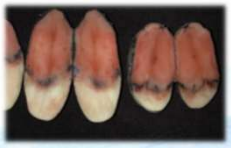
Best Management Practices for Pink Rot

Jeff Miller

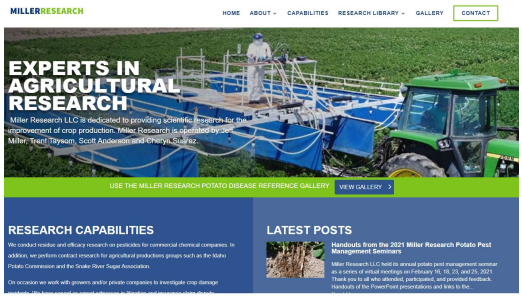


1

From "27 Farm memes ideas"

2

Links to handouts and recordings



3

Pythium Leak vs. Pink Rot

Pythium Leak

Pink Rot

4

Pythium Leak vs. Pink Rot

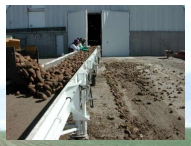
Pythium Leak

Pink Rot

5

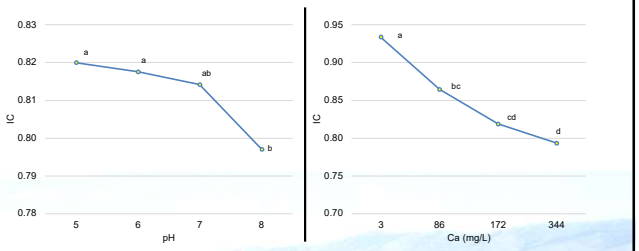
Pink Rot Management

1. Field selection/crop rotation
2. Adjust soil pH by lime application in low pH soils
3. Plant less susceptible varieties
4. Proper irrigation management
5. Use appropriate fungicides
6. Avoid disease-favorable conditions at harvest
7. Apply post-harvest fungicides
8. Grade out infected tubers going into storage
9. Reduce tuber pulp temperatures to 55°F or lower



6

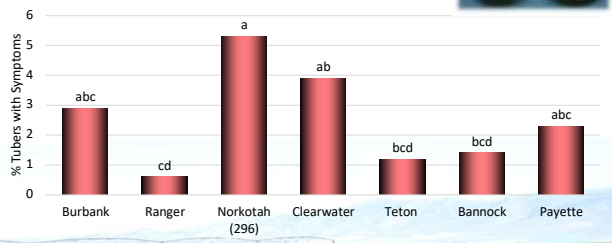
Effect of pH and Ca on Pink Rot



From Benson et al., 2009, Am. J. Potato Res. 86:472-475 and Benson et al., 2009, Am. J. Potato Res. 86:466-471

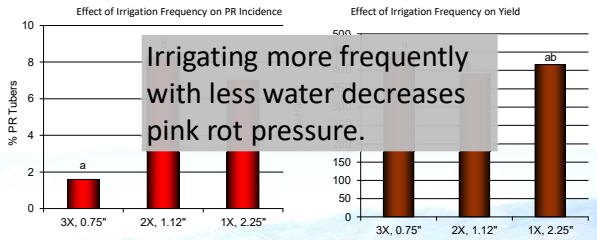
7

Cultivar Susceptibility



8

Effect of Irrigation Management



Irrigating more frequently with less water decreases pink rot pressure.

Test conducted 2010 in Minidoka, ID with natural infection.

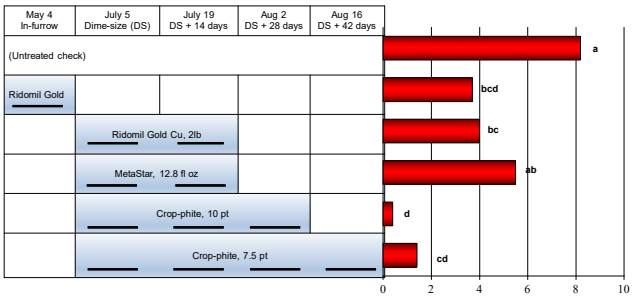
9

Fungicides for Pink Rot Control

- Mefenoxam/metalaxyl (Group 4)
  - Ridomil Gold products
  - Ultra Flourish
  - MetaStar
  - Xyler FC
- Phosphorous acid (Group 33)
  - Phostrol
  - Resist 57
  - Phiticide
  - (Others)
- Oxathiapiprolin + Mefenoxam (in-furrow only; Group 49 + 4)
  - Orondis Gold
- Cyazofamid (Group 21)
  - Ranman
- Ethaboxam (Group 22)
  - Elumin

10

Effect of Fungicide Programs on Pink Rot



Mixed population (mefenoxam sensitive and resistant)

11

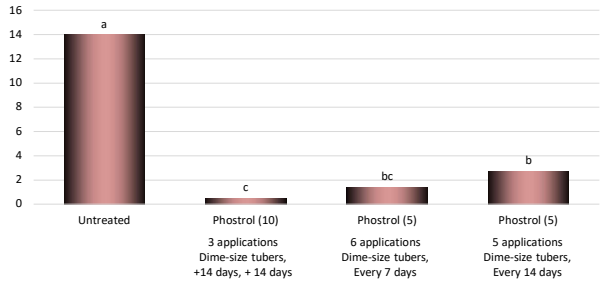
Foliar phosphorous acid can cause phytotoxicity

Photos courtesy of Dr. Andy Robinson

12

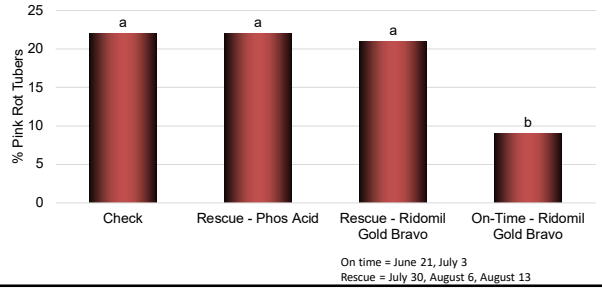
Effect of Phosphite Rate and Timing on Pink Rot

Russet Norkotah, natural infection, Minidoka, ID, 2008



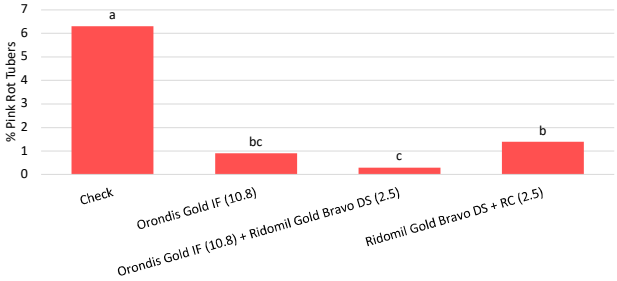
13

Effect of Fungicide Timing on Pink Rot



14

Effect of Orondis Gold on Pink Rot - 2018



15

Phosphites not working as well as expected?

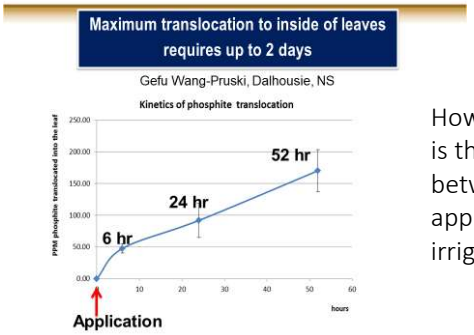
- Is resistance developing to the phosphites?
- Is irrigation interfering with product uptake?
- Is the timing of application optimal?

16

Phosphites not working as well as expected?

- Is resistance developing to the phosphites? No
- Is irrigation interfering with product uptake?
- Is the timing of application optimal?

17

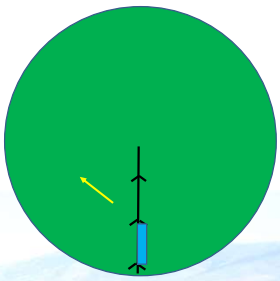


How important is the time between application and irrigation?

18

Treatments

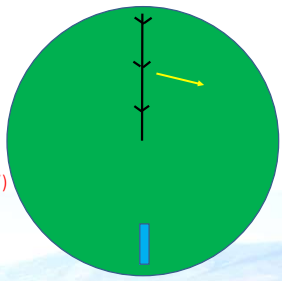
1. Non-treated check
2. 48 hours pre-irrigation (PI)
3. 24 hours PI
4. 12 hours PI
5. 6 hours PI



19

Treatments

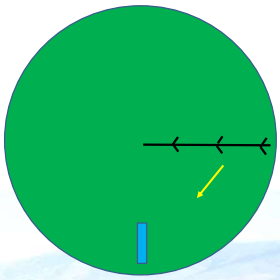
1. Non-treated check
2. 48 hours pre-irrigation (PI)
3. 24 hours PI
   - Starting at full emergence
   - Starting at dime-size tubers (0.5")
   - Starting at row closure
4. 12 hours PI
5. 6 hours PI



20

Treatments

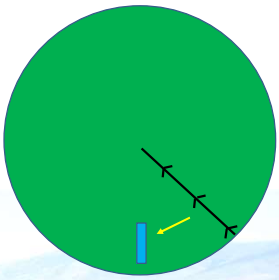
1. Non-treated check
2. 48 hours pre-irrigation (PI)
3. 24 hours PI
4. 12 hours PI
5. 6 hours PI



21

Treatments

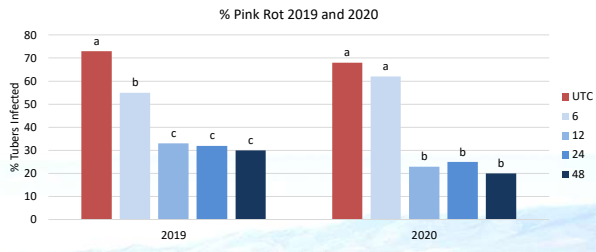
1. Non-treated check
2. 48 hours pre-irrigation (PI)
3. 24 hours PI
4. 12 hours PI
5. 6 hours PI



22

How important is the time between application and irrigation?

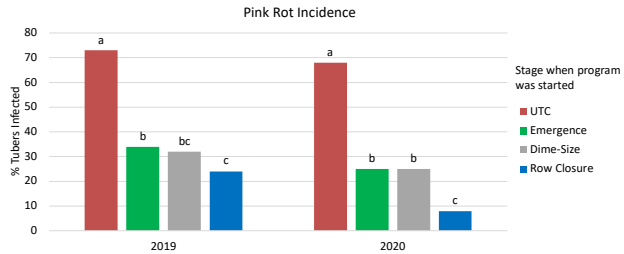
Post-Harvest Challenge Test



23

How important is it when the program starts?

Post-Harvest Challenge Test



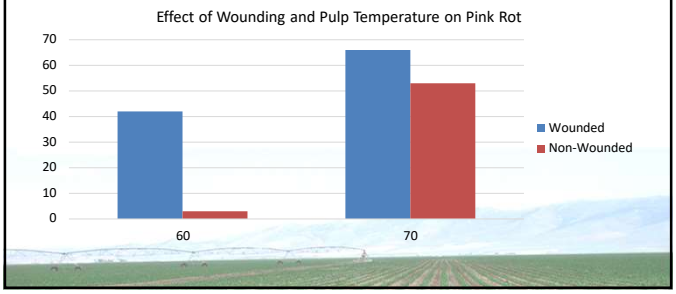
24

Phosphites not working as well as expected?

- Is resistance developing to the phosphites? No
- Is irrigation interfering with product uptake?
  - Wait at least 12 hours between application and irrigation, if possible.
- Is the timing of application optimal?
  - Going at emergence gave no benefit
  - Program start time can be at row closure.
  - Coincides with early blight/white mold program.

25

Avoid Disease Favorable Conditions at Harvest



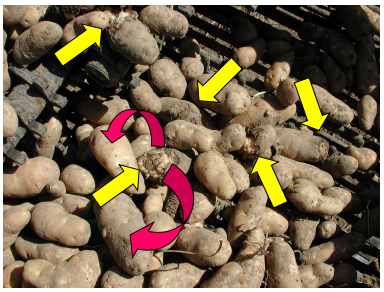
26

If I have a good foliar fungicide program, do I need to worry about a post-harvest application?

- Was the field program sufficient?
  - Environment, application problems, short rotation, over-irrigation
- Is disease present in the field prior to harvest?
  - Some pink rot may develop even with a good program.

27

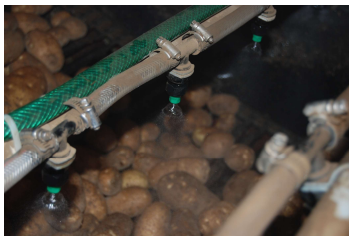
Apply Post-Harvest Fungicides



28

Apply Post-Harvest Fungicides

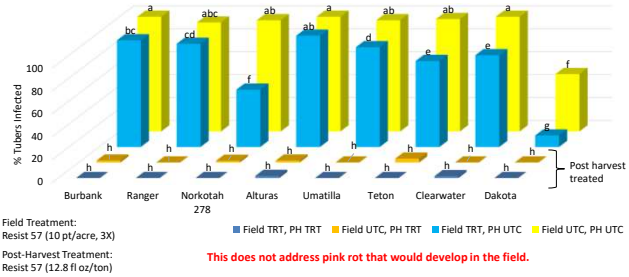
- Phosphorous acid:
  - 12.8 fl oz/ton tubers
  - Apply in 0.5 gal water/ton tubers



29

Post-Harvest Pink Rot

Challenge Inoculation



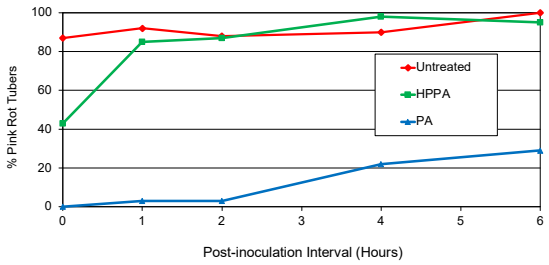
Field Treatment:
Resist 57 (10 pt/acre, 3X)

Post-Harvest Treatment:
Resist 57 (12.8 fl oz/ton)

This does not address pink rot that would develop in the field.

30

Time Between Inoculation and Treatment



31

Pink Rot Management

1. Field selection/crop rotation
2. Adjust soil pH by lime application in low pH soils
3. Plant less susceptible varieties
4. Proper irrigation management
   - Ensure 12 hours between phosphite application and irrigation
5. Use appropriate fungicides
   - Can start phosphite program at row closure
6. Avoid "disease-favorable" conditions at harvest
7. Apply post-harvest fungicides
8. Grade out infected tubers going into storage
9. Reduce tuber pulp temperatures to 55°F or lower

32

Thank You!

33