



Efficacy of Plant Dip Treatments for Control of Anthracnose

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Annual Santa Maria Strawberry and Vegetable Meeting

Tuesday, November 28, 2017

Outline

- Anthracnose and strawberries
- Our trial
- Conclusions



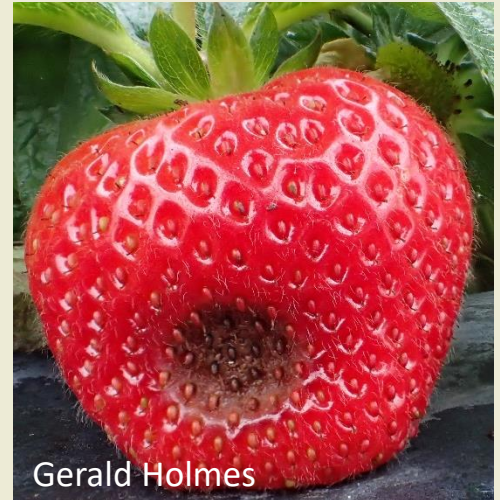
Gerald Holmes

Anthracnose crown rot and fruit rot

- Caused by *Colletotrichum acutatum*



Gerald Holmes



Gerald Holmes



Kelly Ivors

Anthracnose crown rot



Gerald Holmes



Gerald Holmes



Gerald Holmes

Anthracnose crown rot



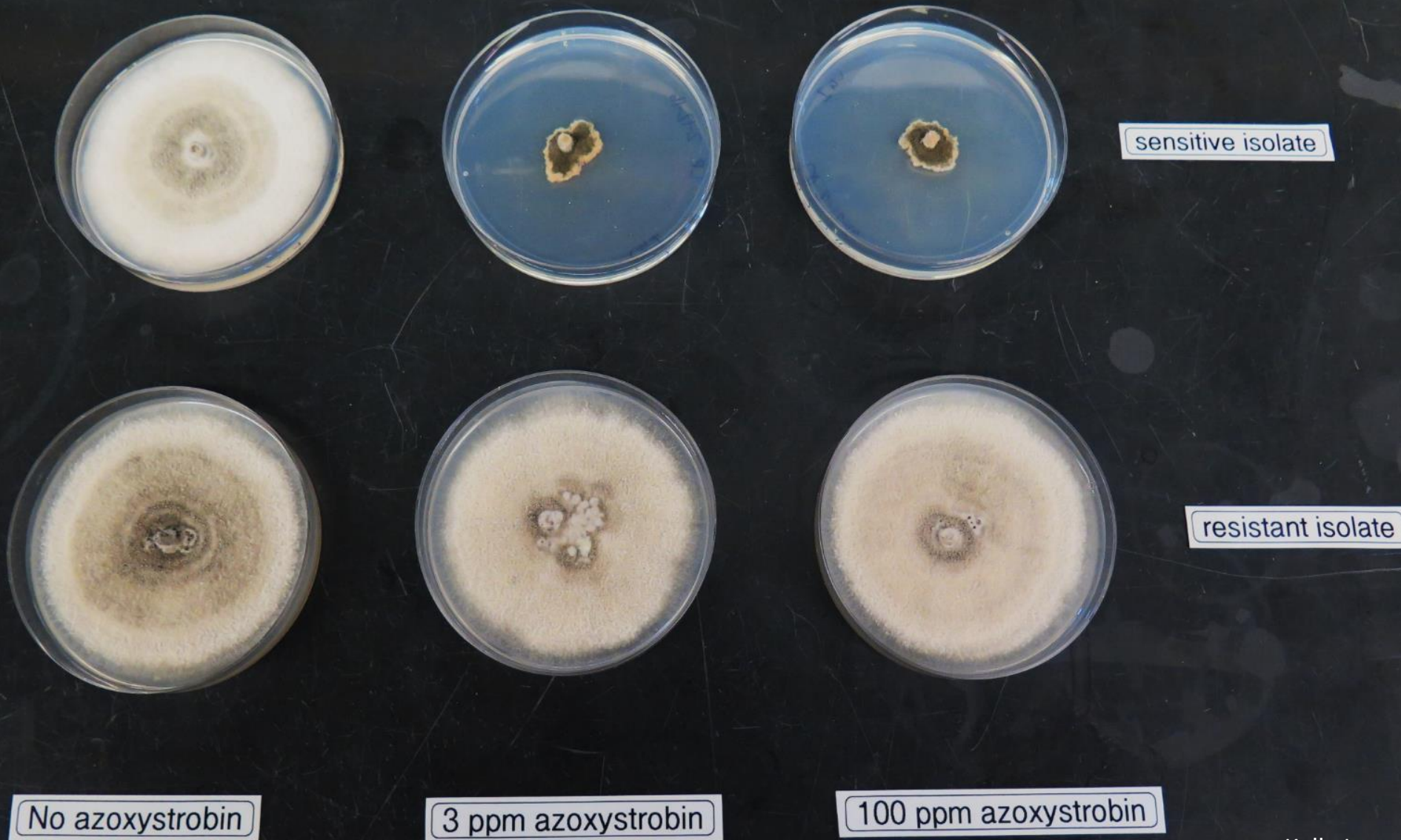
Anthracnose crown rot and fruit rot

Control options

- Pathogen-free planting stock
- fumigation
- Pre-plant fungicide dip
- Foliar fungicide application before rain event for fruit rot
- *C. acutatum* can be resistant to fungicides



Azoxystrobin resistance



The trial

- **Day 1:** Strawberry transplants inoculated with *Colletotrichum acutatum*
 - 4 strobilurin (Qol) resistant strains
 - 4 Qol sensitive strains
- **Day 2:** Fungicide treatment: dip five minutes then drain and refrigerate overnight
- **Day 3:** Planted

Treatments

Checks	{	1)Non-inoculated, non-treated, non-washed	
		2)Non-inoculated, non-treated, washed	
		3)Inoculated, non-treated	
		4)Abound	FRAC 11
		5)Switch	FRAC 9 + 12
		6)Zivion M Low	FRAC 48
		7)Zivion M High	FRAC 48
		8)Zivion M Low + Omega 500F	FRAC 48 + 29
		9)Omega 500F	FRAC 29
		10) Kenja 400SC	FRAC 7
		11) Actinovate	

Monterey

Portola





Qol Sensitive

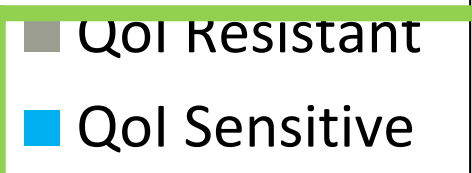
Qol Resistant

Bo Liu

71 days after planting

Plant mortality (%)

100
80
60
40
20
0



non-washed washed Inoculated only Abound Actinovate Kenja Omega Switch Zivion Low Zivion High Zivion + Omega

ABC

BC

A

DE

AB

BC

AB

C

BC

D

EFG

EFG

D

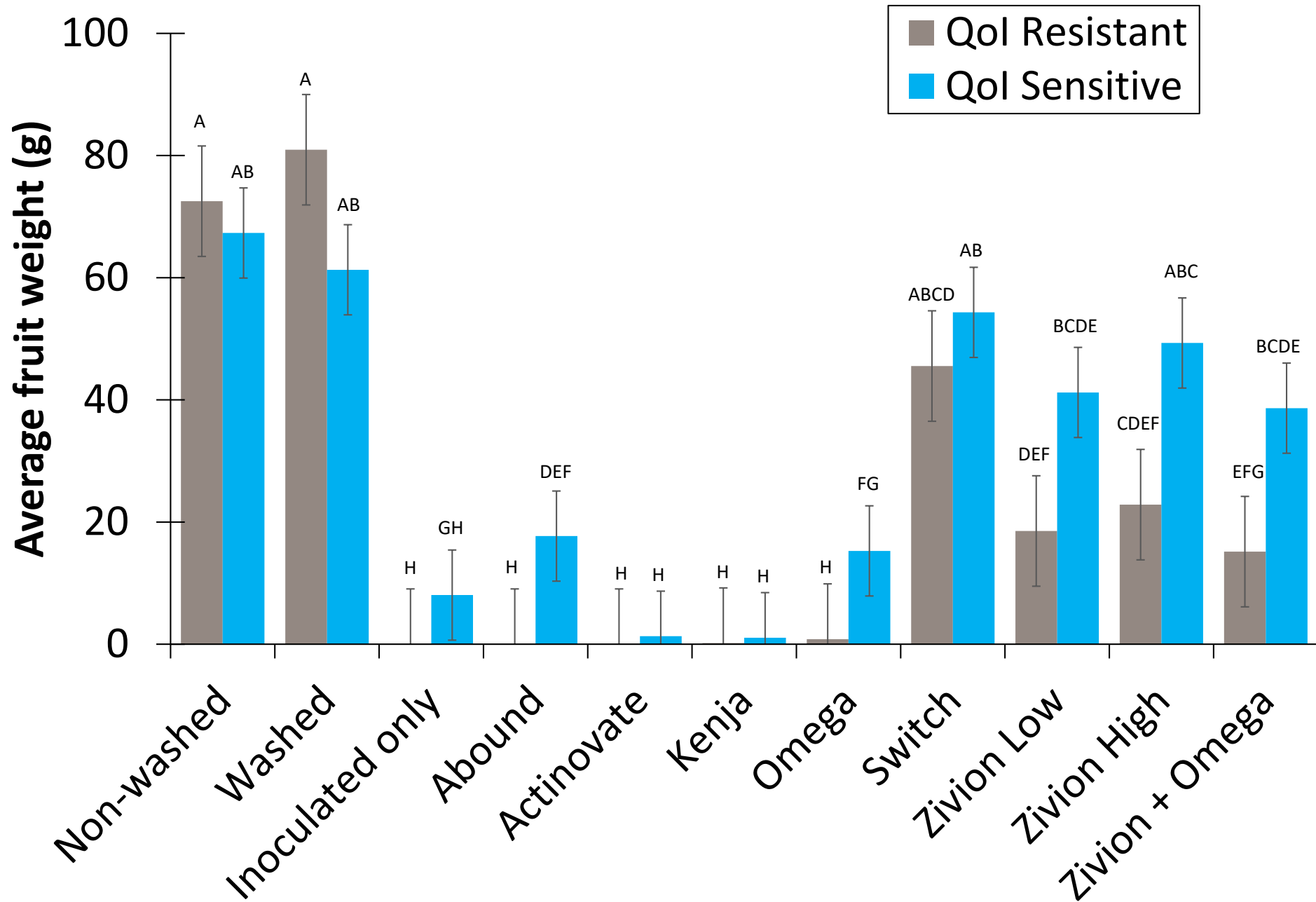
DE

DEF

EFG

D

DE

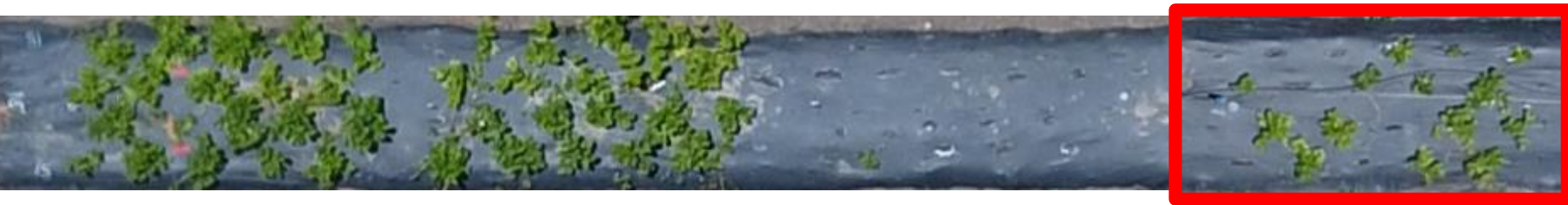


Non-washed

washed

Inoculated only

Abound



Switch

Ziv low

Ziv high

Ziv + Omega



Omega

Kenja

Actinovate



71 days after planting

Conclusions

- No difference between cultivars Portola and Monterey
- This trial had much more potent inoculum than real life
- Switch, Abound, and Zivion are effective, **IF** no resistance.
- Additional resources:
 - Anthracnose Production Guideline
 - UCIPM efficacy tables

Gray mold management & fungicide resistance meetings!

- December 12 – Ottavio's Italian Restaurant, Camarillo
 - 2 PCA CE units
- December 13 – UCCE Santa Cruz, Watsonville
 - 3 PCA CE units
- December 14 – Radisson Inn, Santa Maria
 - 2 PCA CE units

www.strawberry.calpoly.edu