

Efficacy of Dominus fumigant and performance of four UC cultivars in *Verticillium*-infested soils



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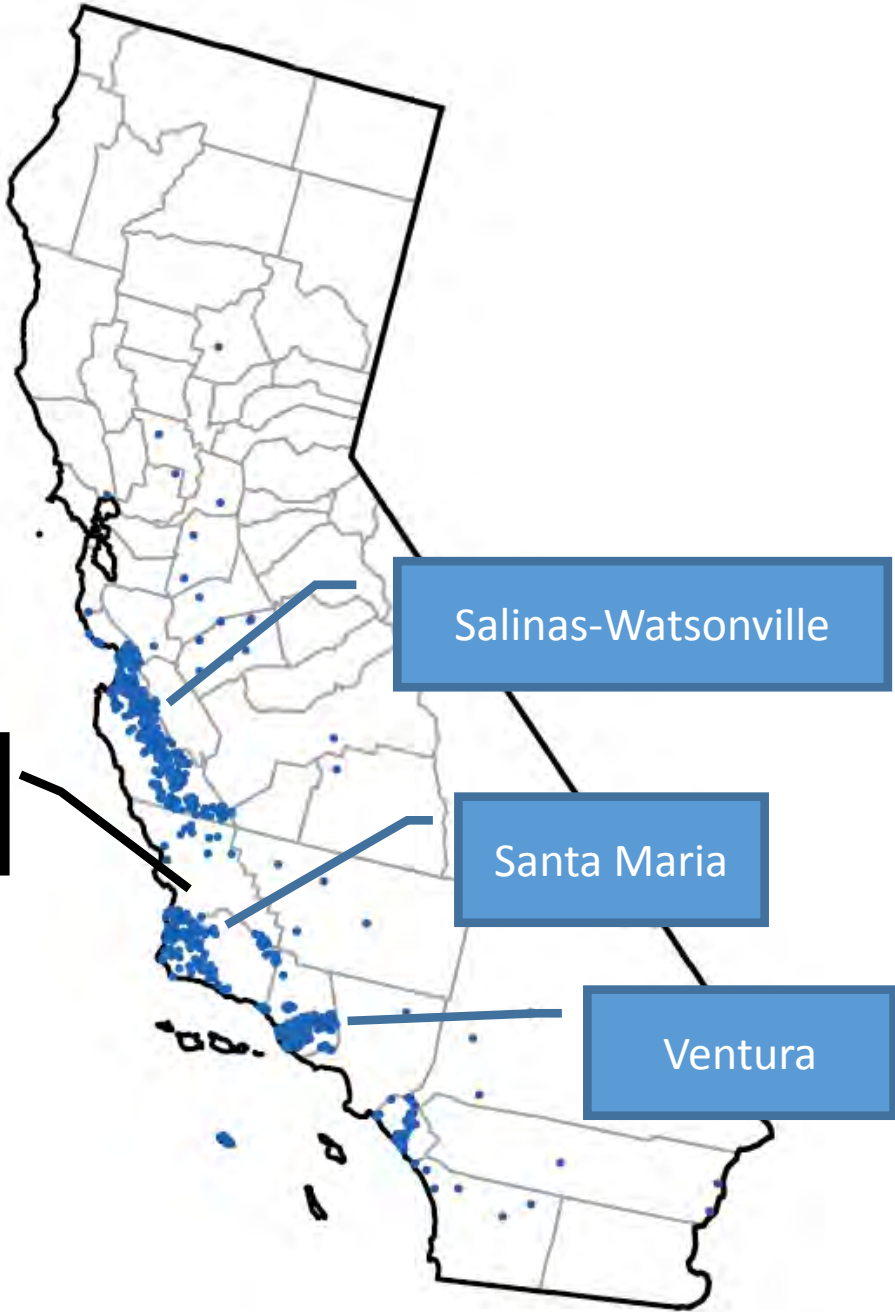


CAL POLY

Strawberry Center

To increase the sustainability of the California Strawberry industry through research and education that addresses industry needs.





Salinas-Watsonville

Santa Maria

Ventura

Salinas silty clay loam



Sep 19, 2014



Nov 11, 2014



March 6, 2015

Dominus
40 gal/Ac

Pic-Clor 60
42 gal/Ac

Tri-Con 50/50
350 lb/Ac

No fumigant

Planting Date: Nov. 11, 2014

Row Spacing: 64" beds

Cultivar: Albion

Quadrant \approx 0.3 acre

Treatments

- Non-fumigated
- Tri-Con 50/50 50% methyl bromide, 50% chloropicrin
- Pic-Clor 60 57% chloropicrin, 37% 1,3-dichloropropene
- Dominus 96.3% allyl isothiocyanate (AITC)

17 Jun 2015

- Weed control
- Plant mortality
- Yield

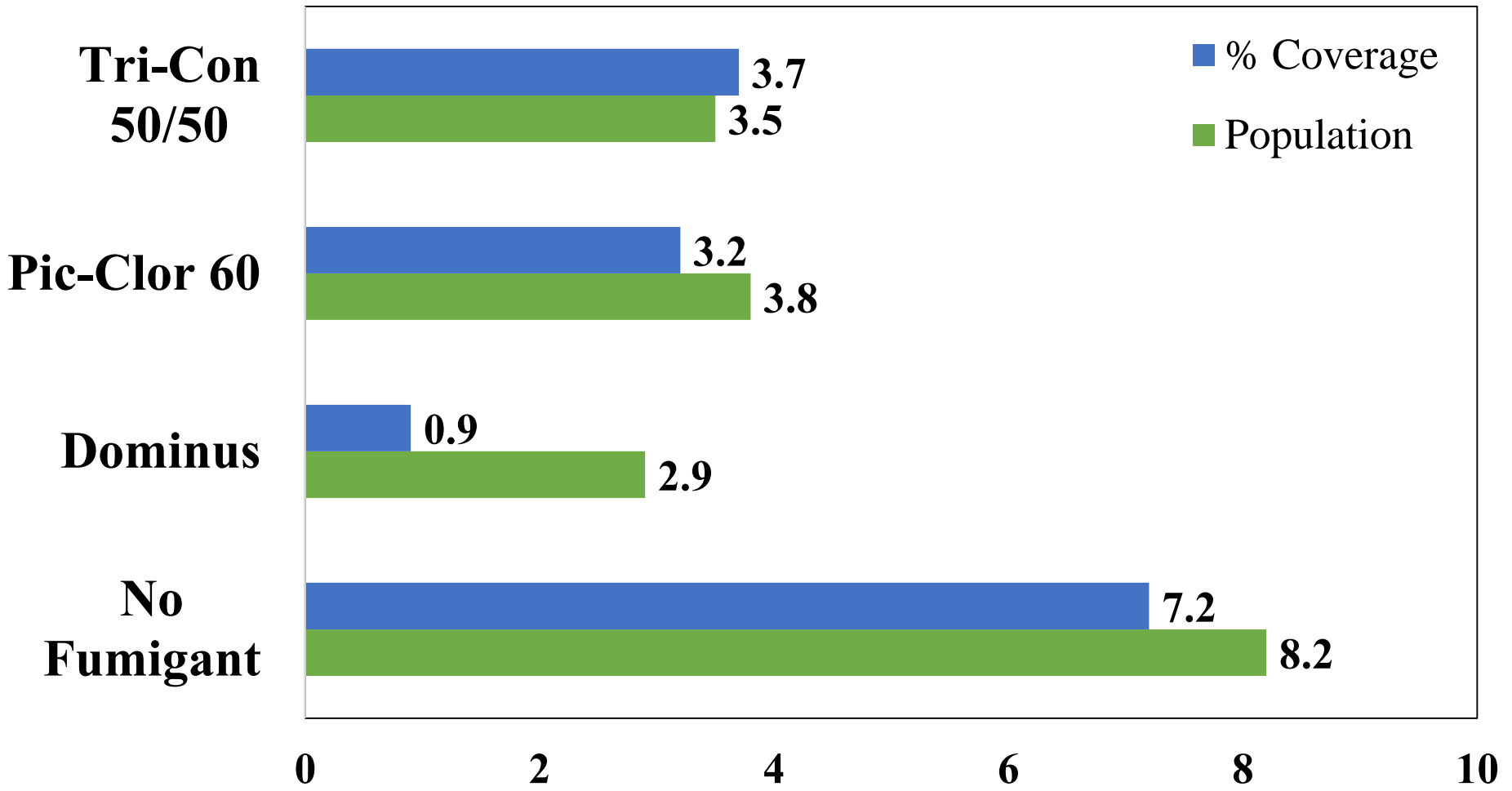


Weed Diversity

UTC	Dominus	Pic-Clor 60	Tri-Con 50/50
Malva	Malva	Malva	Malva
Sow thistle	Sow thistle	Sow thistle	Sow thistle
Chenopodium		Chenopodium	Chenopodium
Shepard's purse		Shepard's purse	Nightshade
Purslane		Purslane	
Stinging nettle		Stinging nettle	
Petty spurge		Petty spurge	
Unidentified grasses		Unidentified grasses	
Nightshade			

Weed Population and % Coverage

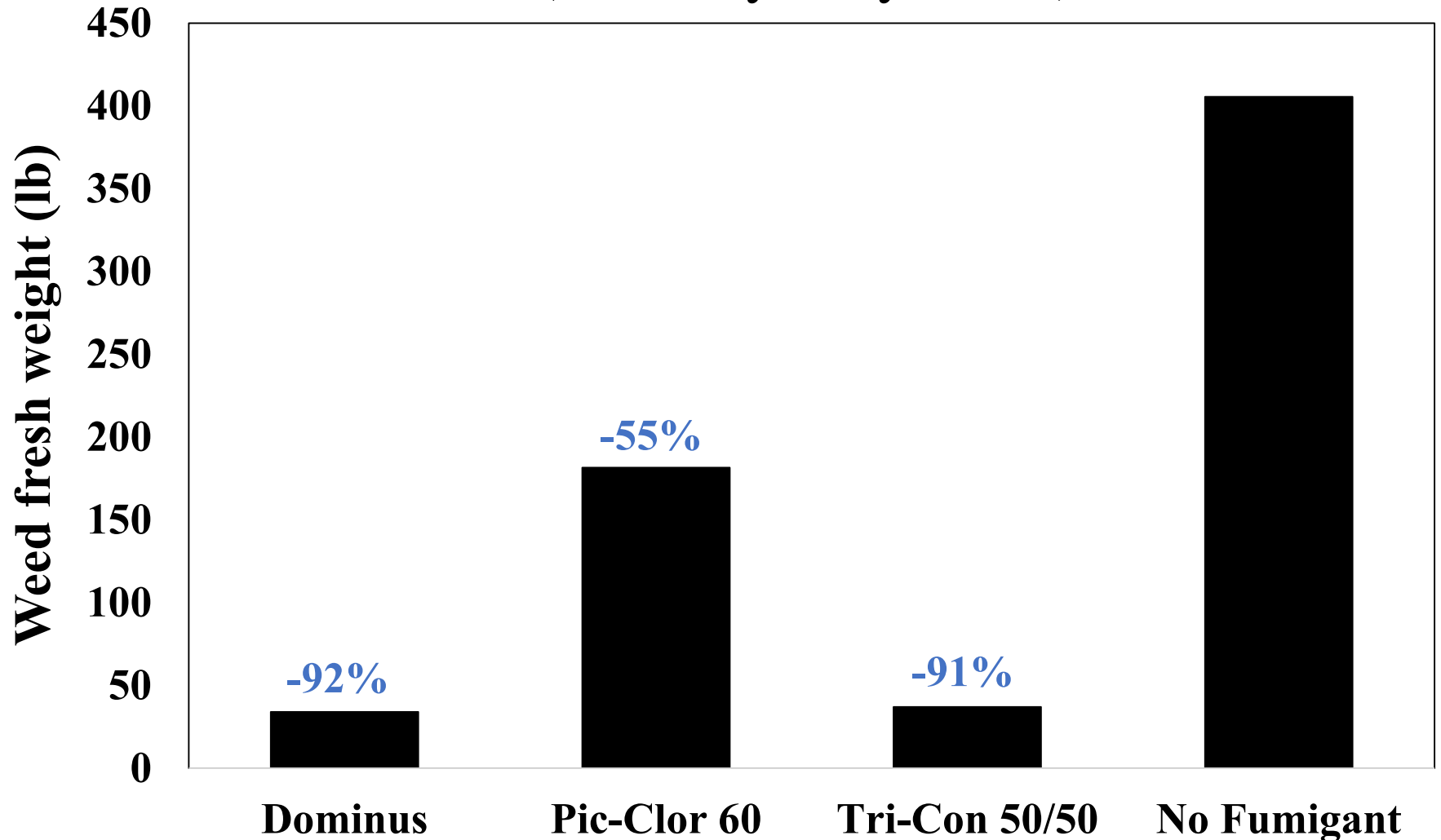
(December 2014 thru March 2015)



Weed population and % coverage per 4 ft²

Weed Fresh Weight

(February-May, 2015)



March 6, 2015



August 3, 2015

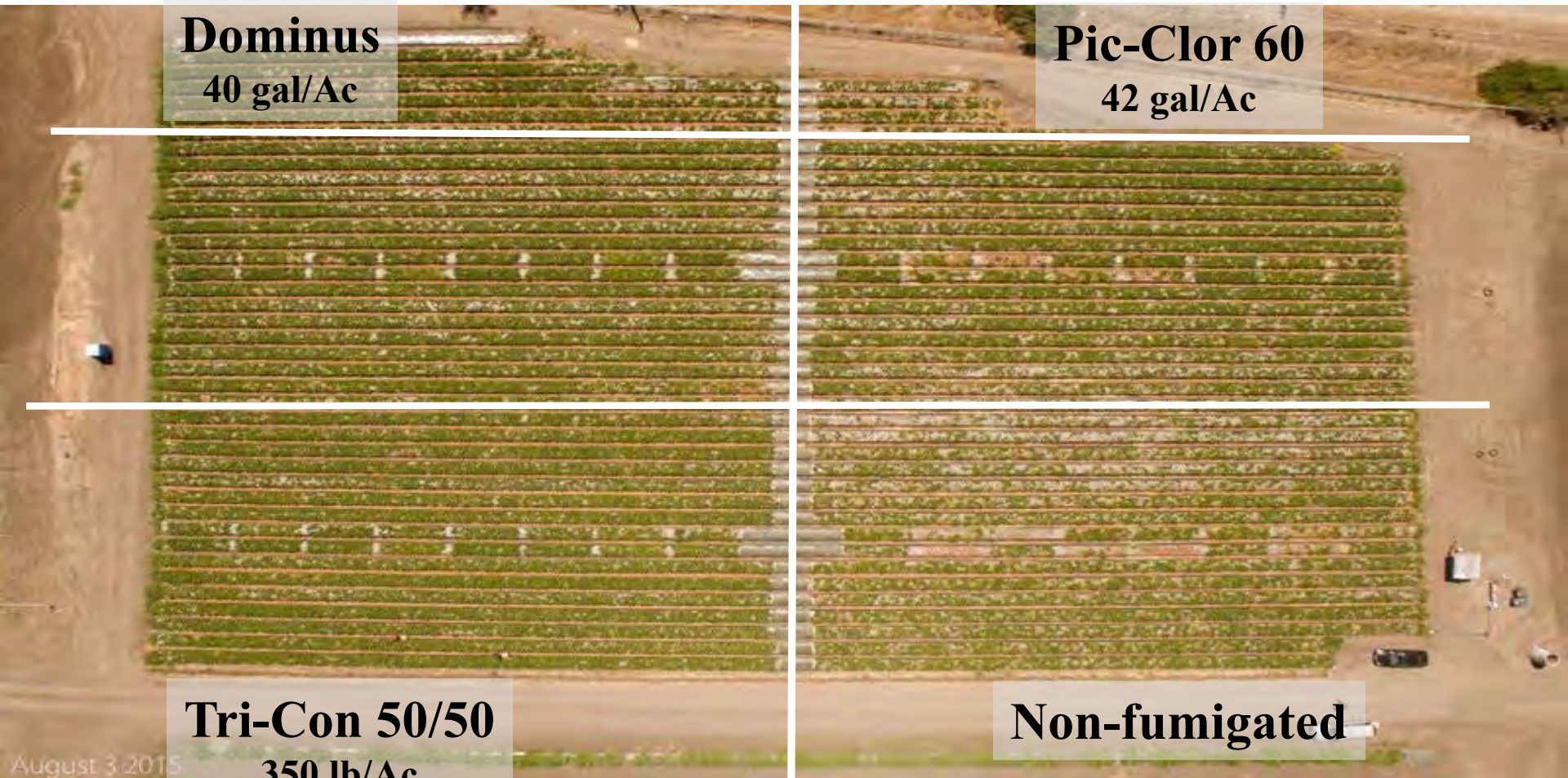
Dominus
40 gal/Ac

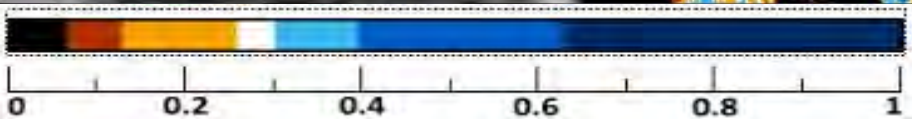
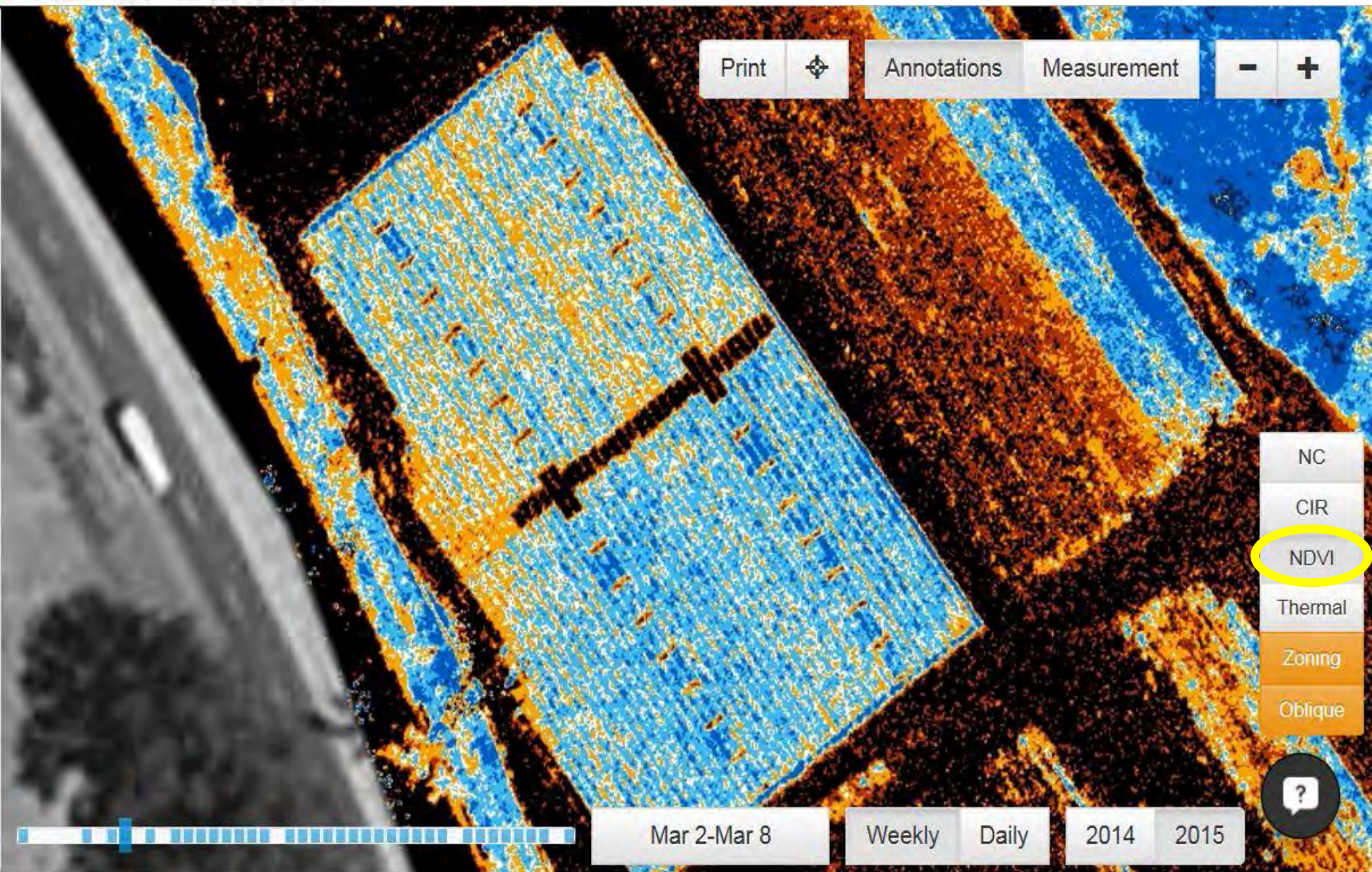
Pic-Clor 60
42 gal/Ac

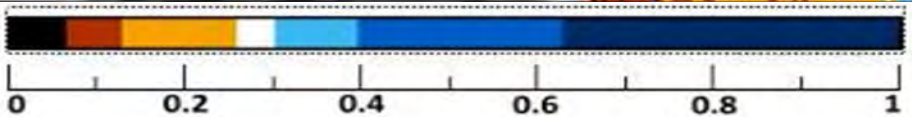
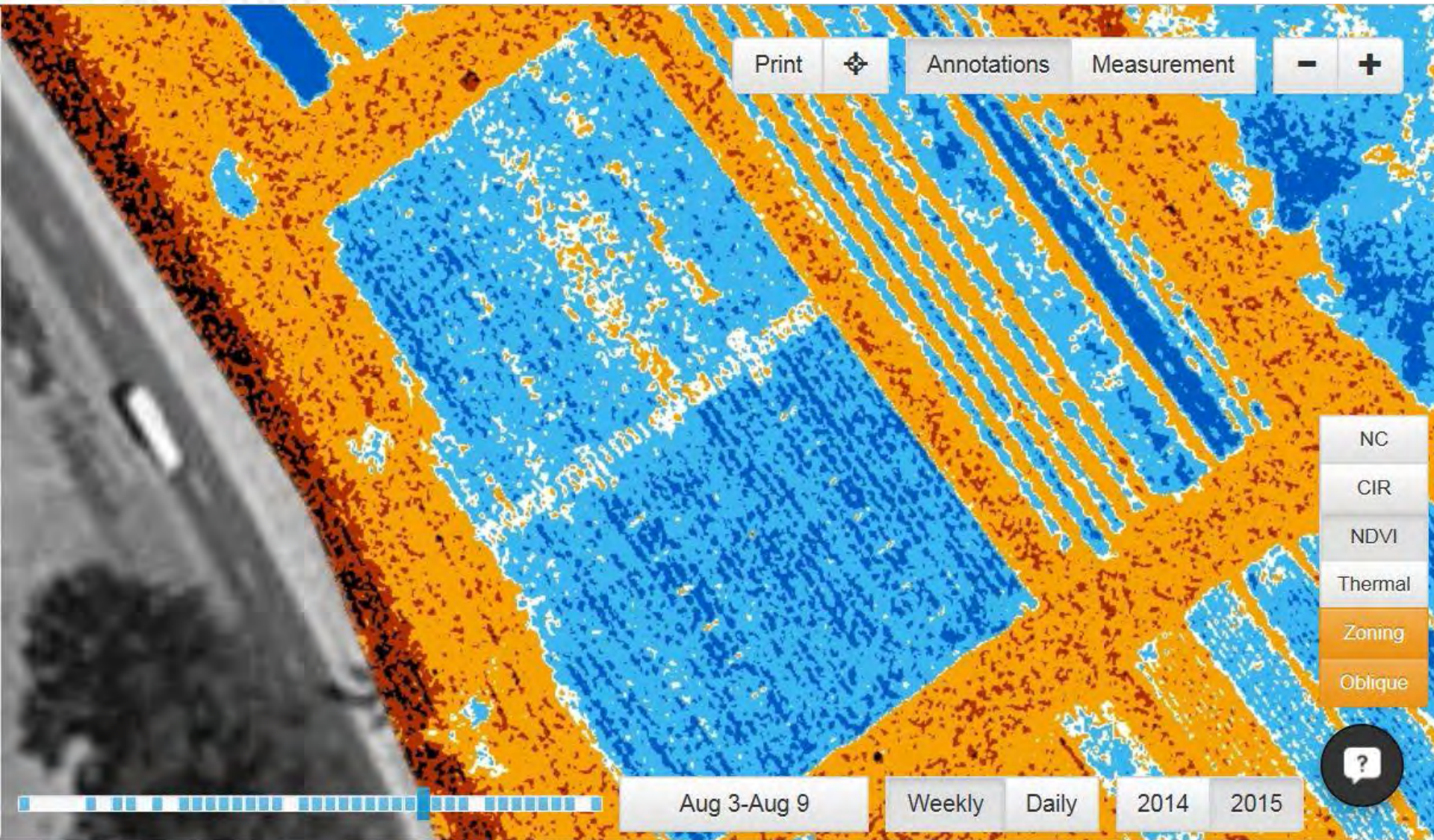
Tri-Con 50/50
350 lb/Ac

Non-fumigated

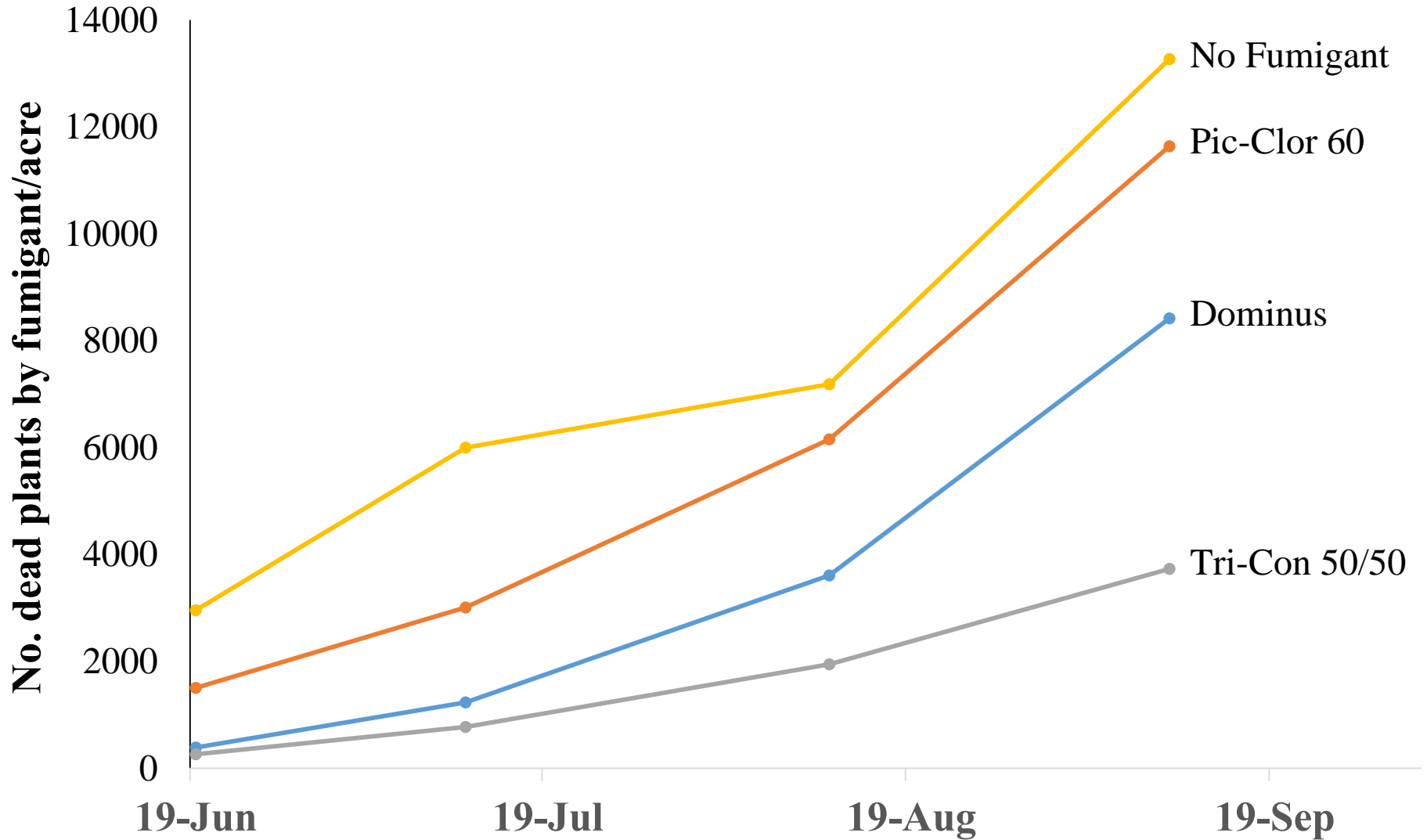
August 3, 2015



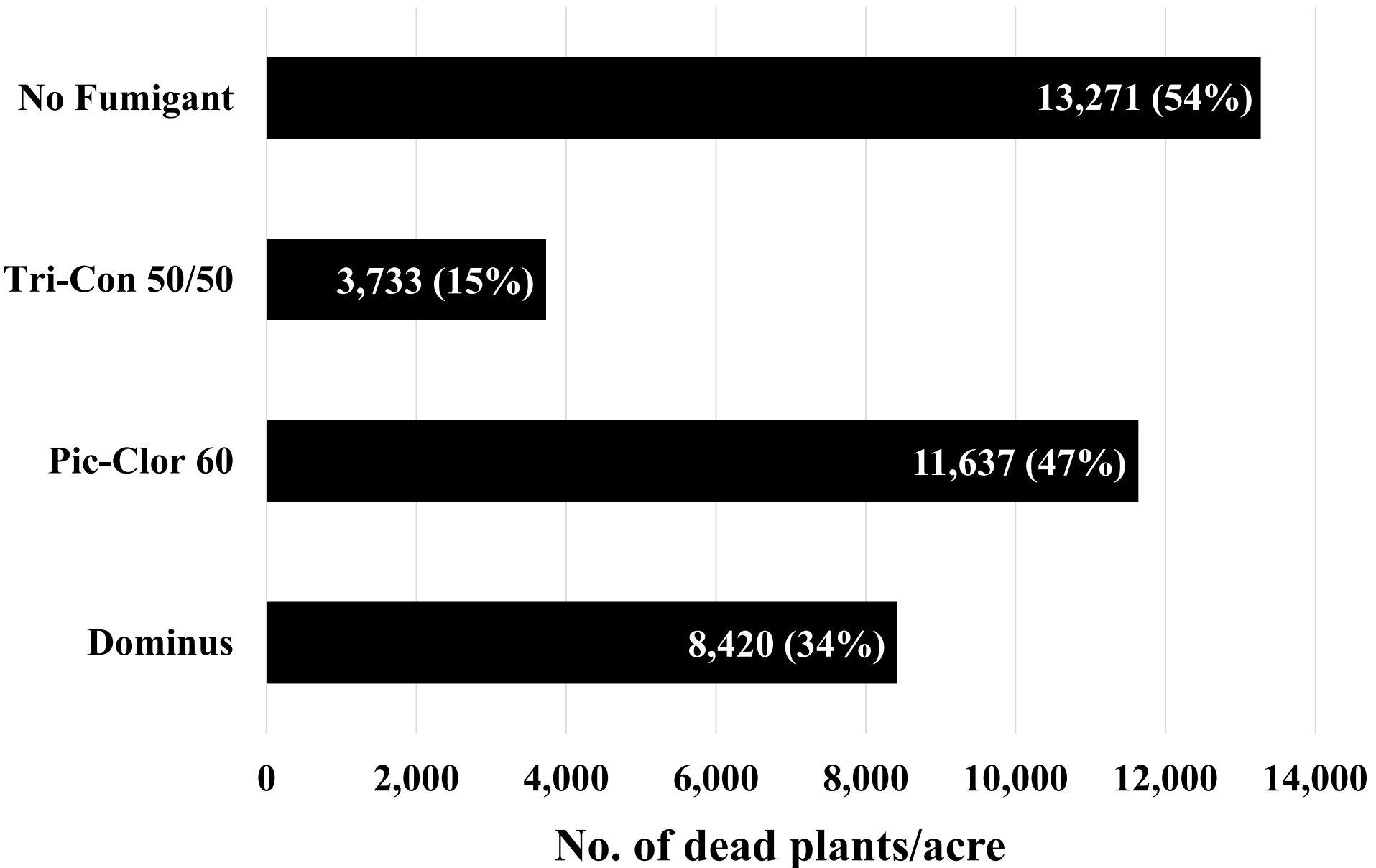




Plant Mortality

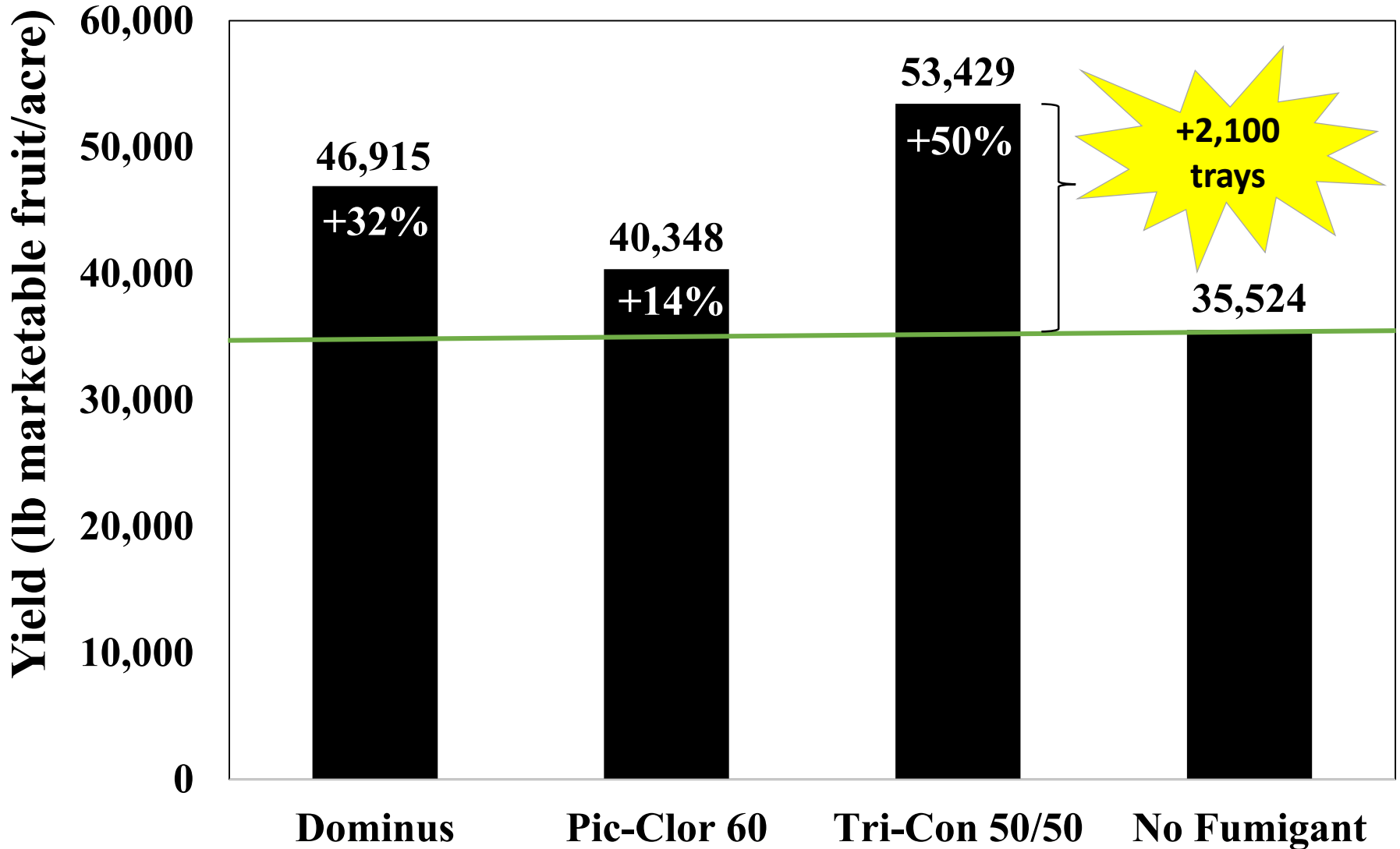


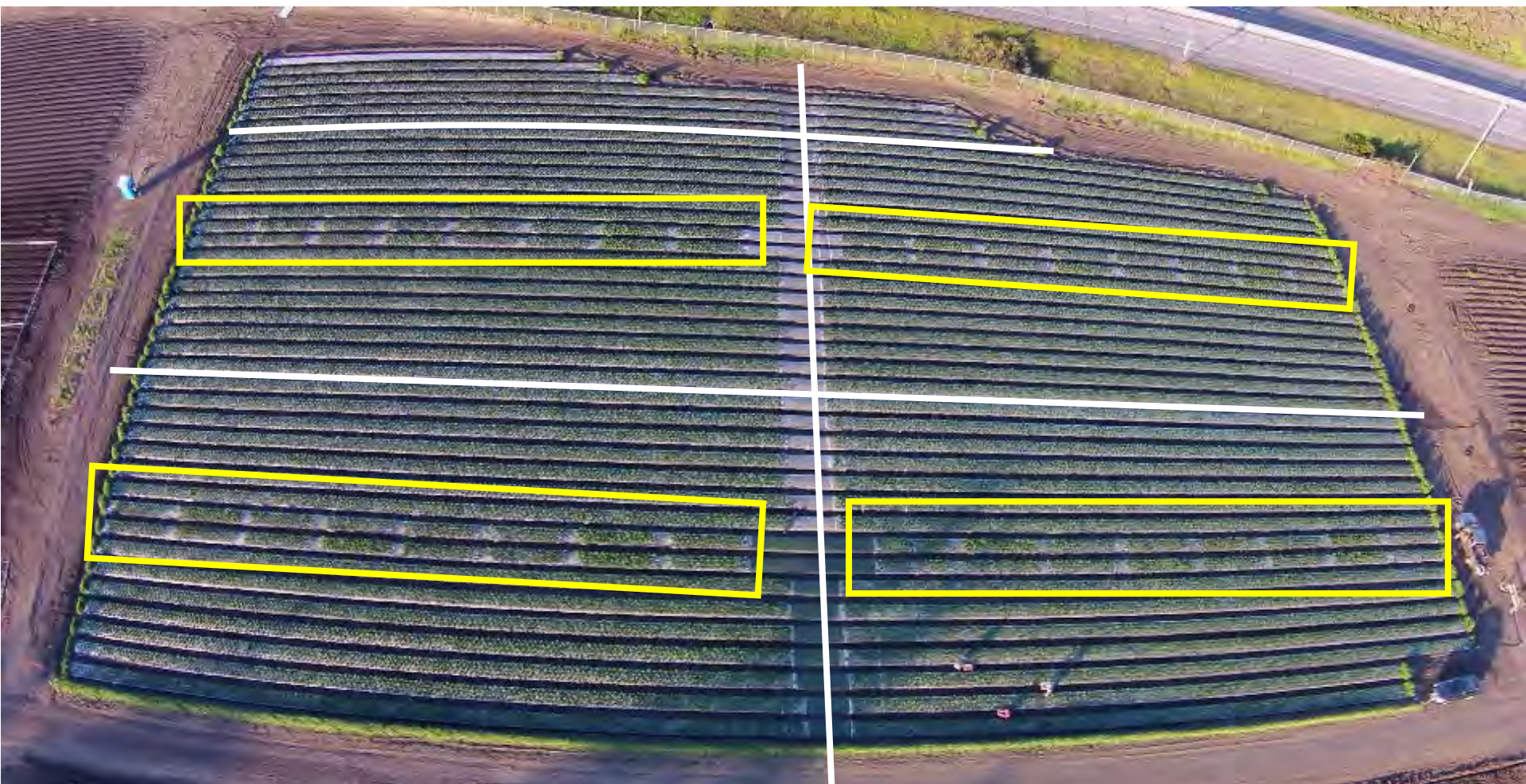
Final Plant Mortality (Sep2015)



Yield by Fumigant

(February 11-August 26, 2015)

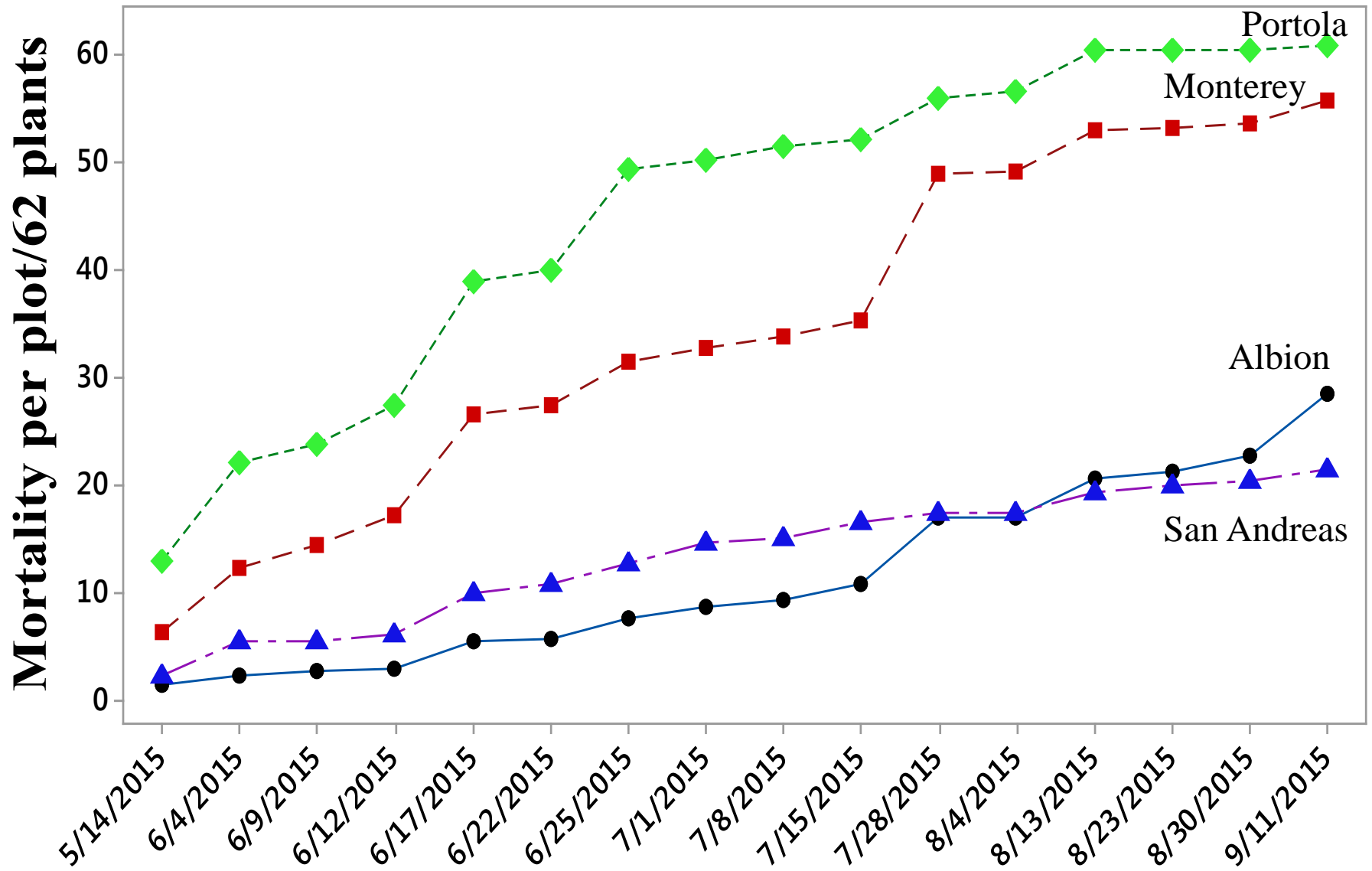




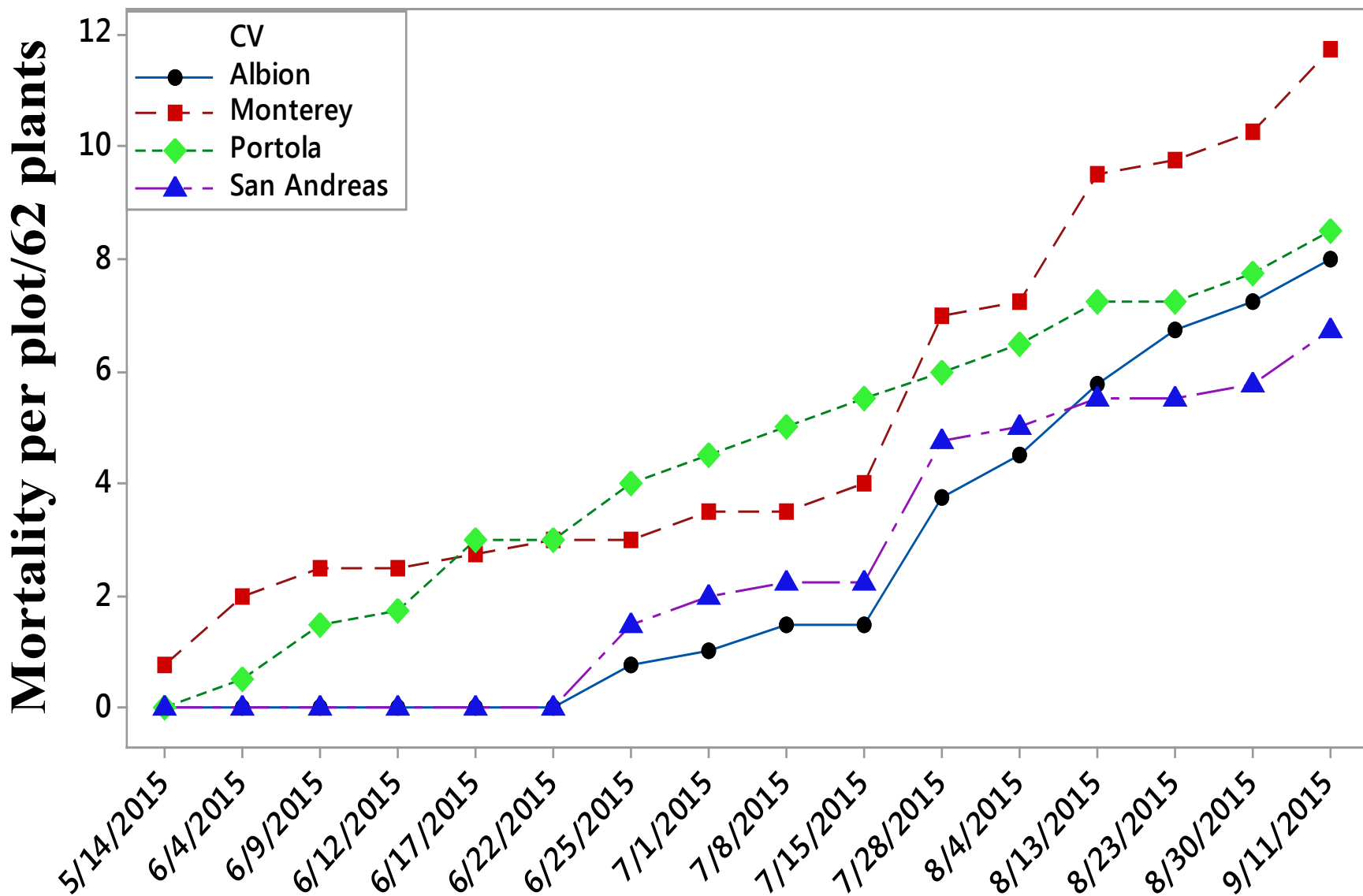
Replicated Variety Trial

Albion
San Andreas
Monterey
Portola

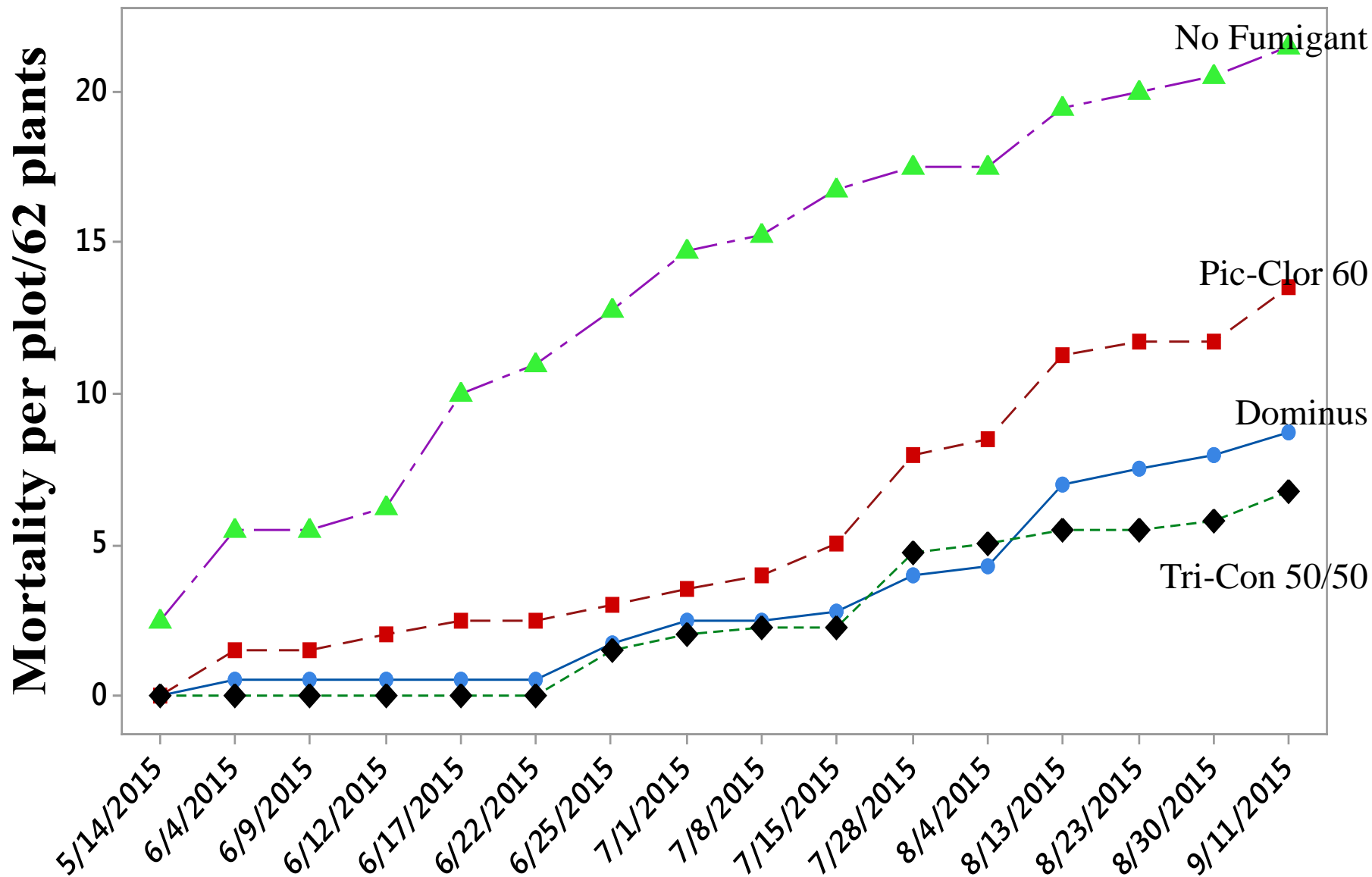
No Fumigant Mortality



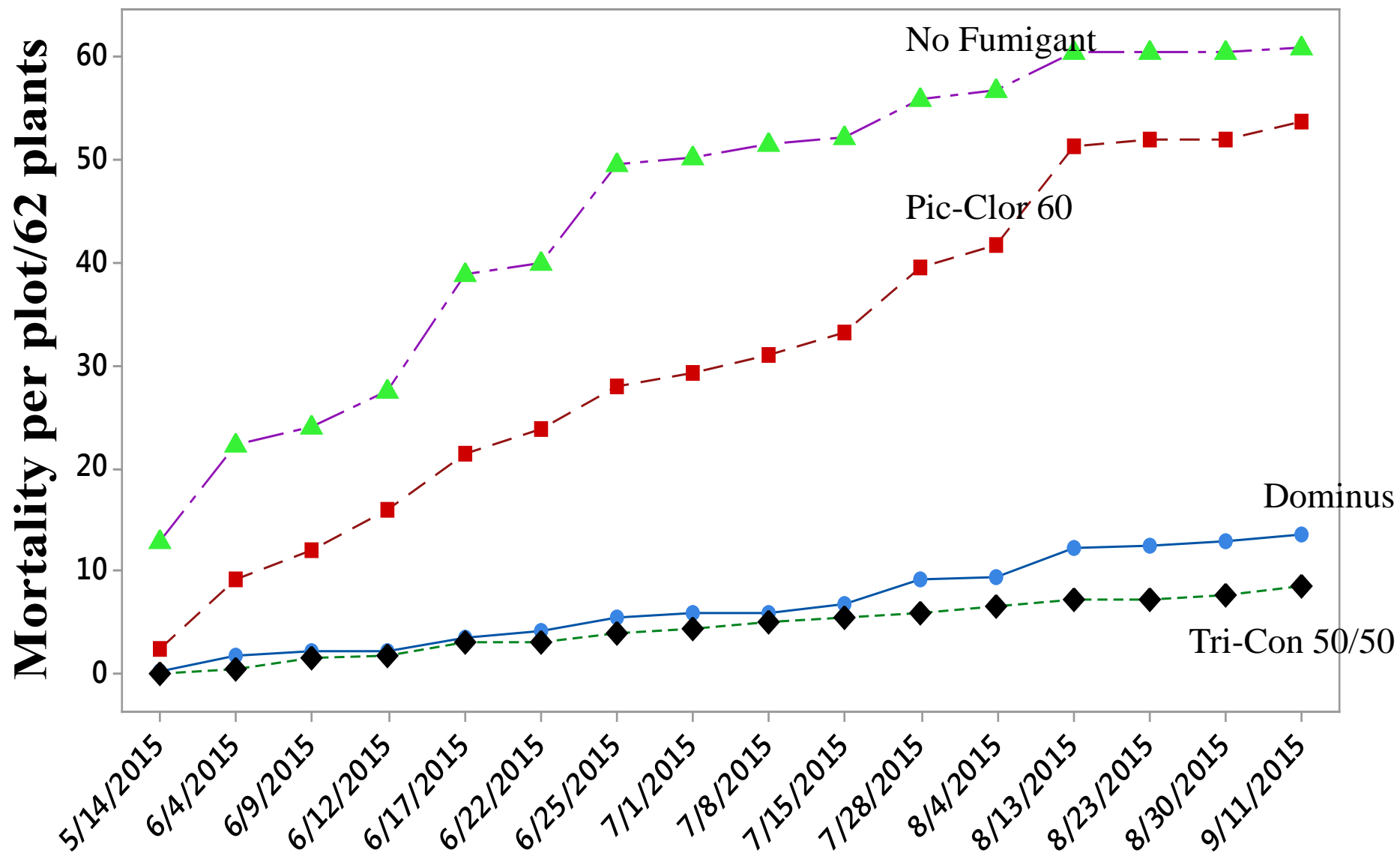
Tri-Con 50/50 Mortality

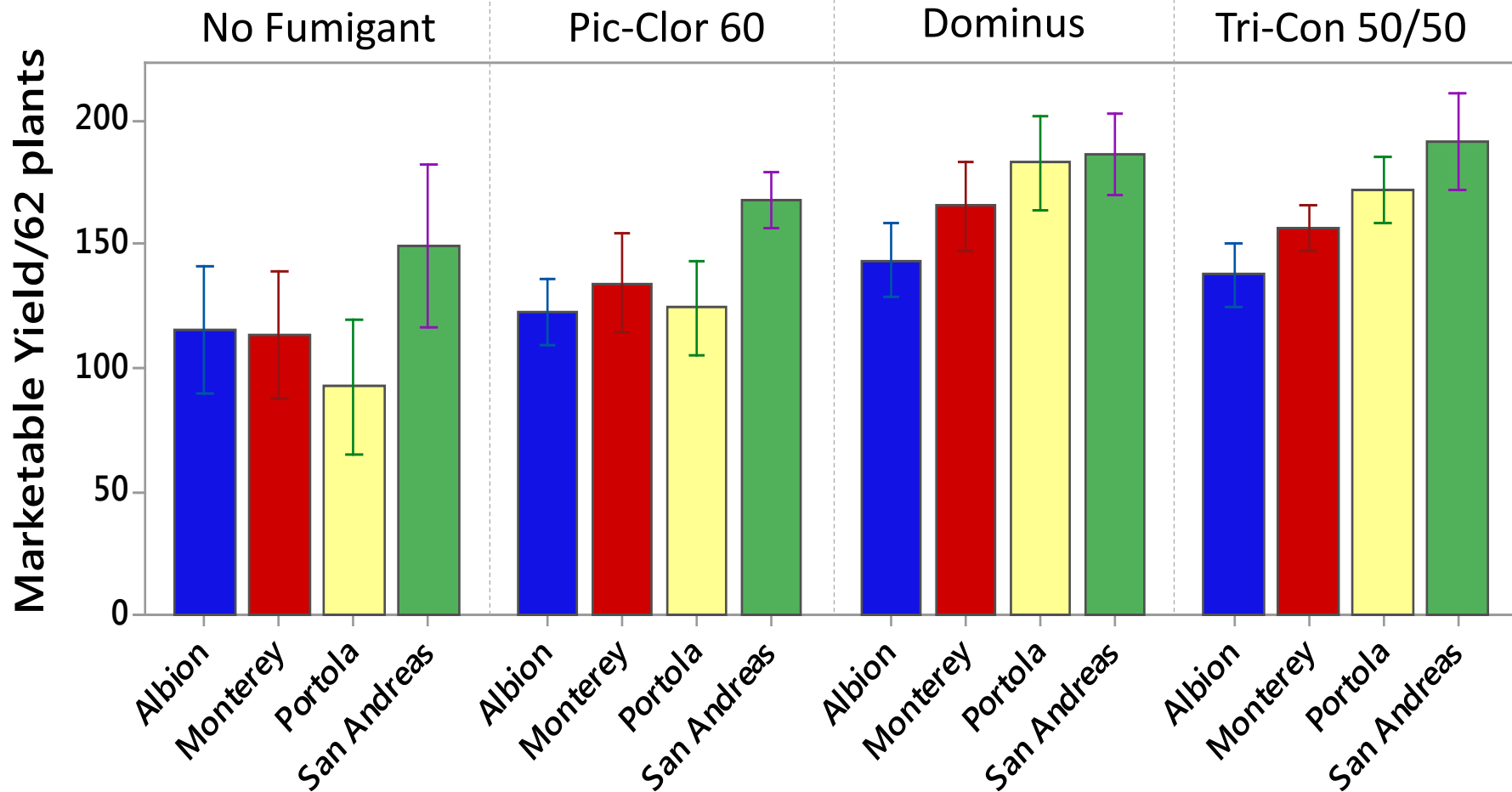


San Andreas Mortality



Portola Mortality





September 2, 2015



San Andreas

Albion

Portola

Monterey

Breeder Score

Cultivar	<i>Verticillium-resi</i>	Score based on this exp't	e
Albion	3.8	4.3	
Monterey	3.4	3.3	
San Andreas	3.8	4.2	
Portola	3.3	2.8	

[www.http://research.ucdavis.edu](http://research.ucdavis.edu)
resistance score 1-5, 5=best

1 year
1 location
1 disease

Conclusions

- Fumigation reduced Verticillium wilt
 - Tri-Con 50/50, followed closely by Dominus
 - Pic-Clor 60 a distant 3rd
- UC cultivars varied dramatically in response to Verticillium wilt
 - Portola highest susceptibility followed by Monterey
 - Albion and San Andreas exhibited good resistance

Acknowledgements



Sage Finch, PCA



L & G Farming



Crown Nursery