Fungicide drenches and variety resistance for Management of Fusarium wilt Race 3

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Fusarium Race 3

- Increasing problem in Merced County in the last 10 years
- Most varieties are resistant to race 1 & 2
- Small but increasing number now have race 3 resistance
- Difficult to manage: resistance and rotation

Fusarium oxysporum f.sp. lycopersici

"Fol"

F3

Management of Fusarium

- Containment/sanitation
- Clean seed
- Soil fumigation (?)
- Fungicide dips (?)
- Crop rotation
- Compost/manure (?)
- Variety resistance

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Fungicides?

- Best yields and lowest stem rot incidence in sweetpotato trial when plants dipped with Maxim (fludioxonil) before planting.
- THE EFFECTS OF FUNGICIDES ON FUSARIUM OXYSPORUM F. SP. LYCOPERSICI ASSOCIATED WITH FUSARIUM WILT OF TOMATO
- Jahanshir Amini*, Dzhalilov Fevzi Sidovich. J. of Plant Protection Research

Objectives:

Evaluate the effect of transplant fungicide dips on control and/or suppression of Fol race 3 in resistant and susceptible processing tomatoes cultivars.

2016 & 2017 trials

- Fludioxonil. 5 g and 10 g a.i./L (~ 1 & 2 gal product/100 gallons), 12 & 24 fl oz/A equivalent
- Fluopyram. 7 fl oz/A equivalent
- Biologicals: Serenade Soil, Regalia, Accomplish. 4 qts/100 gallons (2.5 gals/A equivalent

Syngenta: Maxim, Cannonball, Scholar

Bayer: Velum One

RCBD w/5 reps, 2 varieties, 2 locations (Merced and Dos Palos)

F3 Drench Trial 2016
Fludioxymil (Maxim)

2017 drench applications

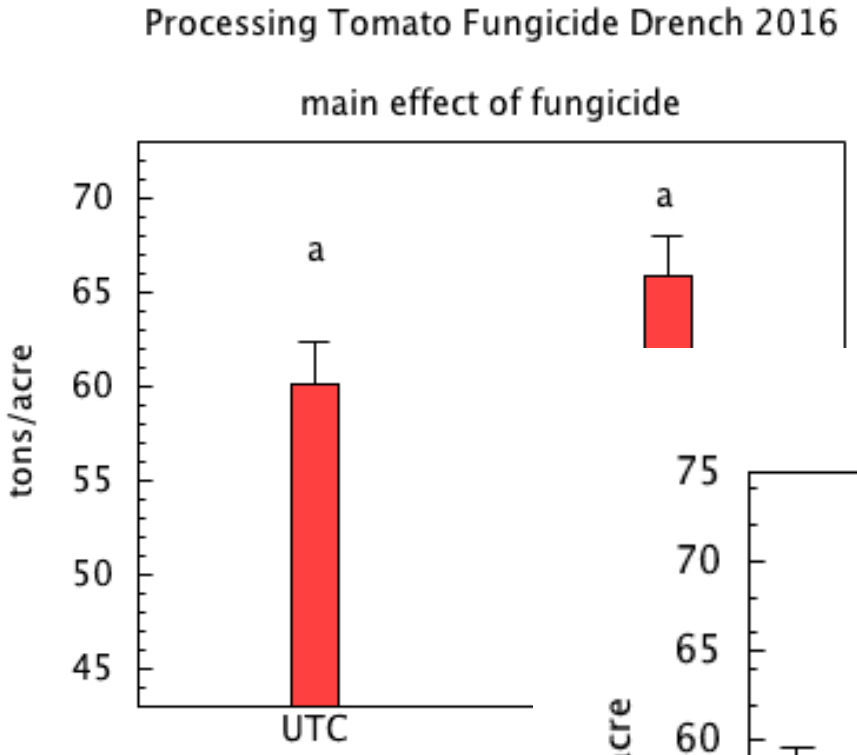
F3 incidence and severity

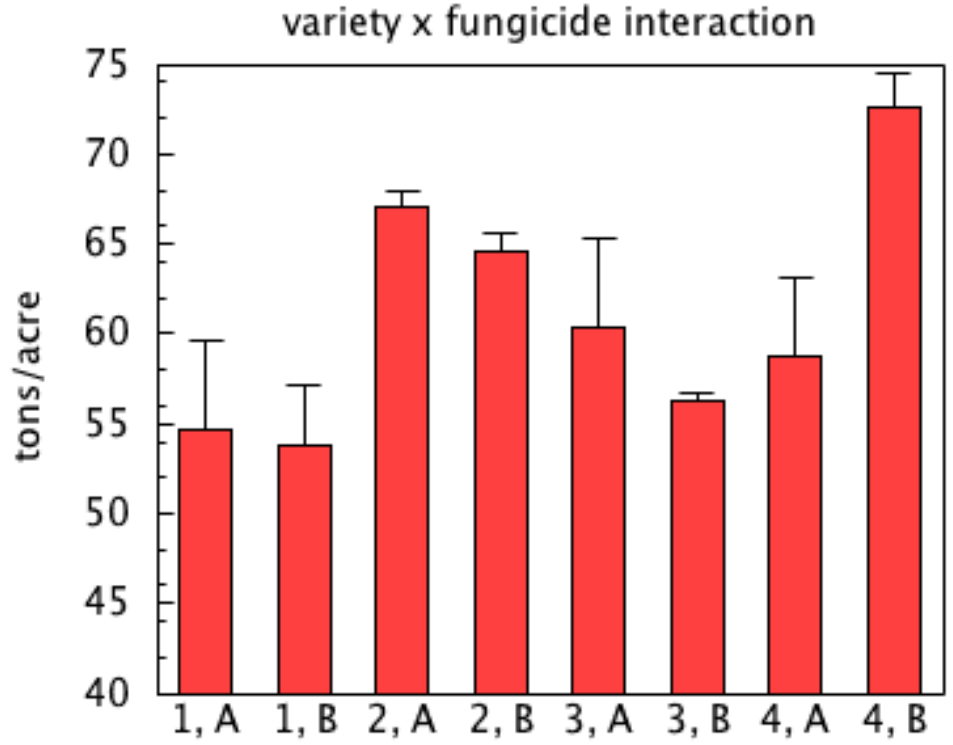
Hand sort, yield, PTAB

2016 Results

All treatments were safe on plants except Quadris Top

(azoxystrobin + difenconazole)





1.H8504 2.hm3887 3. hm58801, 4. BQ141

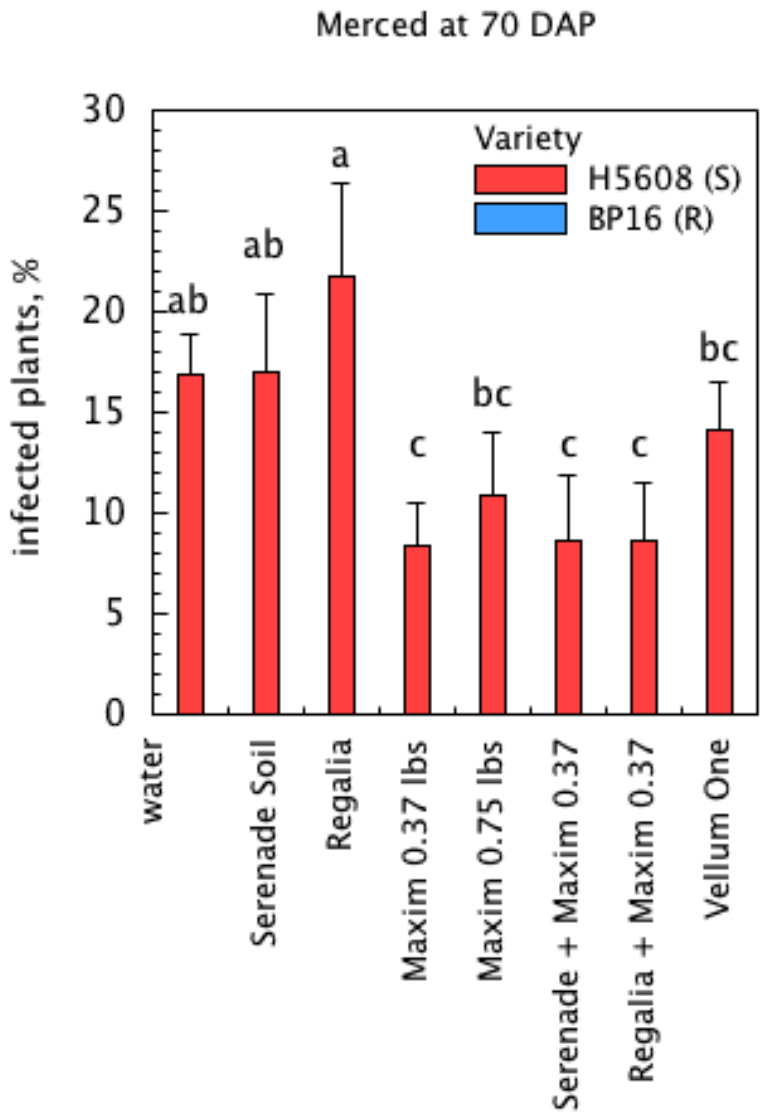

H1539 (R)
H8504
(S)

2017: symptomatic plants were confirmed Fol by Dr. Cassandra Swett ~ 70 DAT

Serenade Soil

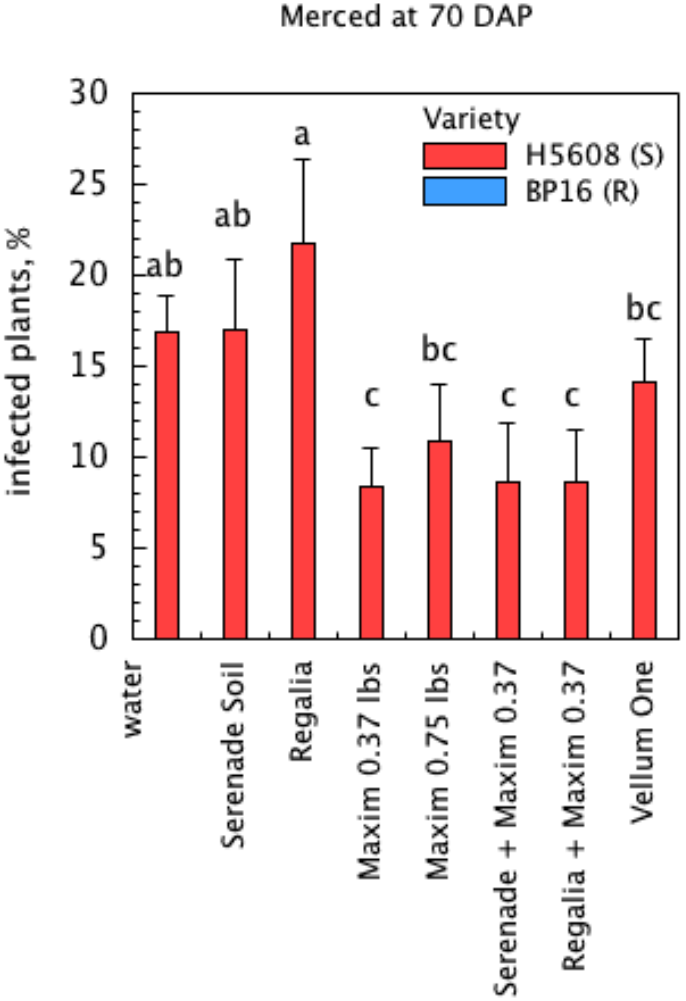
Maxim 12 oz/A

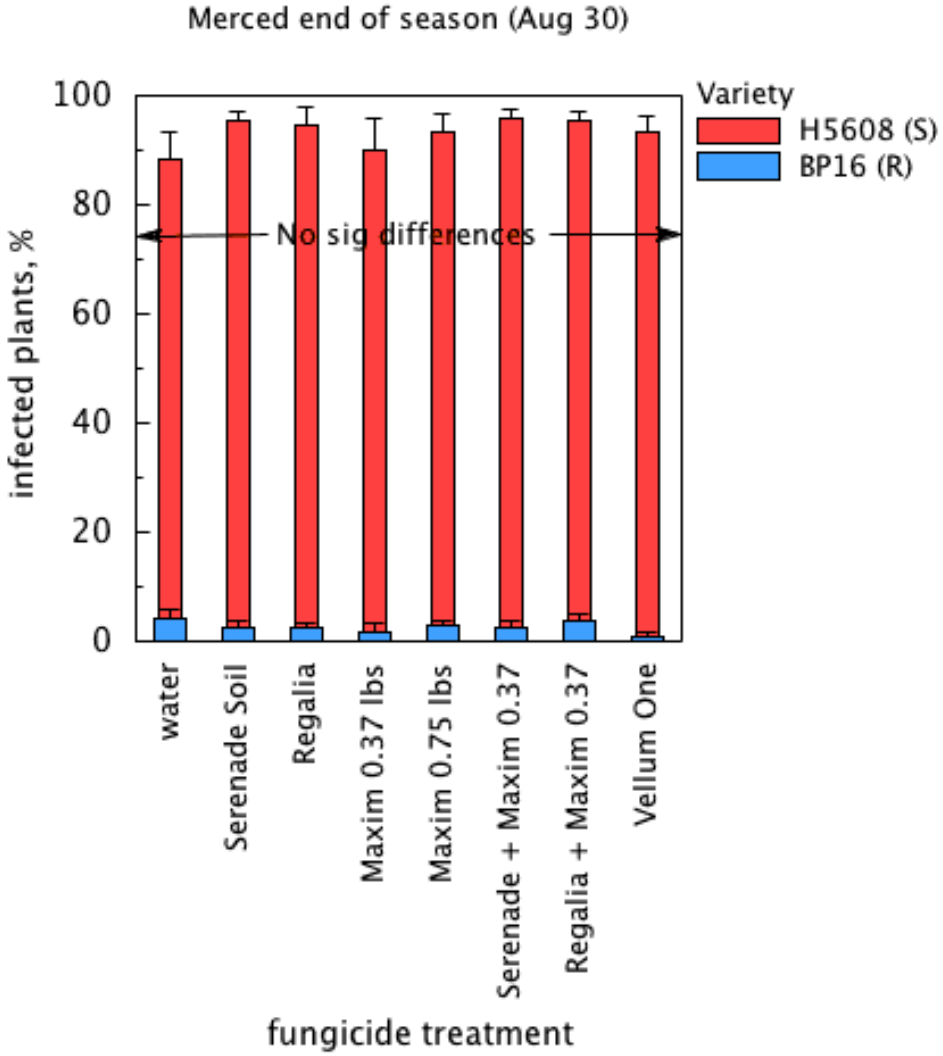
Fol Race 3 infection on pro

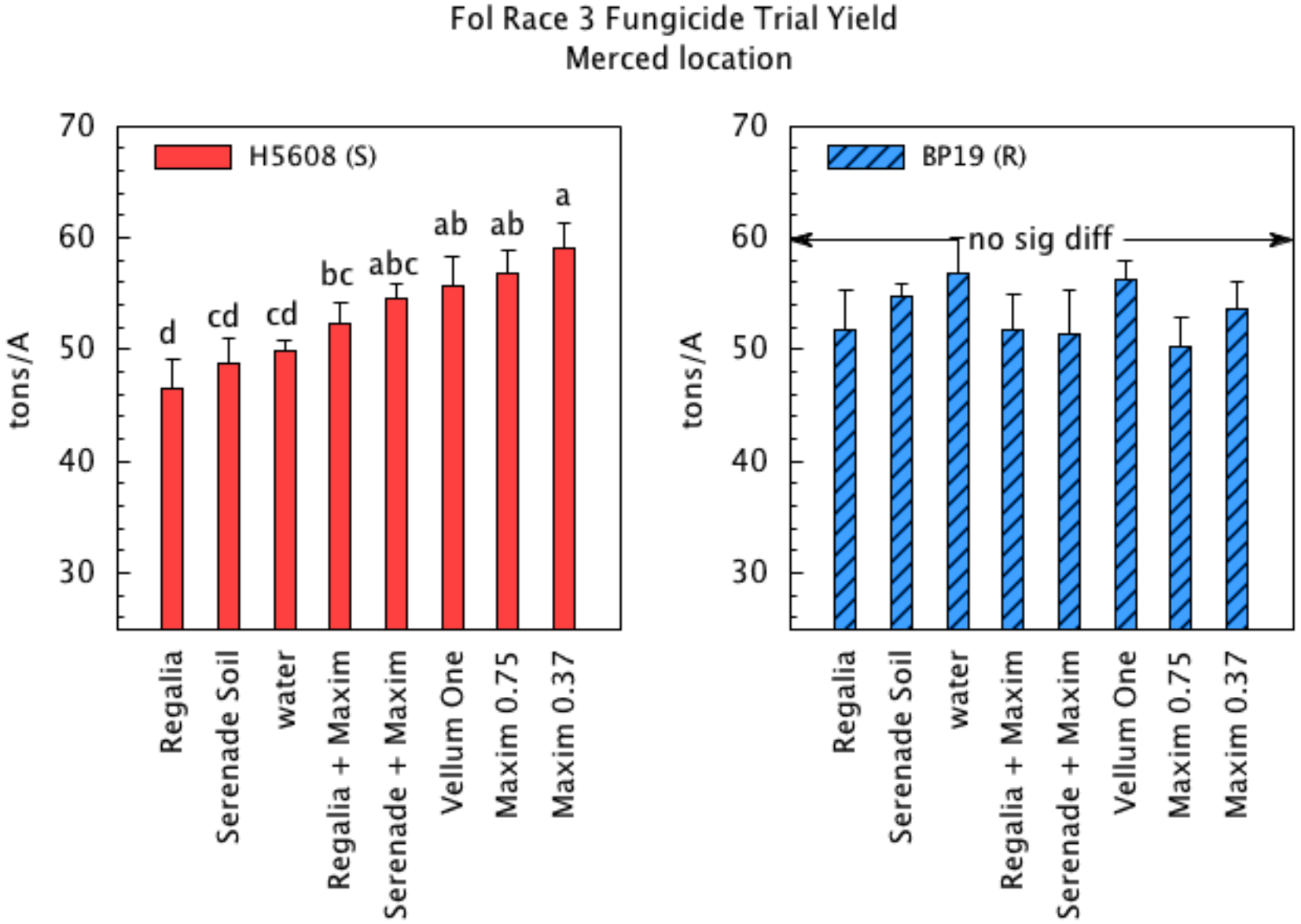


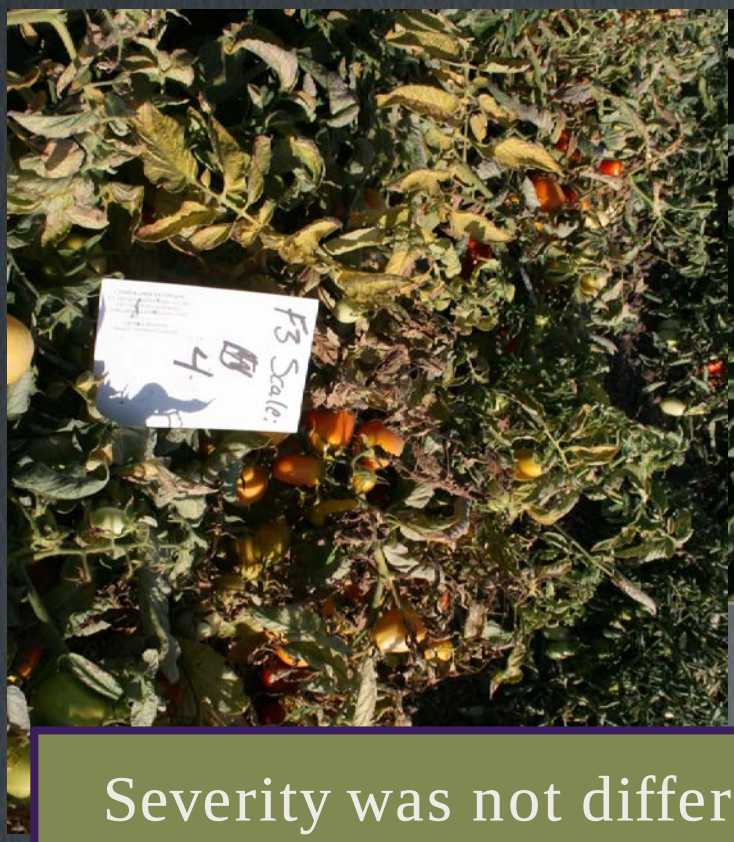
70 days after transplanting

Fol Race 3 infection on processing tomatoes



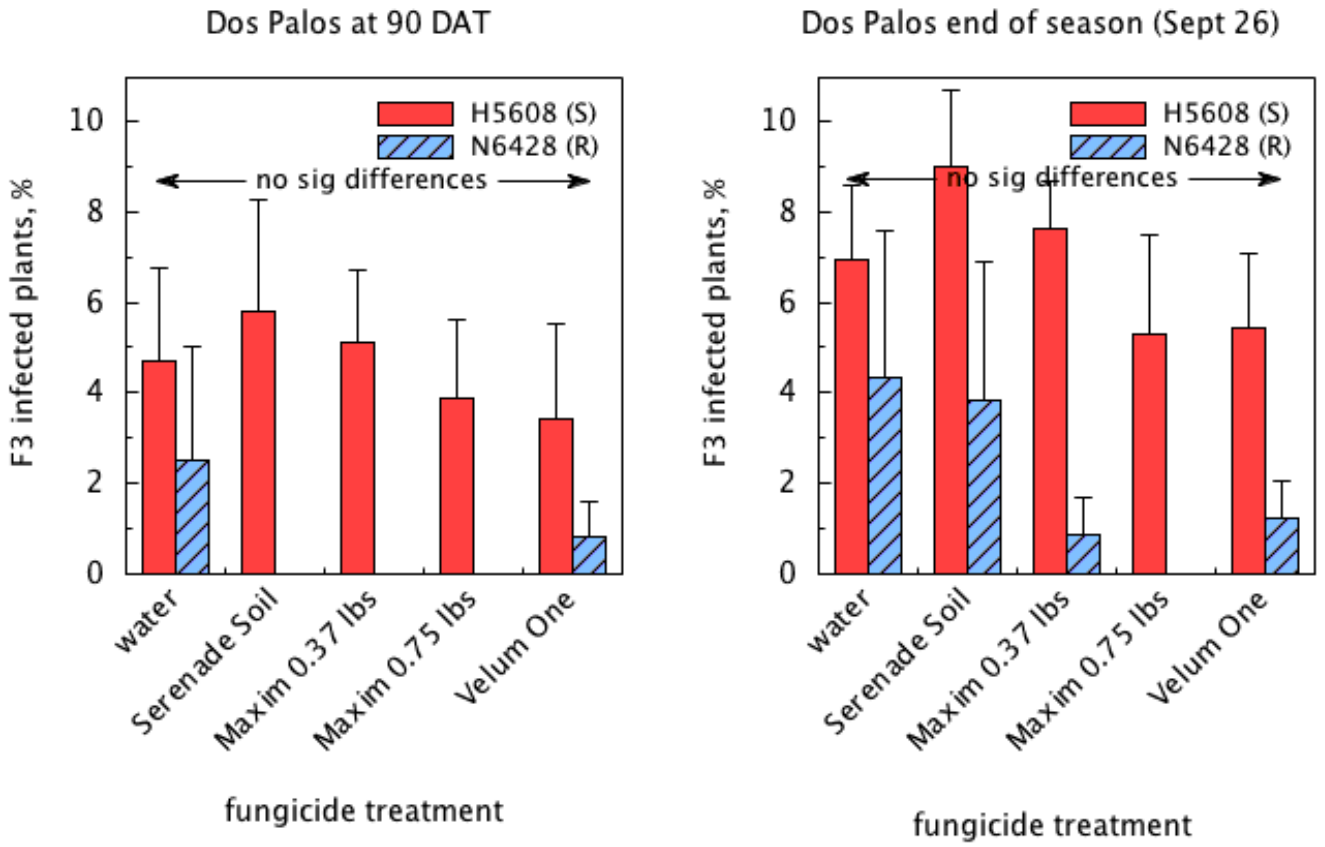



Fol Race 3 Fungicide Trial Yield
Merced location
H5608 (S)
tons/A
70
60
50
40
30
d
cd
cd
bc
abc
ab
ab
a
Regalia
Serenade Soil
water
Regalia + Maxim
Serenade + Maxim
Vellum One
Maxim 0.75
Maxim 0.37
BP19 (R)
no sig diff



Severity was not different between fungicide treatments

Fol Race 3 infection on processing tomatoes



Conclusions

- 2016 significant suppression of disease onset in heavily infected field up to 70 DAT in H8504 & HM3887
- No disease in F3 resistant HM5801 or BQ141
- Increased yield in F3 lines
- 2017 significant suppression of disease onset in heavily infected field up to 70 DAT in H5608
- No disease in F3 resistant BP16 or N6428
- Increased yield in susceptible line

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