

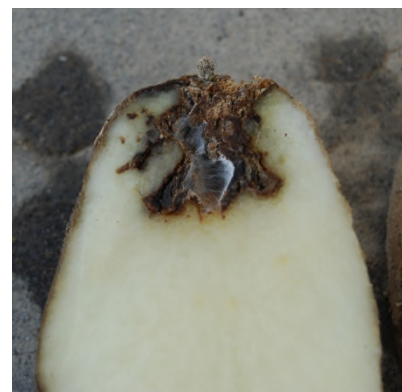
Managing Fusarium Dry Rot



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Fusarium sambucinum symptoms



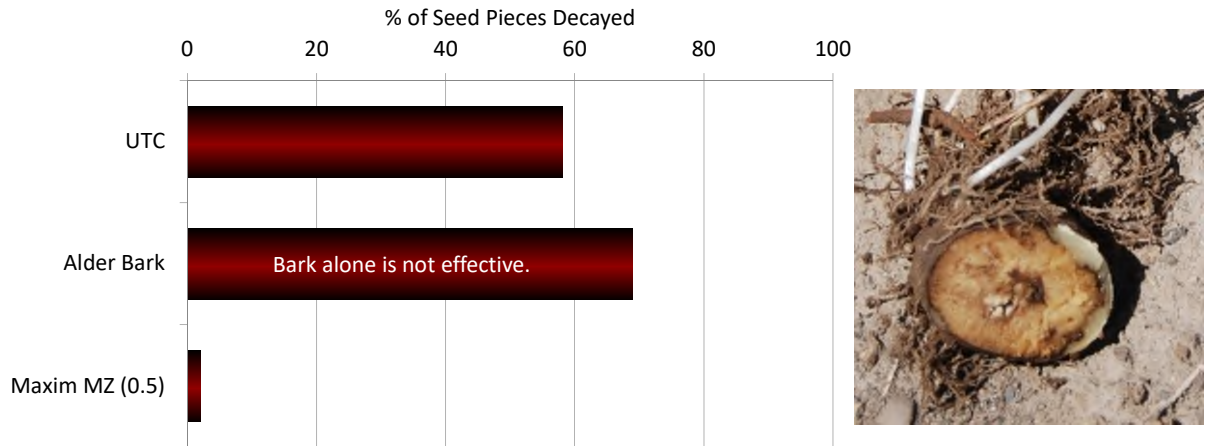
Fusarium coeruleum symptoms



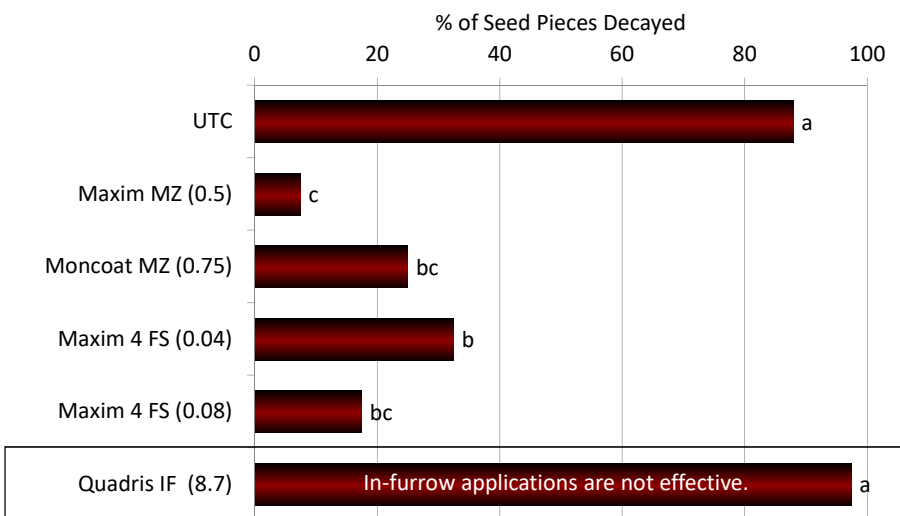
So what do I do to prevent seed piece decay?

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.

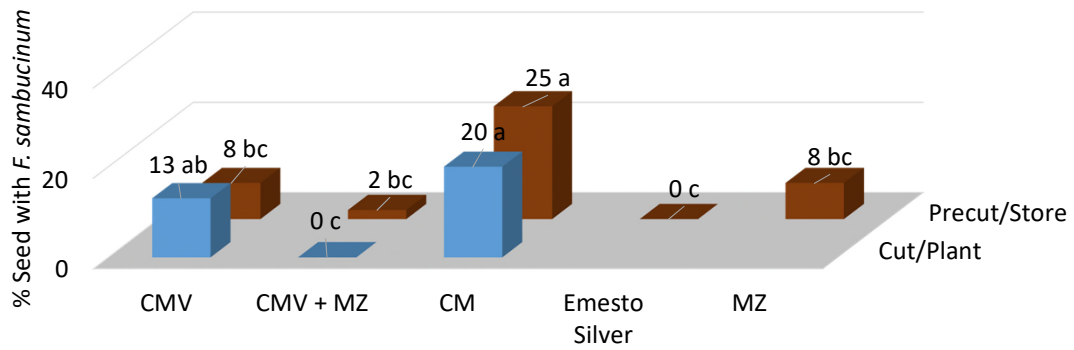
Effect of Seed Treatments on Fusarium Seed Piece Decay



Effect of Seed Treatments on Fusarium Seed Piece Decay

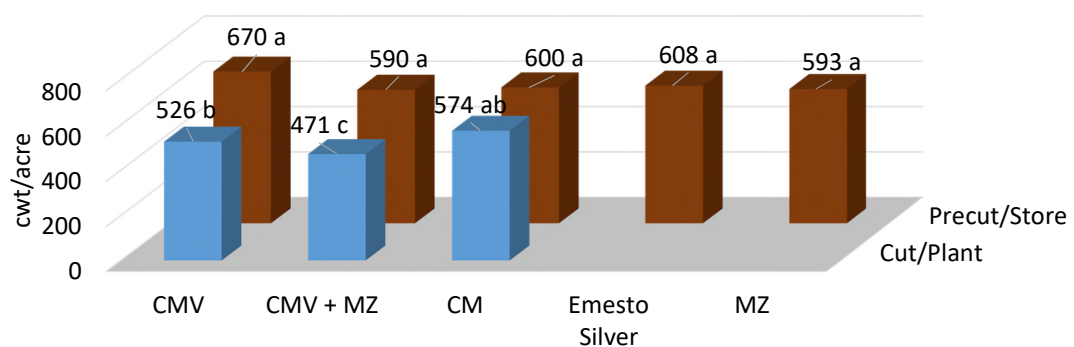


Effect of Precut vs. Cut/Plant – *F. sambucinum*



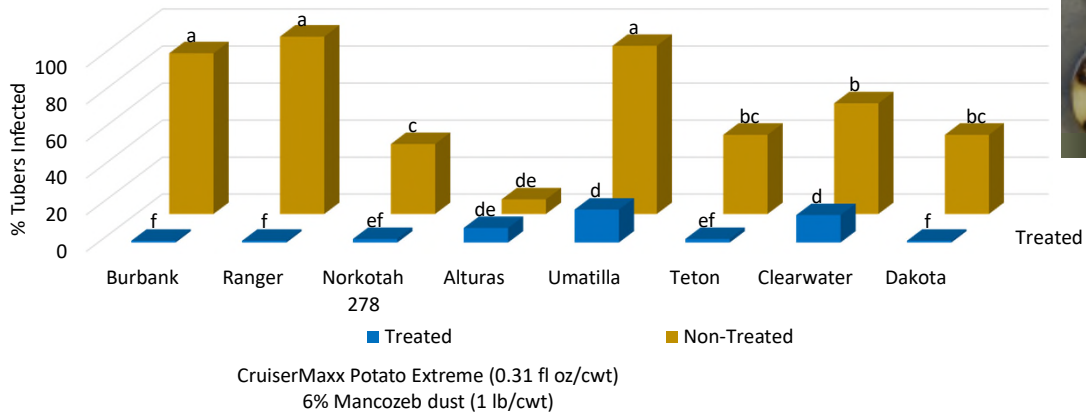
CMV = CruiserMaxx Vibrance
 CM = CruiserMaxx Potato
 MZ = Mancozeb dust

Effect of Precut vs. Cut/Plant – Marketable Yield

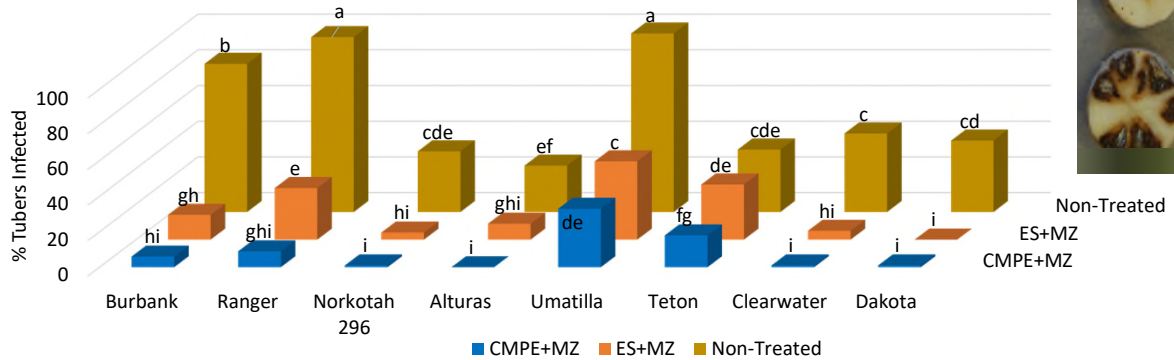


CMV = CruiserMaxx Vibrance
 CM = CruiserMaxx Potato
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Fusarium Seed Piece Decay – *F. sambucinum* Disease Incidence – Inoculated Trial – 2019

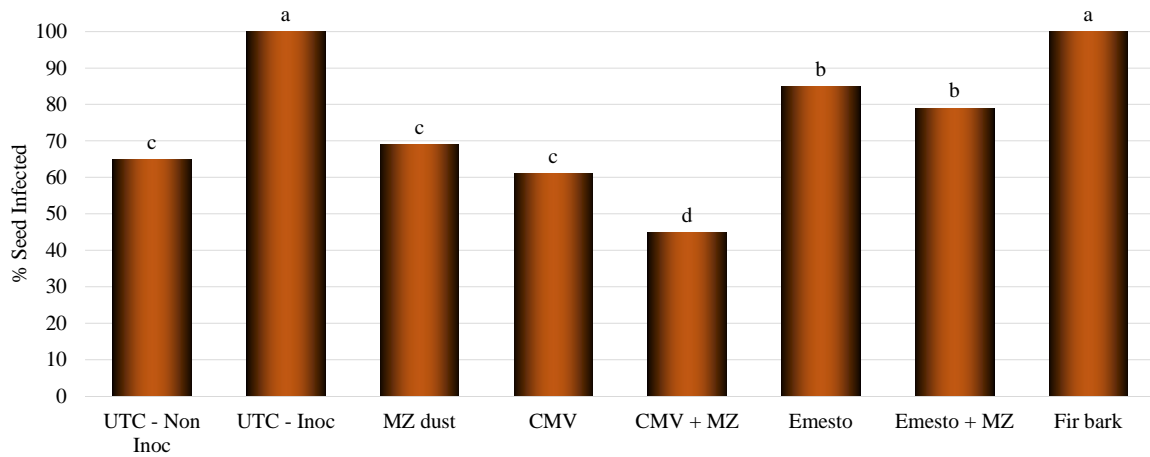


Fusarium Seed Piece Decay – *F. sambucinum* Disease Incidence – Inoculated Trial - 2020

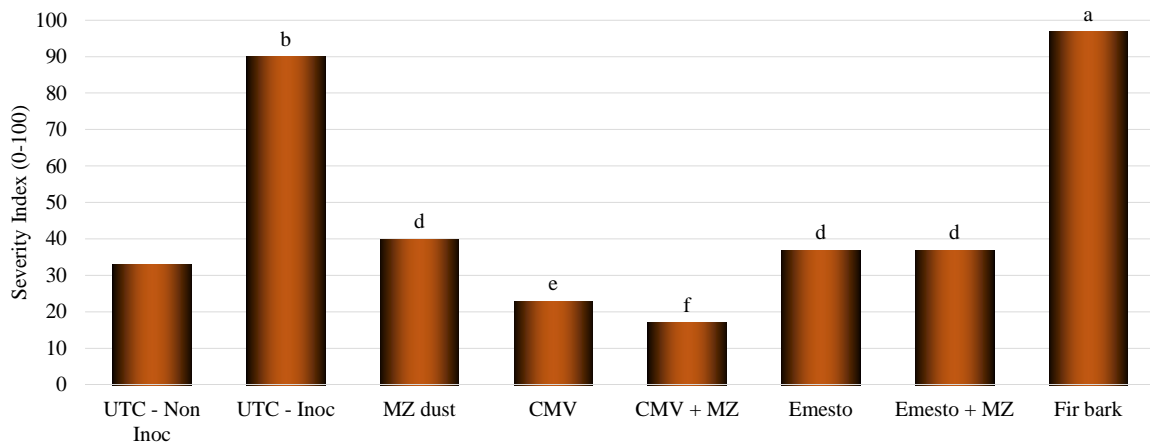


CMPE+MZ = CruiserMaxx Potato Extreme (0.31 fl oz/cwt) + 6% Mancozeb dust (1 lb/cwt)
ES+MZ = Emesto Silver (0.31 fl oz/cwt) + 6% Mancozeb dust (1 lb/cwt)

Seed Treatments for Clearwater Russet Fusarium Seed Piece Decay Incidence



Seed Treatments for Clearwater Russet Fusarium Seed Piece Decay Severity



Seed Treatments Summary – Fusarium

1. In general, seed treatment products combined with mancozeb protect best against Fusarium seed decay.
 - Rate is important!
 - **Fludioxonil fungicide resistance? (K. Duellman and C. Christian)**
2. Bark only seed treatments are not effective.
3. In-furrow fungicide applications are not effective.
4. Elimination of dust? Worker protection/safety issues.
 - Liquid seed treatments have been effective
 - Liquid MZ treatments?

Seed Treatment Options

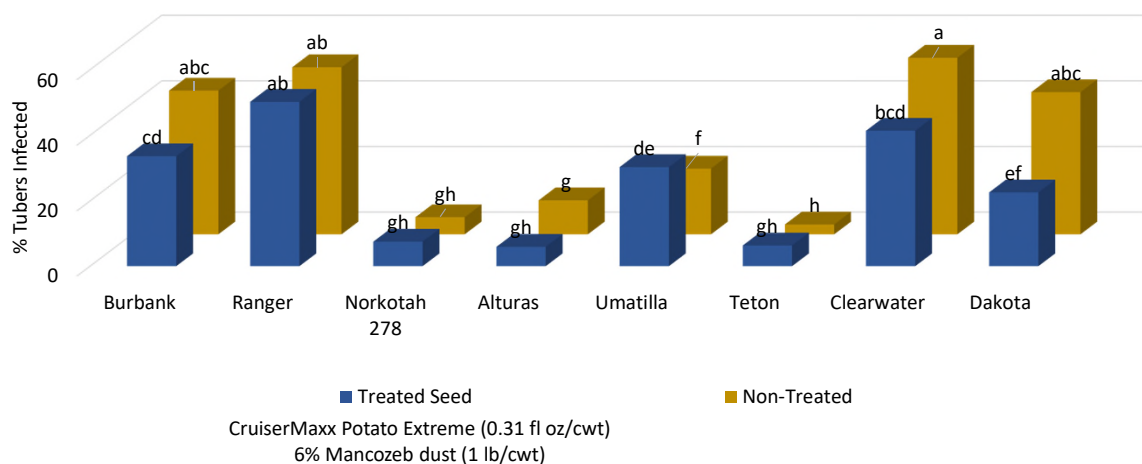
Product	Form	M3	Group 12	Group 3	Group 7
MZ Dust	Dust	Mancozeb			
STartUP MANZB	Liquid	Mancozeb			
Maxim MZ	Dust	Mancozeb	Fludioxonil		
CruiserMaxx Potato	Liquid		Fludioxonil		
Spirato	Liquid		Fludioxonil		
STartUP FLUDI	Liquid		Fludioxonil		
CruiserMaxx Potato Extreme	Liquid		Fludioxonil	Difenoconazole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

So what do I do to prevent storage dry rot?

1. Minimize wounding.
2. Avoid harvesting cooler pulp temperatures.
3. Create conditions for adequate wound healing early in storage.
4. Treat with a post-harvest fungicide.

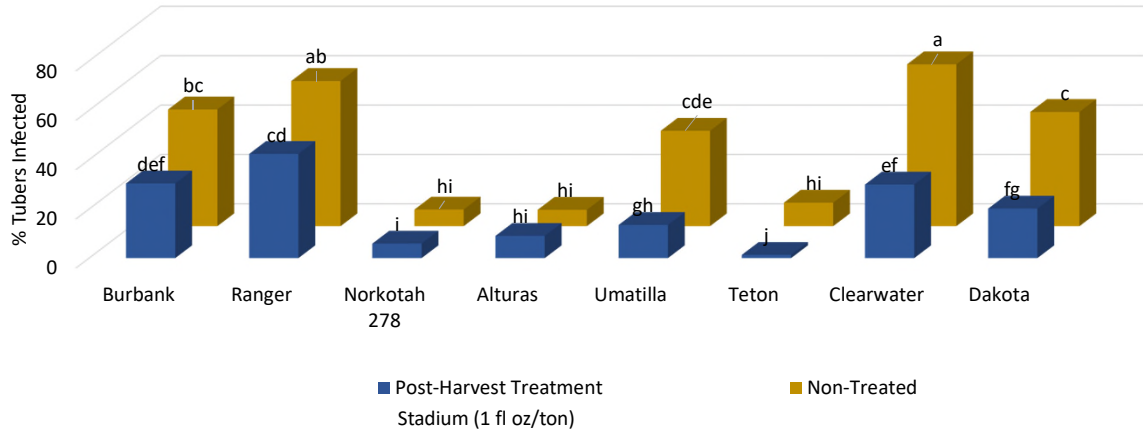
Storage Dry Rot – Seed Treatment

% Tubers with > 5% Decay

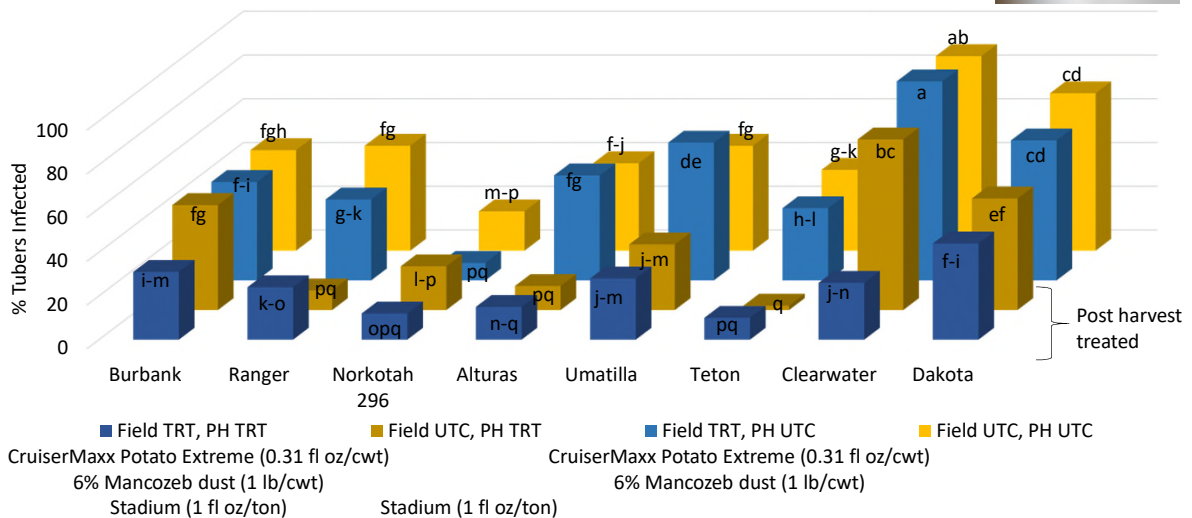


Storage Dry Rot – Post-Harvest Treatment

% Tubers with > 5% Decay



Post-Harvest Dry Rot Incidence - % Tubers with > 5% Decay



Post-Harvest Summary

- Seed treatments can reduce storage dry rot.
- Post-harvest treatment (Stadium) can reduce dry rot.
- Combining both seed treatment and post-harvest treatment can be more effective than either alone.
- Data were not always clear-cut.

References

- Peters et al., 2012. Distribution and management of fungicide-resistant *Fusarium* spp. infecting potato seed tubers in Canada. *Phytopathology* 102(7), Suppl. 4:92.
- Gachango et al., 2012. *Fusarium* spp. Causing Dry Rot of Seed Potato Tubers in Michigan and Their Sensitivity to Fungicides. *Plant Disease* 96:1767-1774.
- Miller Research reports to the Idaho Potato Commission. Available upon request.

Questions?