

WASHINGTON STATE UNIVERSITY



EXTENSION

World Class. Face to Face.

Effective Management Strategies for Weeds, Insects and Diseases

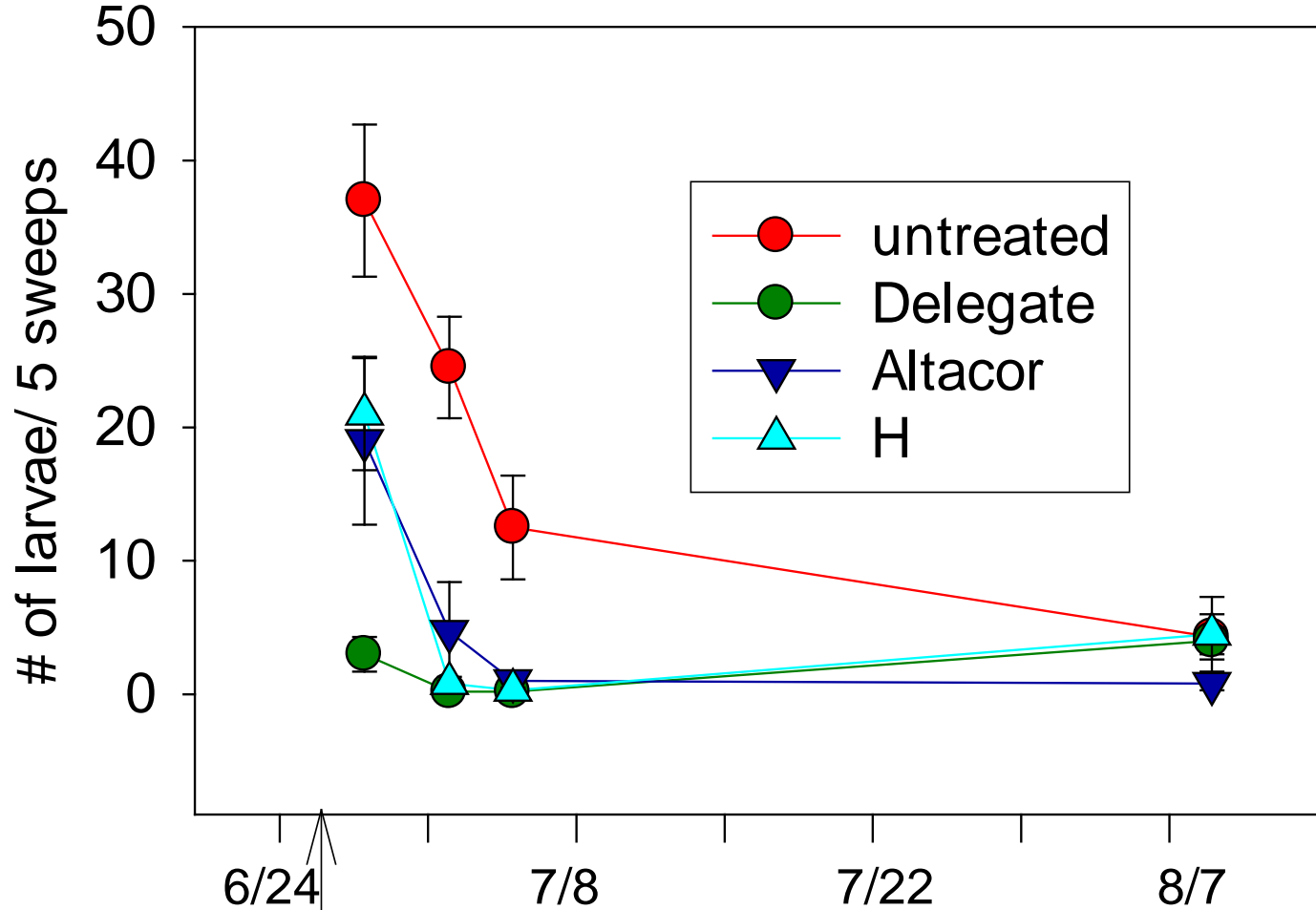
Kim Patten

Weevil – larvicide treatments

- MET 52 (*M. anisopliae*)
 - 2010 trials
 - OSU found efficacy on BVW in WA, not OR
 - 2011 trials
 - WSU applied at 3 sites in Spring 2011 in Grayland, WA with known larvae populations - no treatment effect
 - WSU Applied at 2 sites in Summer 2011 in Grayland, WA with known larvae populations – no treatment effect
- *Paecilomyces fumosoroseus* Apopka Strain 97
 - WSU Applied Winter 2012

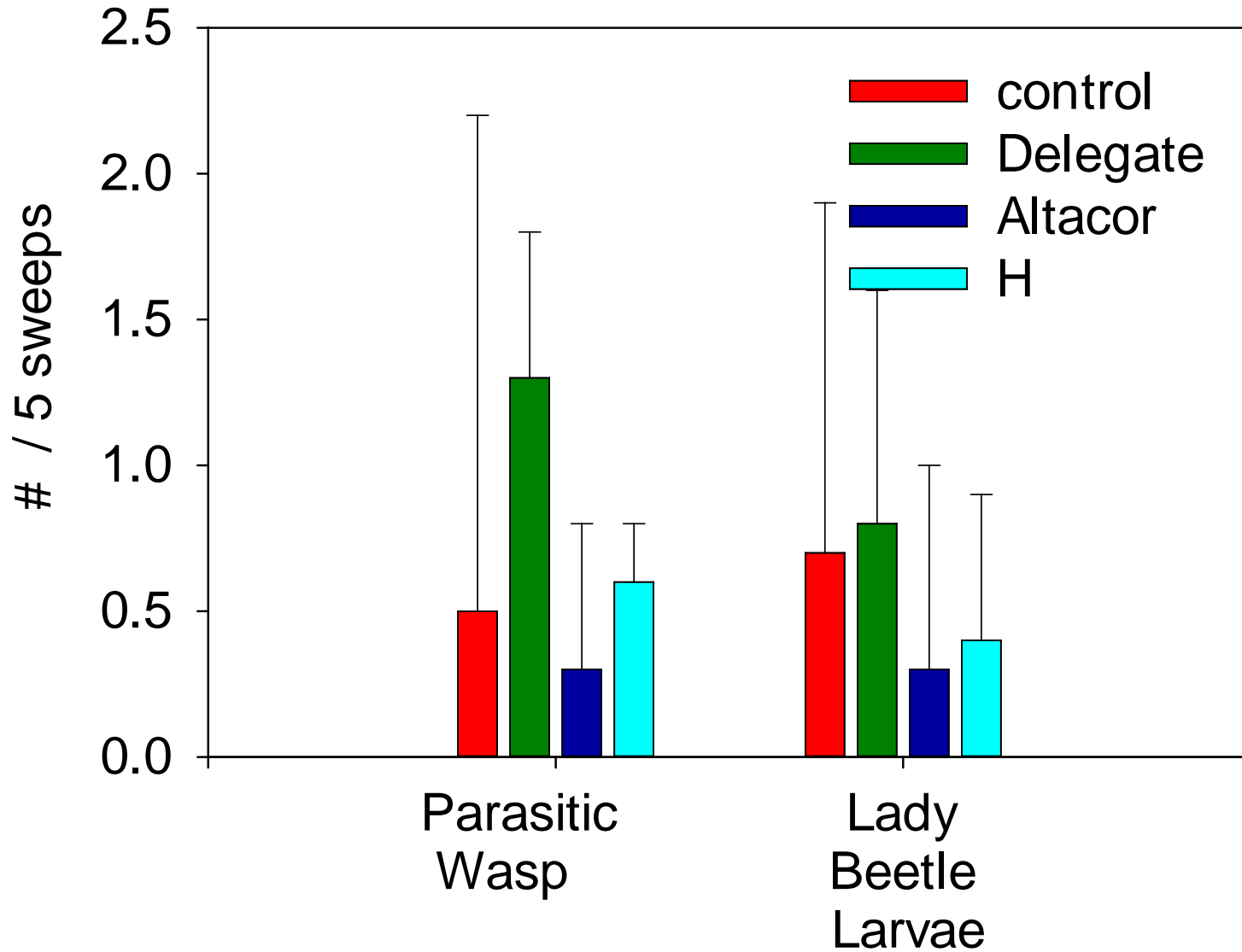


Total # alive BHFV larvae

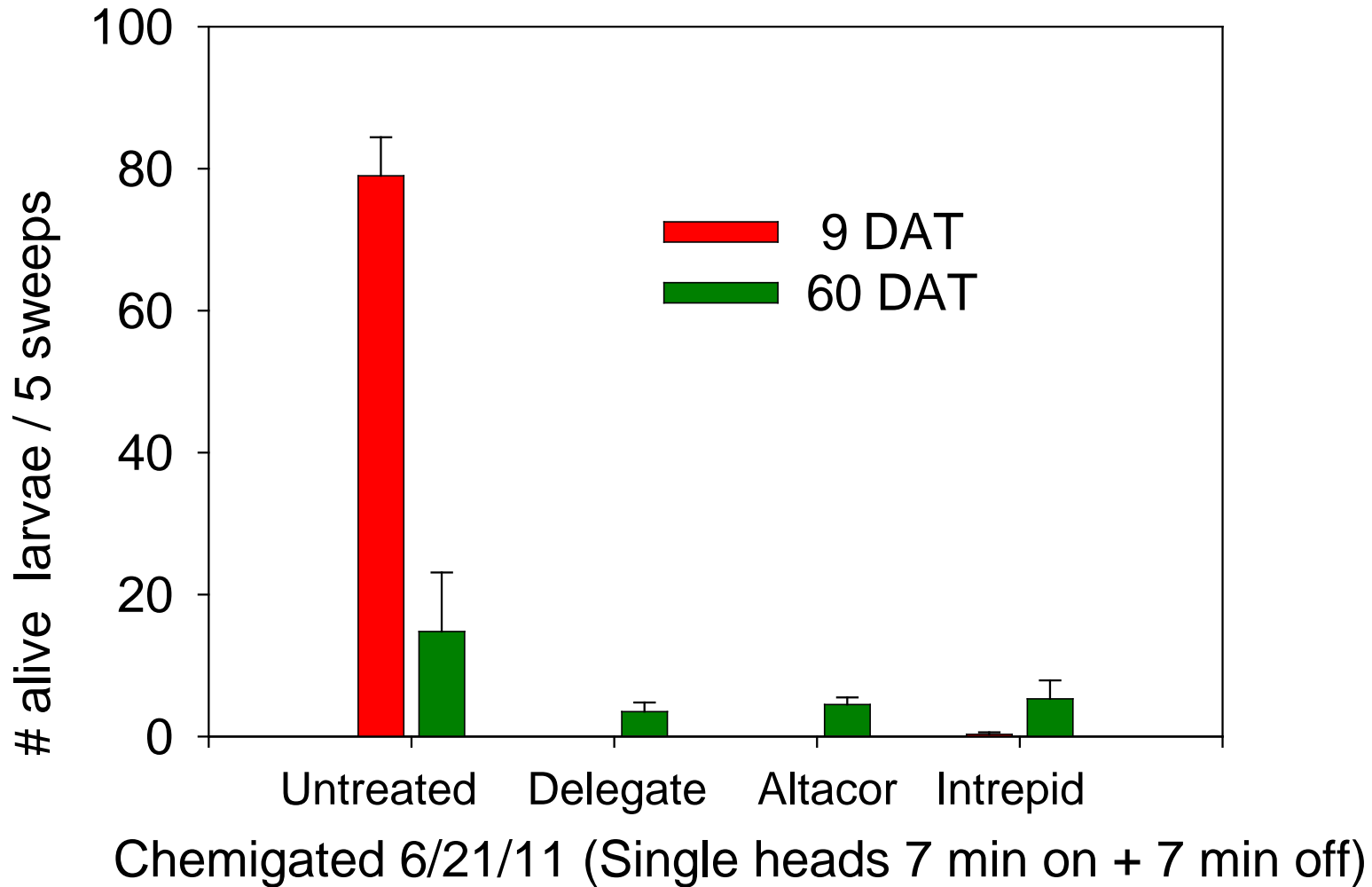


Applied 280 gpa, washoff 730 gpa
6 reps 10' x 10'

Beneficials 7 DAT



BHFW control with Chemigation- severe infestation - 2011

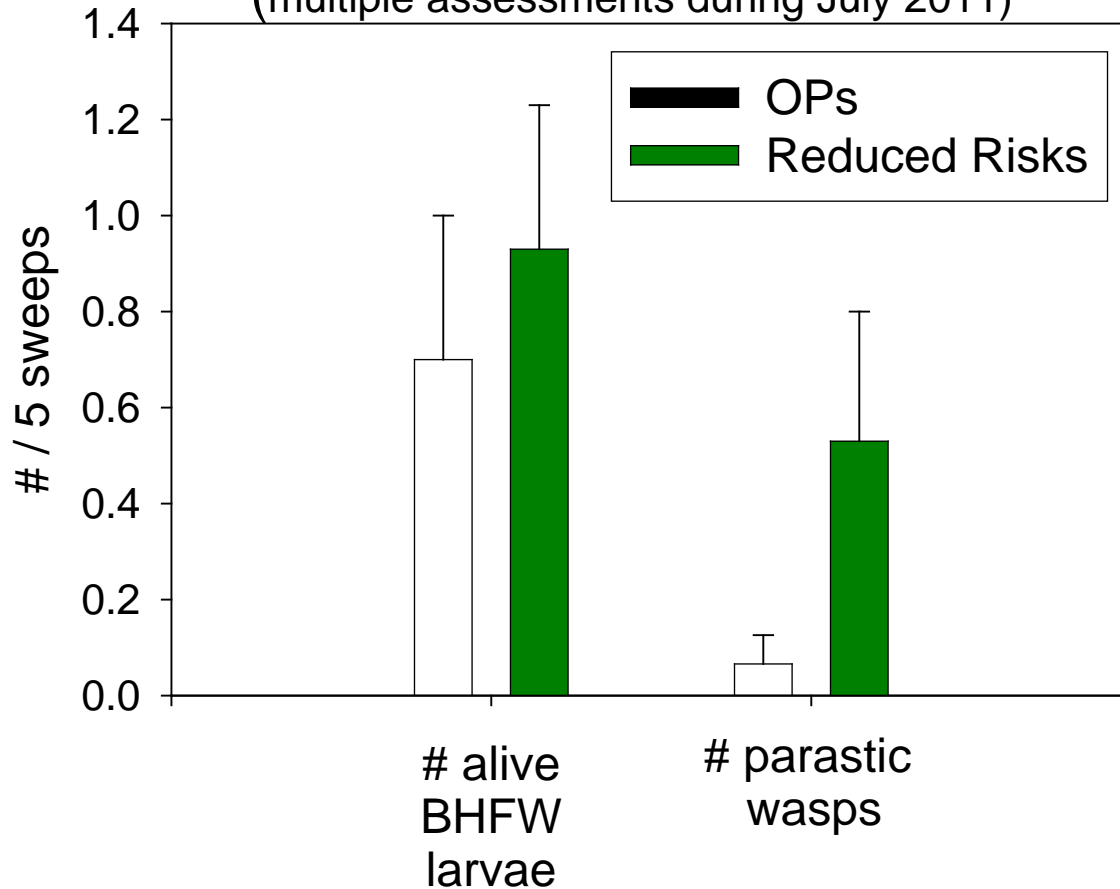


Whole farm treatments

Farm #	Treatment 1st generation	#larvae/5 sweeps Pre-spray	#larvae/5 sweeps post 1st spray	#larvae/5 sweeps post 2nd spray	Peak 2nd gen. trap counts
1 Chem	Delegate 3 oz/a + Delegate 6 oz/a	21	4 DAT= 29	0	52
2 Chem	Delegate 6 oz/a	3	4 DAT =1	No spray	56
3 Chem	Delegate 3.25 oz/a Delegate 6 oz/a	31	7 DAT =31	14	65
4 Chem	Delegate 6 oz/a + Intrepid 16 oz/a	26	4 DAT =39	8	85
5 Hand Brd. 8 gpa	Entrust 3 oz/a	18	6 DAT =1	No spray	97
6 Chem	Acephate 1 lb/a	-	-	-	85
7 Chem	Diazinon	-	-	-	65
8 Chem	Diazinon	-	-	-	65

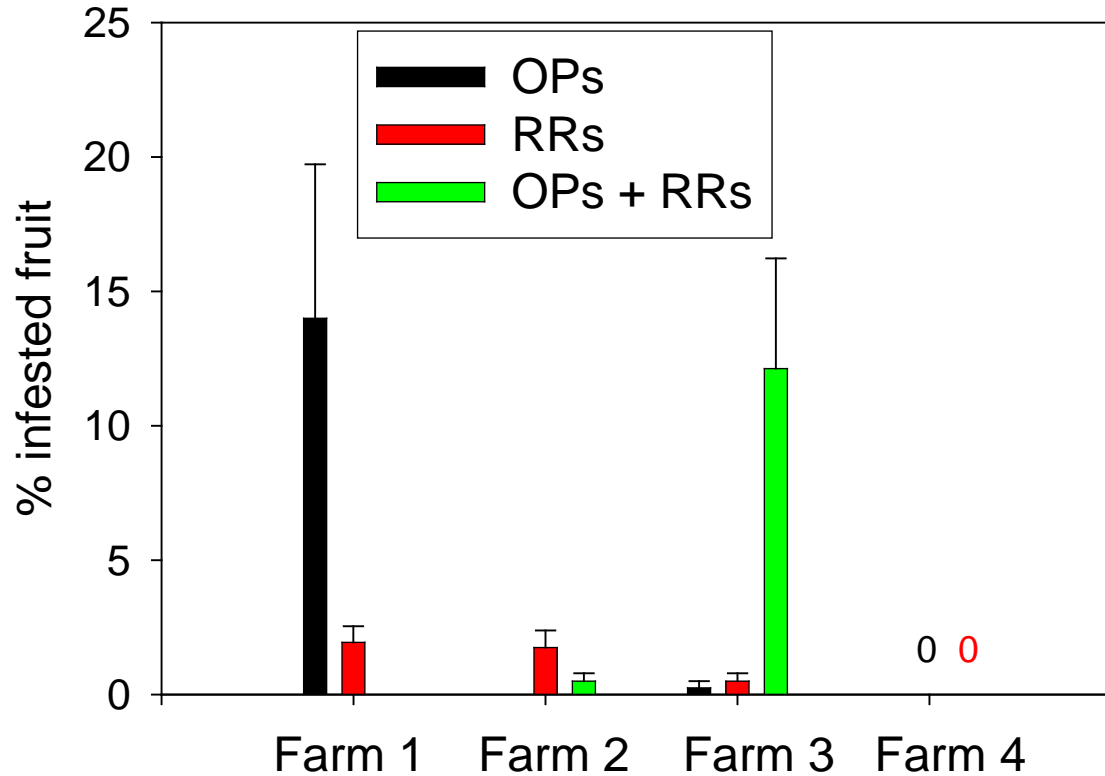
Whole farm treatments

Means across farms for OP and RR treated paired beds within farms
(multiple assessments during July 2011)



Whole farm treatments

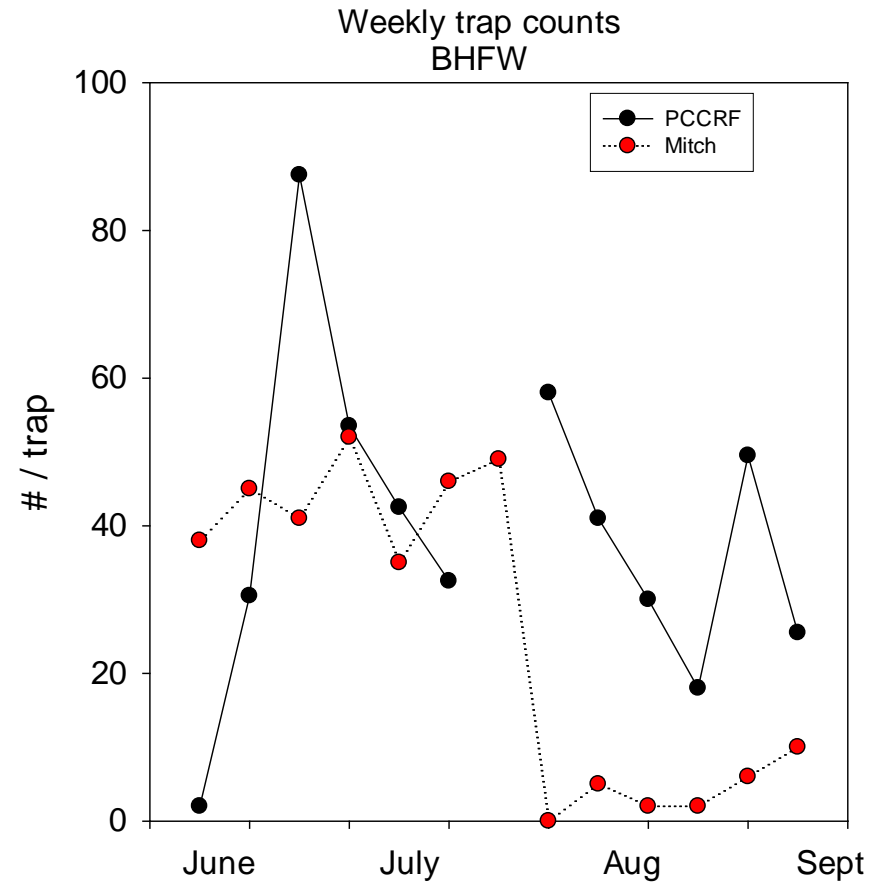
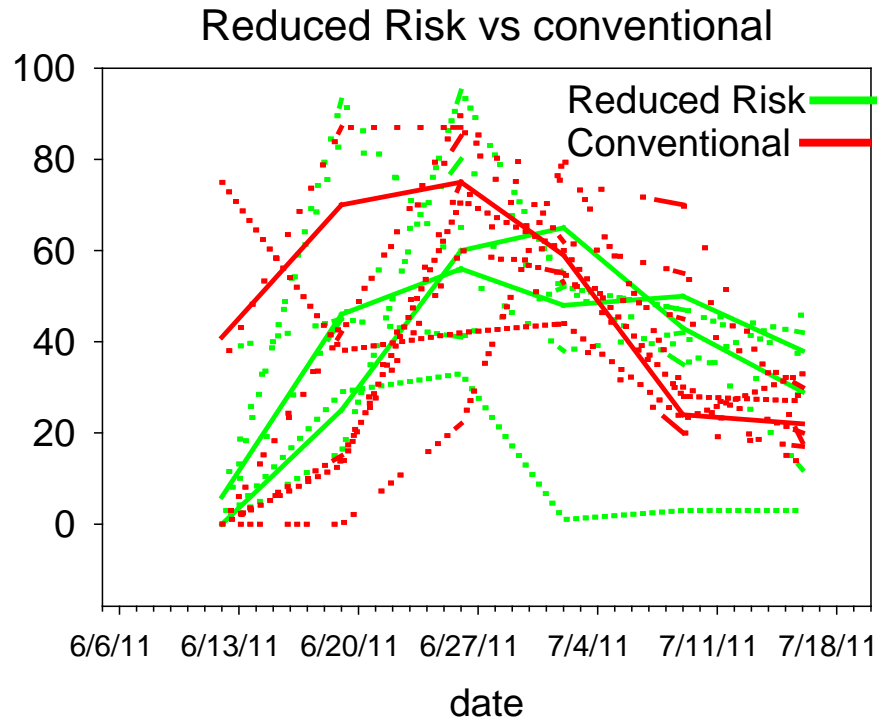
Fireworm - infested fruit



Means across farms for OP and RR
treated paired beds within farms
(Assess 8/9/11)

Blackheaded Fireworm: Management without OPs - Whole Farm Treatments

What happens to the fireworm population over time and what does it mean?



- Recommendations – fireworm control without OPs
 - Best chemistries: Delegate and Intrepid at full label rate
 - Application timing based on sweeping / instar size
 - Repeat application may or may not be necessary
 - Adjustments are needed for chemigation system
 - Very doable and affordable
 - Not sure of implications for beneficial insects or long term BHFw populations

Insecticide	~Cost \$ per ac	Relative efficacy with chemigation For BHFw (1 to 10)
Diazinon	18	10
Delegate	35	8-9
Intrepid	20	8-9
Success	29	7
Confirm	24	6
Altaclor	40	8
Entrust	48	7

Insecticide	Rate used (lbs/ac)	Bee Toxicity LD50 (μ g/ bee)	Relative risk quotient to bees (use rate/ toxicity)
Diazinon	2	0.09	22
Delegate	0.13	0.02	6.5
Success	0.08	0.025	3.2
Entrust	0.08	0.025	3.2
Intrepid	0.25	100	0.0025
Confirm	0.25	100	0.0025
Altaclor	0.05	104	0.0004

Weed Control

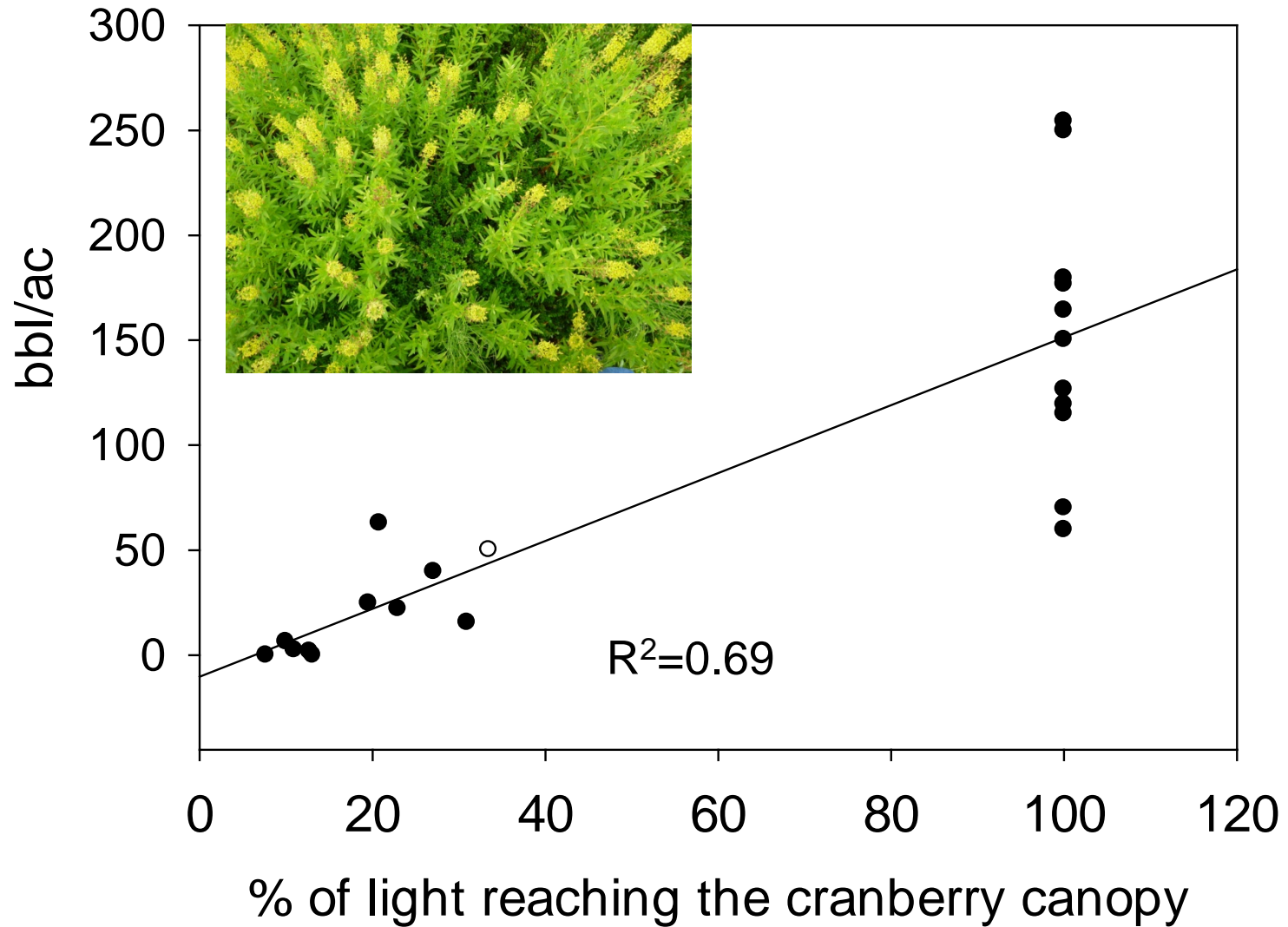
New chemistries (not a lot of options for BC)

- I – has potential as pre-emergent, years off
- Q – US only
- C – US only

Old chemistries

- Stinger – mid winter/ early spring
- Callisto – Chemigation?
- Impacts of weeds on yield

Yield (bbl/ac) of Stevens Cranberries in 2011 as affected by yellow weed coverage

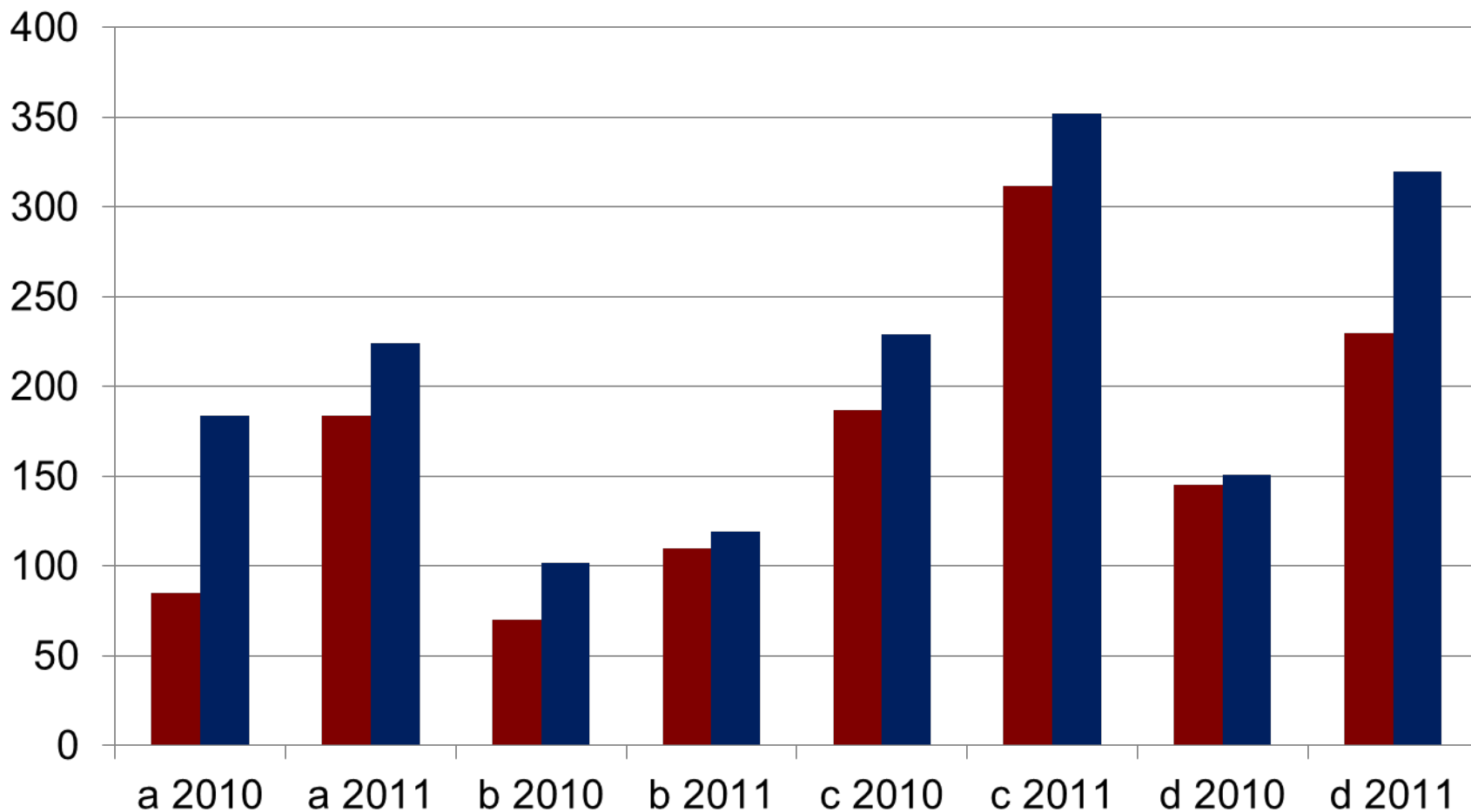


Fungicides to increase yield?

2010 and 2011 study

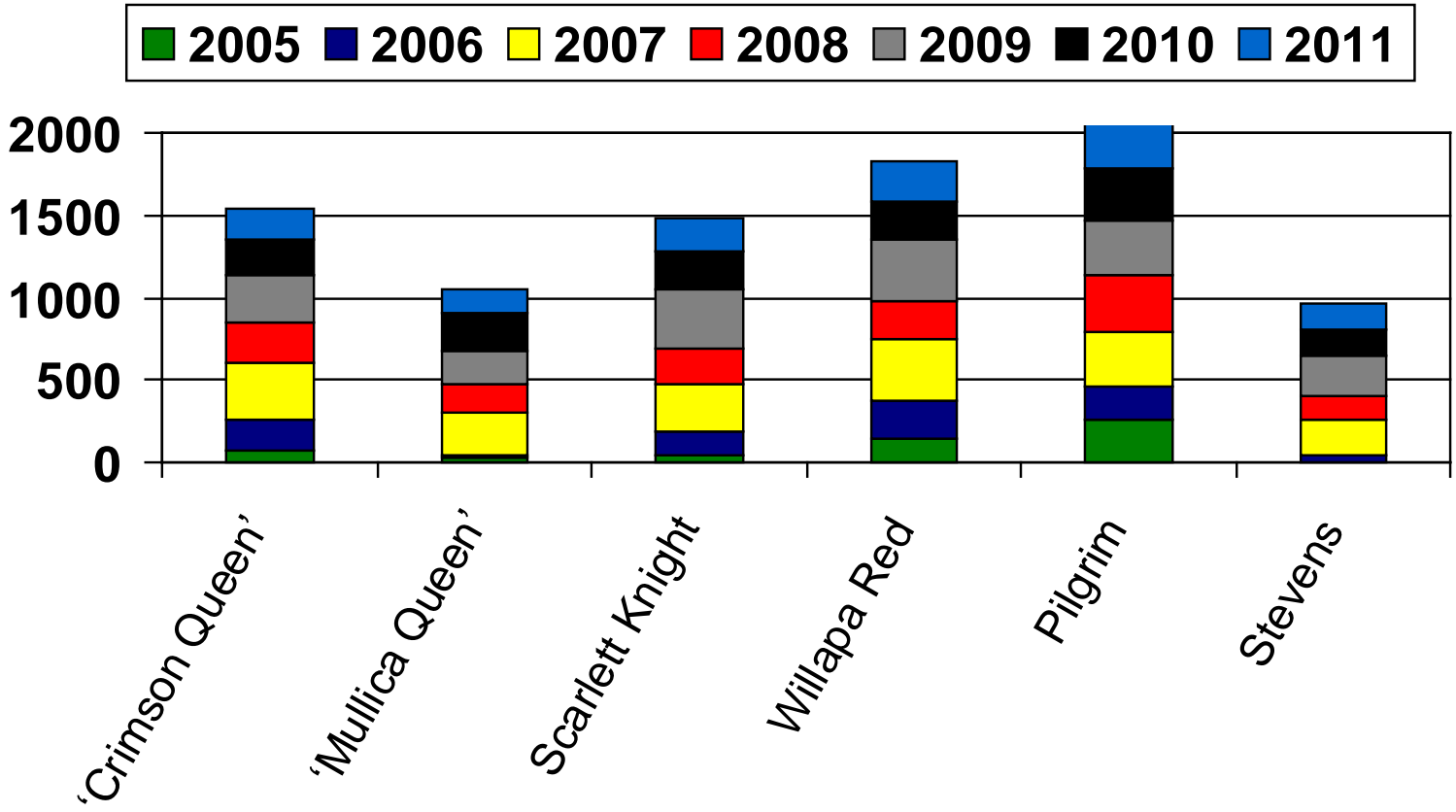
Yield bbl/ac (sound berries @ harvest)

■ grower trt (Bravo + Manzate @ set) ■ A + I twice @ blm + grower trt



Extra \$100/ac in fungicides ~ 20% increase in returns ~ \$1400/ac

Cumulative yield – 6 years (bbl/ac)



Variety trials – variation on size as a function of weather

