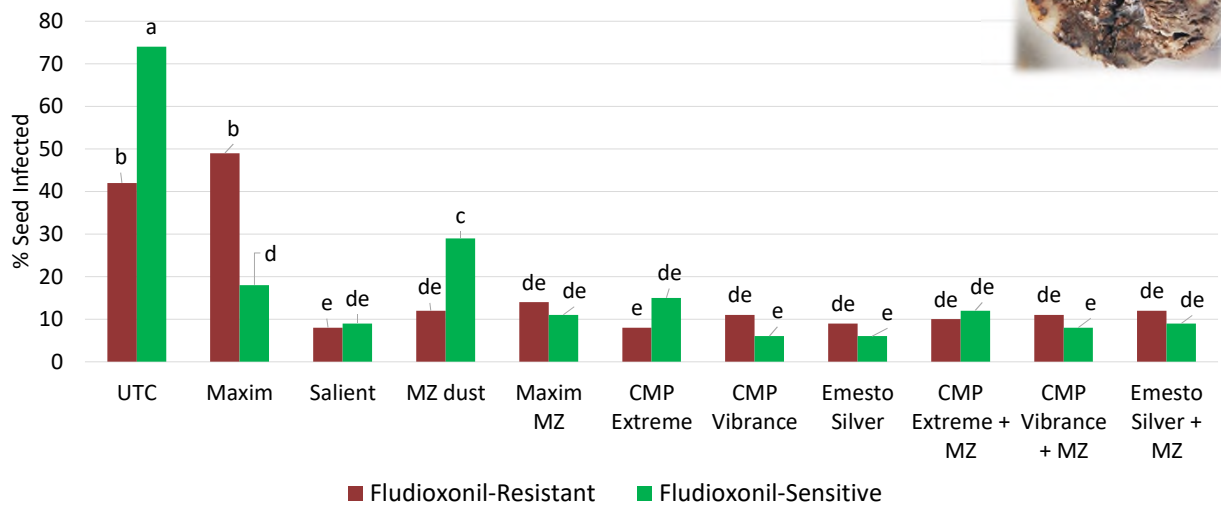
Seed Treatments for Clearwater Russet - 2020

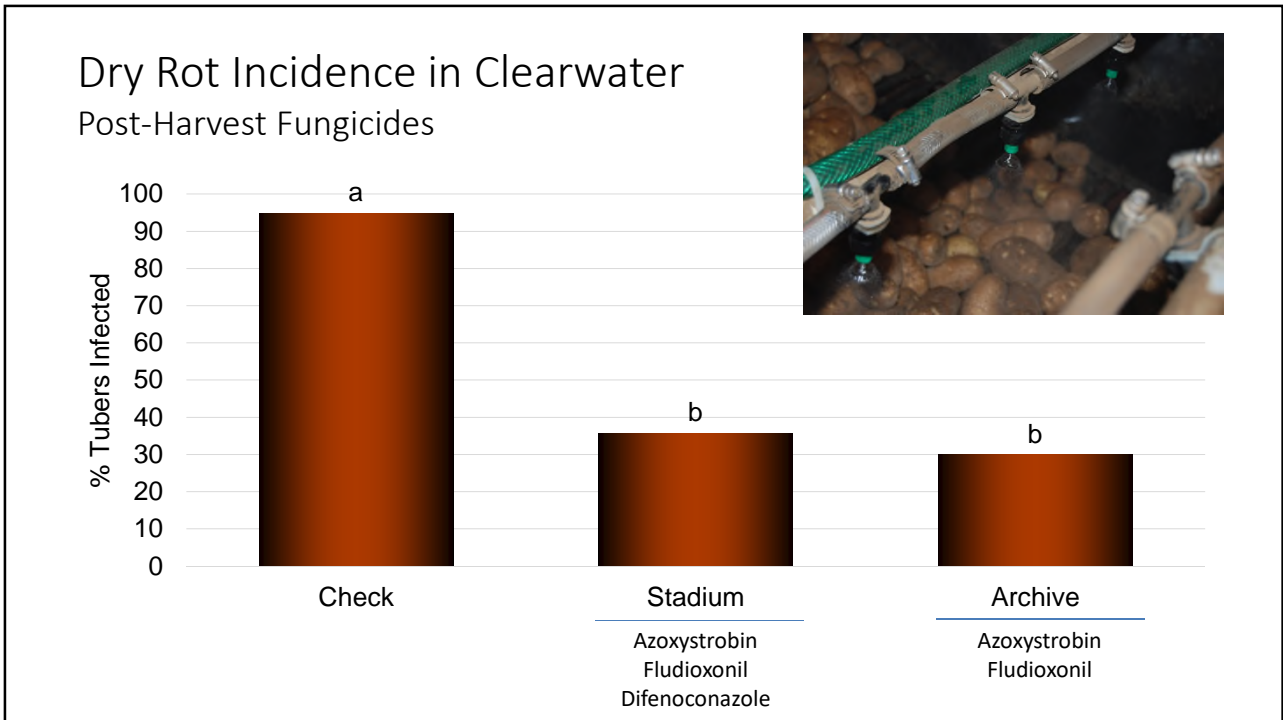
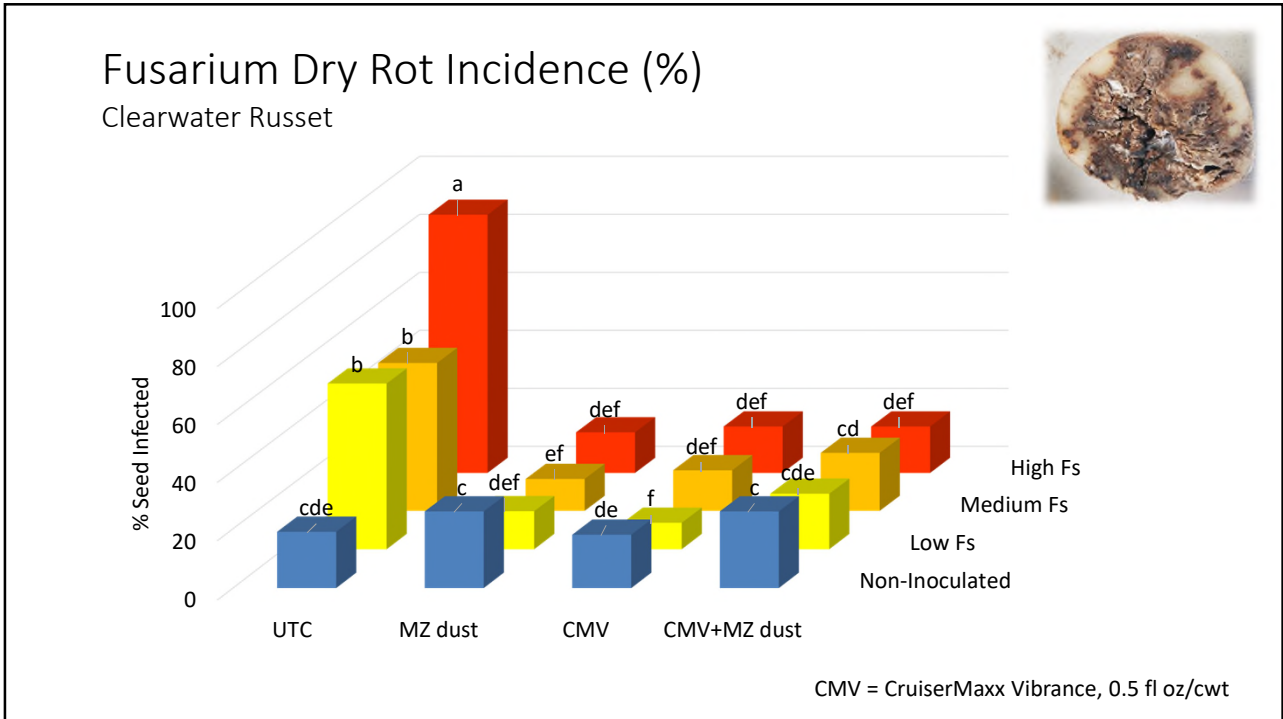
Fusarium Seed Piece Decay Severity



Seed Treatments for Clearwater Russet - 2021

Fusarium Seed Piece Decay Severity





Effect of Post-Harvest Fungicides on Dry Rot



Water treated Control



Stadium (1fl oz/ton)



Archive (1 fl oz /ton)



Take Home Message

- Liquid seed treatments are effective.
 - Use seed treatments with multiple active ingredients.
 - Resistance to fludioxonil present.
- Pathogen strength didn't affect seed treatment efficacy.
- Adding MZ to liquid helped in 2020 but didn't in 2021.
 - Good insurance policy, resistance management.

