

# ASD vs Verticillium wilt

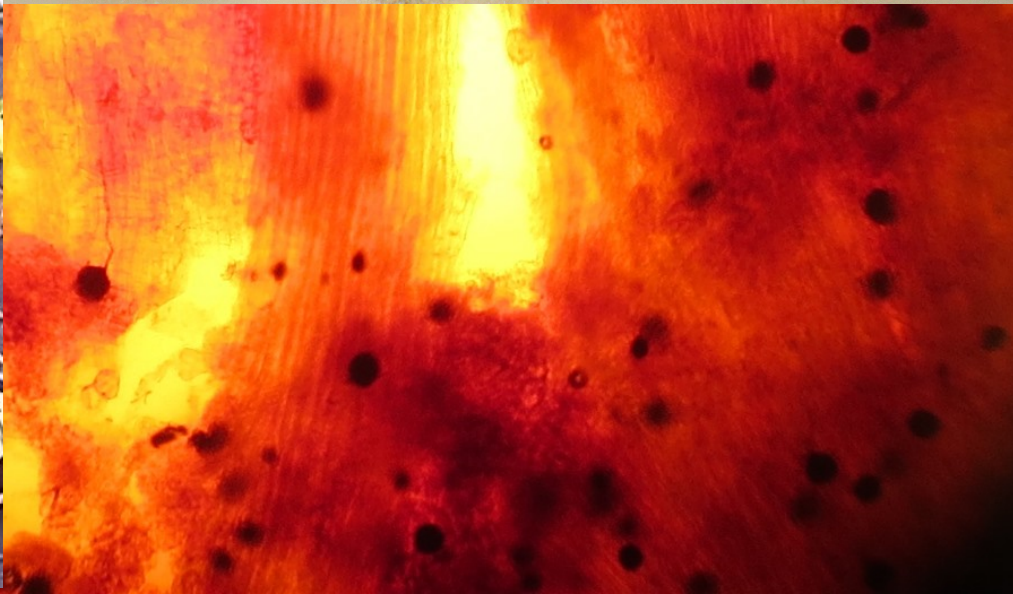
Kelly Ivors, Associate Professor  
Cal Poly Strawberry Center



**CAL POLY**  
Strawberry Center

1 mm







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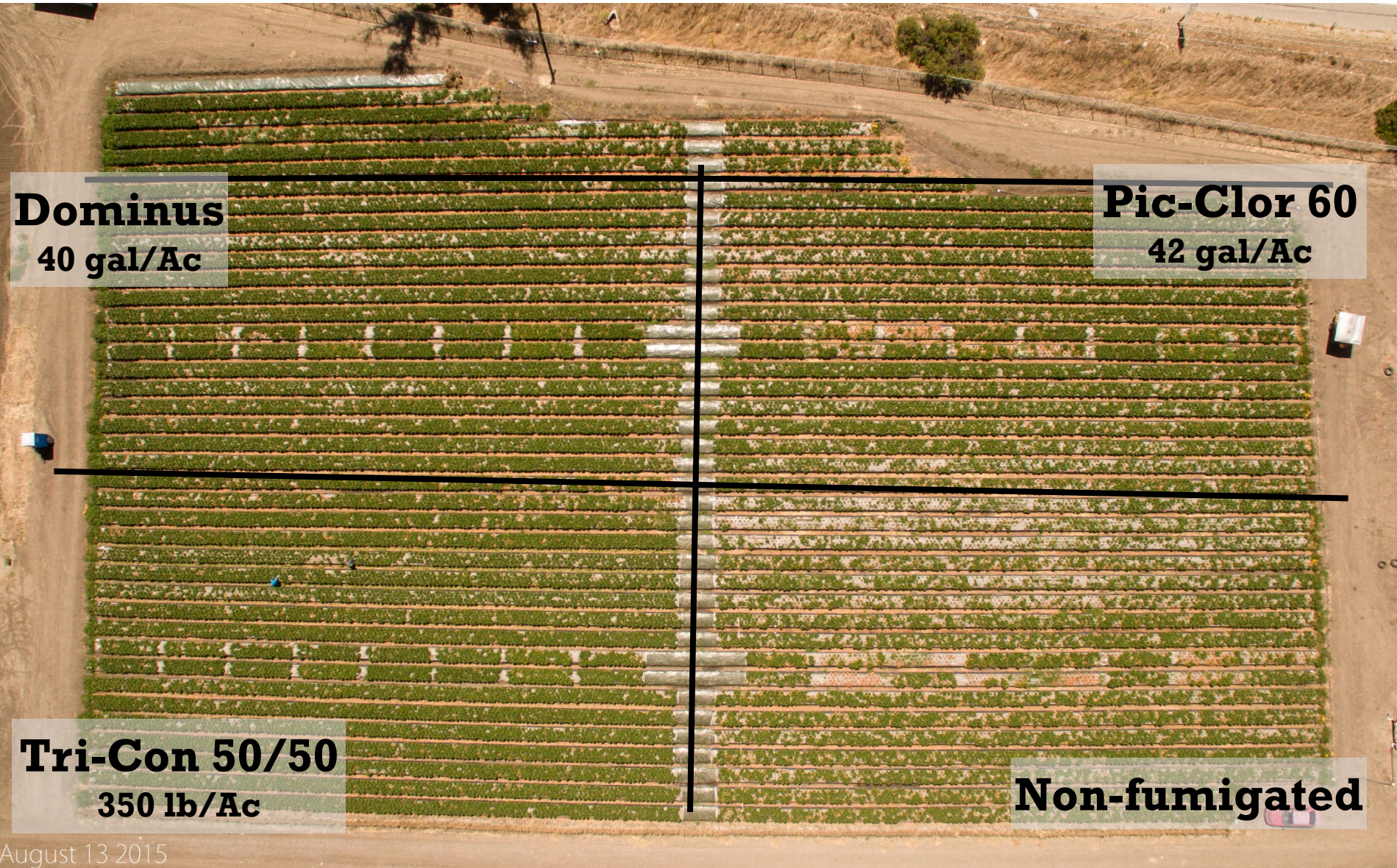
# Verticillium wilt (*Verticillium dahliae*)

- Broad host range (strawberry very susceptible)
- Problem in CA for decades
- Often problematic in organic fields w/ veg rotations





# Cal Poly Fumigation Trial: 2015



**Dominus**  
40 gal/Ac

**Pic-Clor 60**  
42 gal/Ac

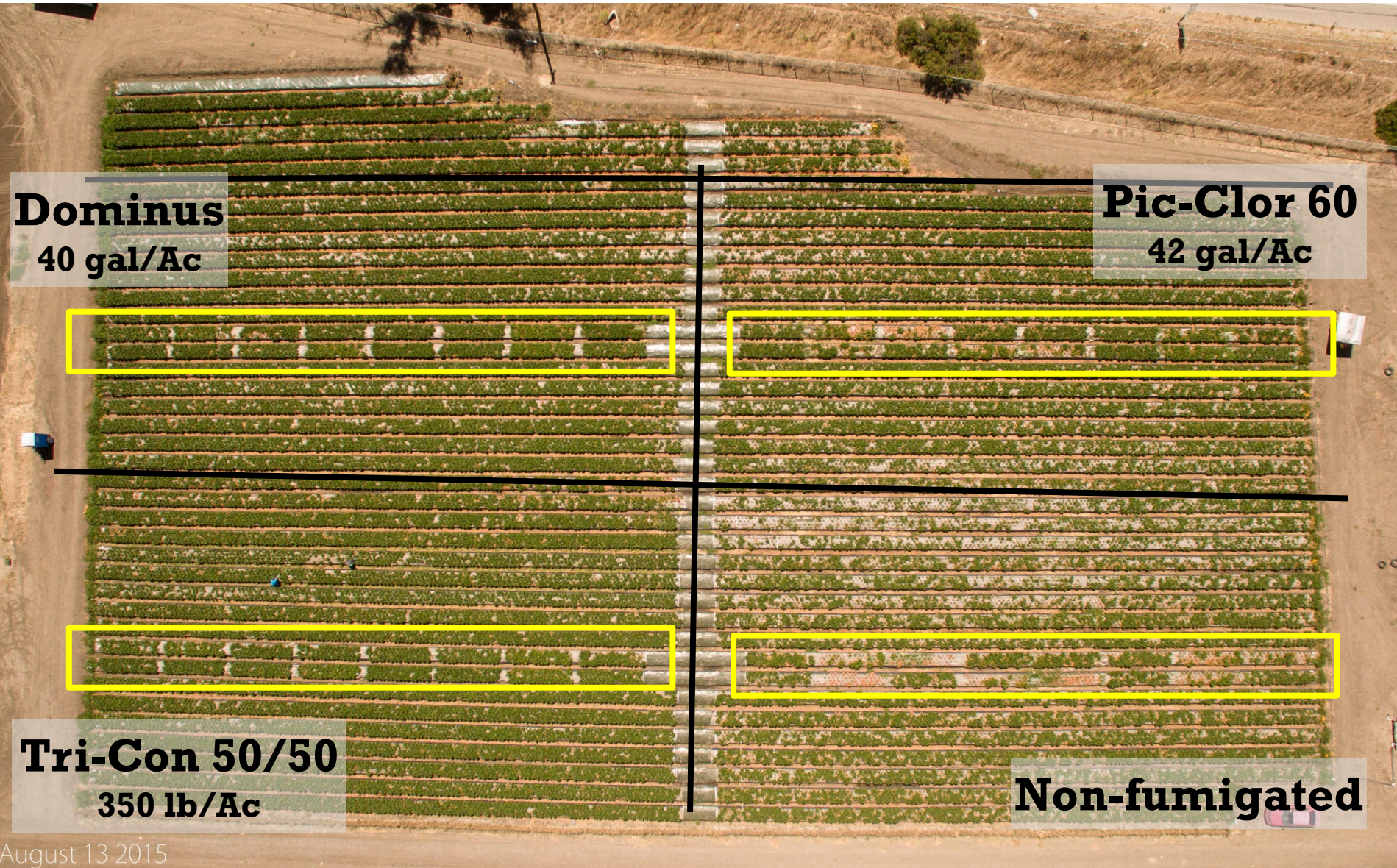
**Tri-Con 50/50**  
350 lb/Ac

**Non-fumigated**

August 13 2015



# Cal Poly Cultivar Trial: 2015





# Cal Poly Cultivar Trial: 2015



San Andreas

Albion

Portola

Monterey



# Cal Poly Cultivar Trial: 2015



San Andreas

Albion

Cultivar	Disease incidence (% plant mortality) <sup>z</sup>		AUDPC <sup>y</sup>	Yield (g/plant) <sup>z</sup>		
	12 Jun	11 Sep		Early season <sup>xz</sup>	Late season <sup>vz</sup>	Total <sup>uz</sup>
Portola.....	44.4 a	98.4 a	8536.3 a	652.6 c	21.9 b	674.5 c
Monterey.....	27.8 ab	89.9 a	6572.5 b	759.3 b	69.6 b	828.9 b
Albion.....	4.8 c	46.0 b	2409.6 c	709.2 bc	136.5 a	845.7 b
San Andreas.....	10.1 bc	34.7 b	2623.4 c	923.5 a	170.9 a	1094.4 a
<i>P Values</i>	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001



Portola

Monterey





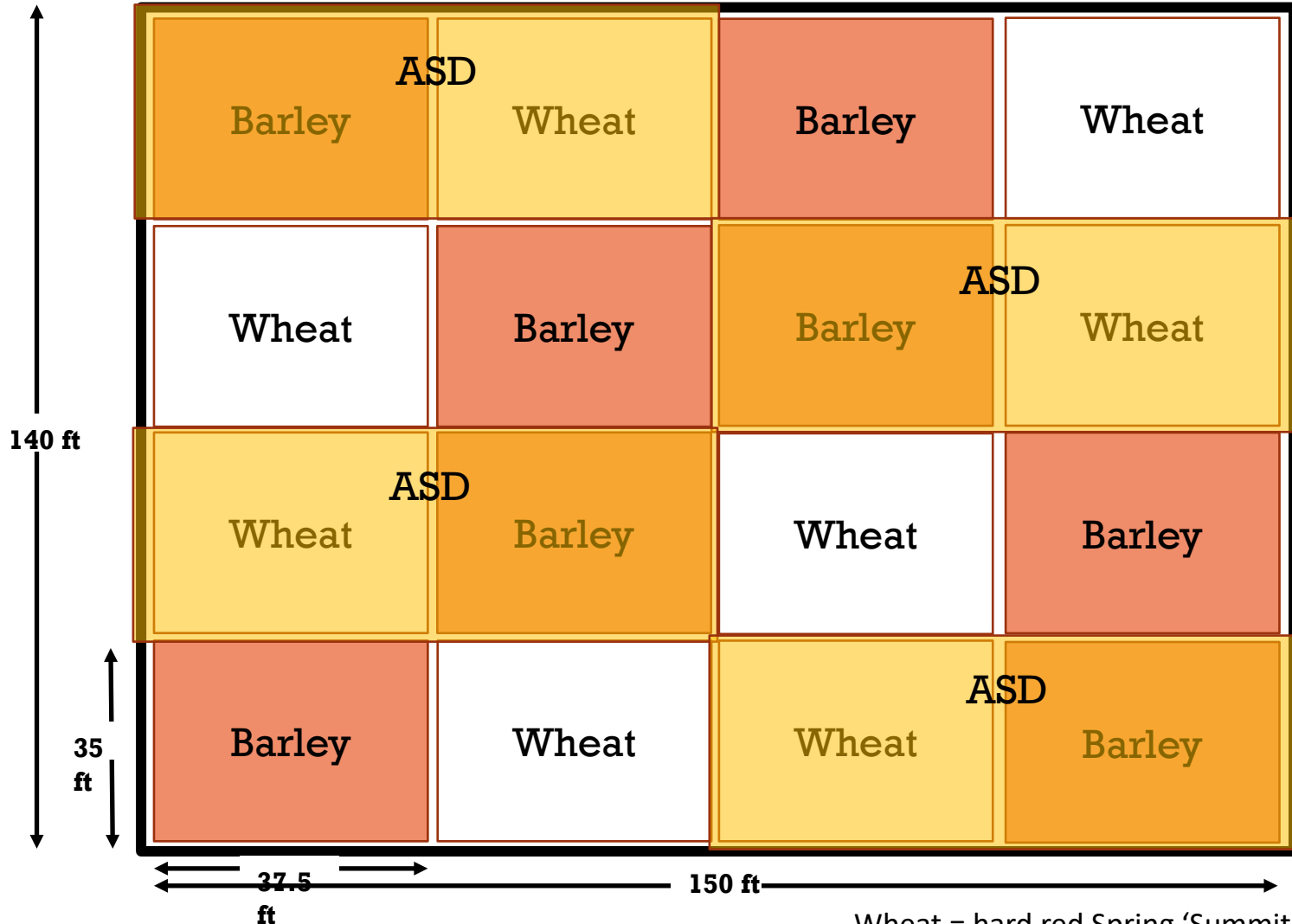
# Verticillium wilt cultivar trial: 2017

90 different cultivars  
and elite selections





# Verticillium wilt ASD/cover crop trial: 2016



Field seeded: 3 Dec 2015; Seeding rate: 100 lb/acre

Wheat = hard red Spring 'Summit 515'  
Barley = Stockford



# Verticillium wilt ASD/cover crop trial: 2016









# Verticillium wilt ASD/cover crop trial: 2016





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June 10, 2016



# Verticillium wilt ASD/cover crop trial: 2016



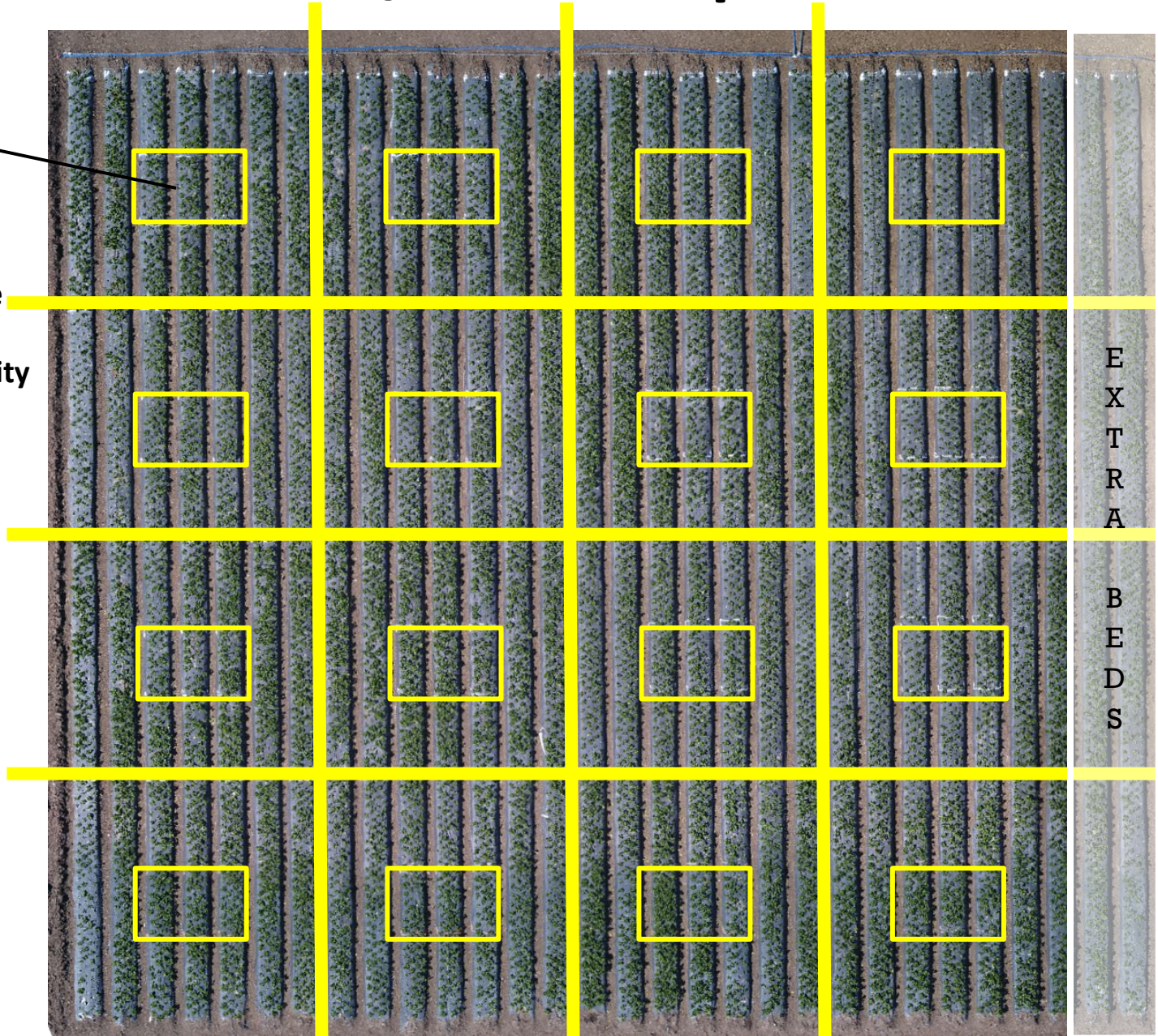
Portola (summer planting)



# Verticillium wilt ASD/cover crop trial: 2016

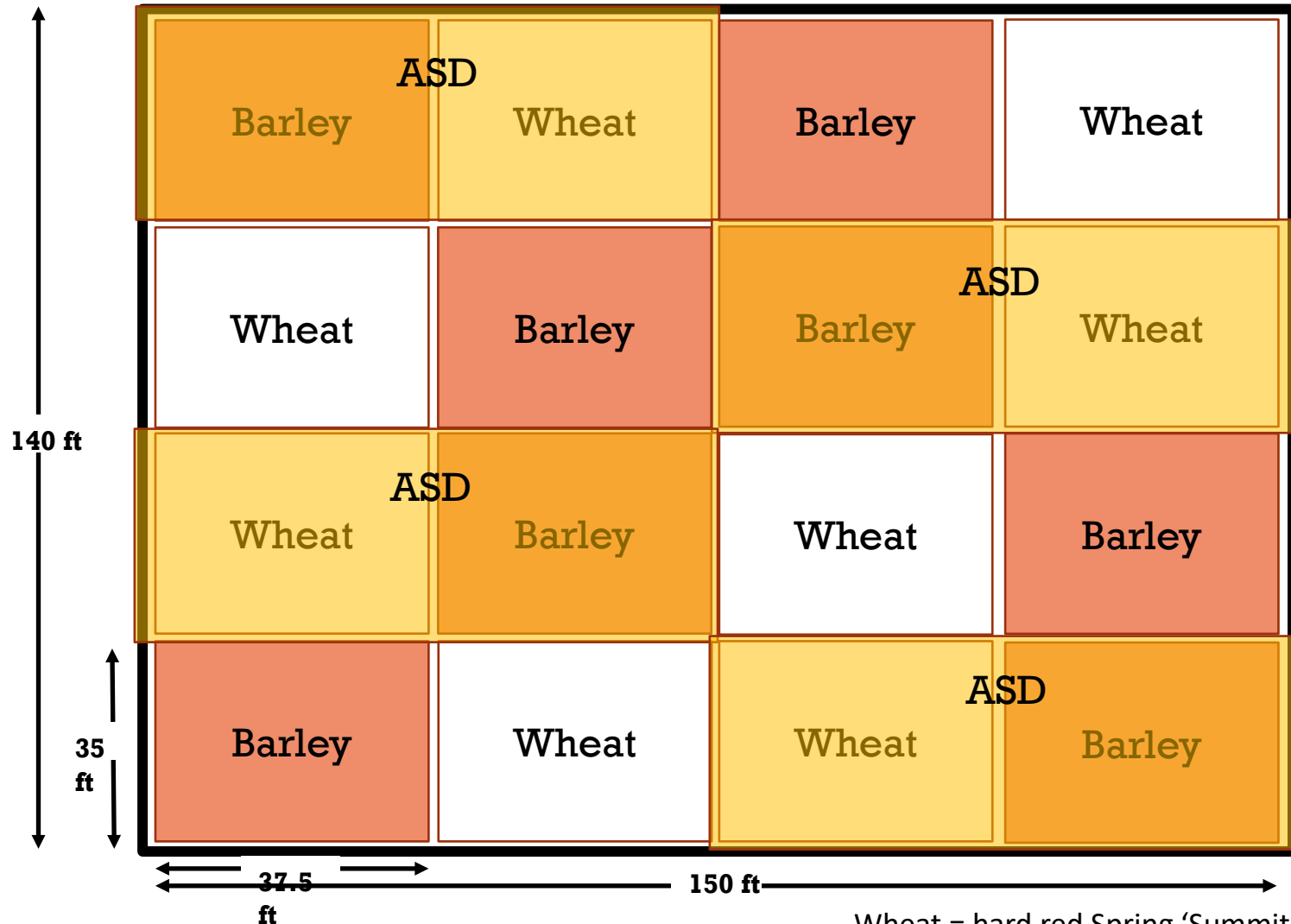
Data plot:

- Percent green foliage
- Percent plant mortality
- Verticillium counts
- Yield





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Field seeded: 3 Dec 2015; Seeding rate: 100 lb/acre

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# Verticillium wilt ASD/cover crop trial: 2016



Oct 6, 2016

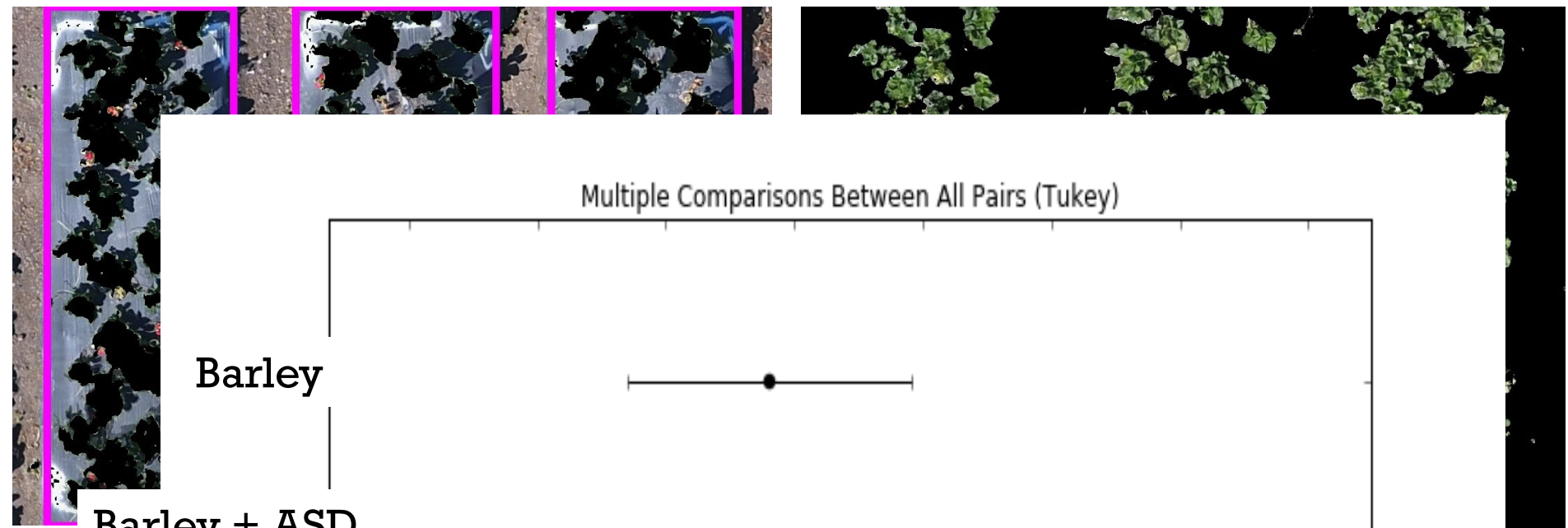


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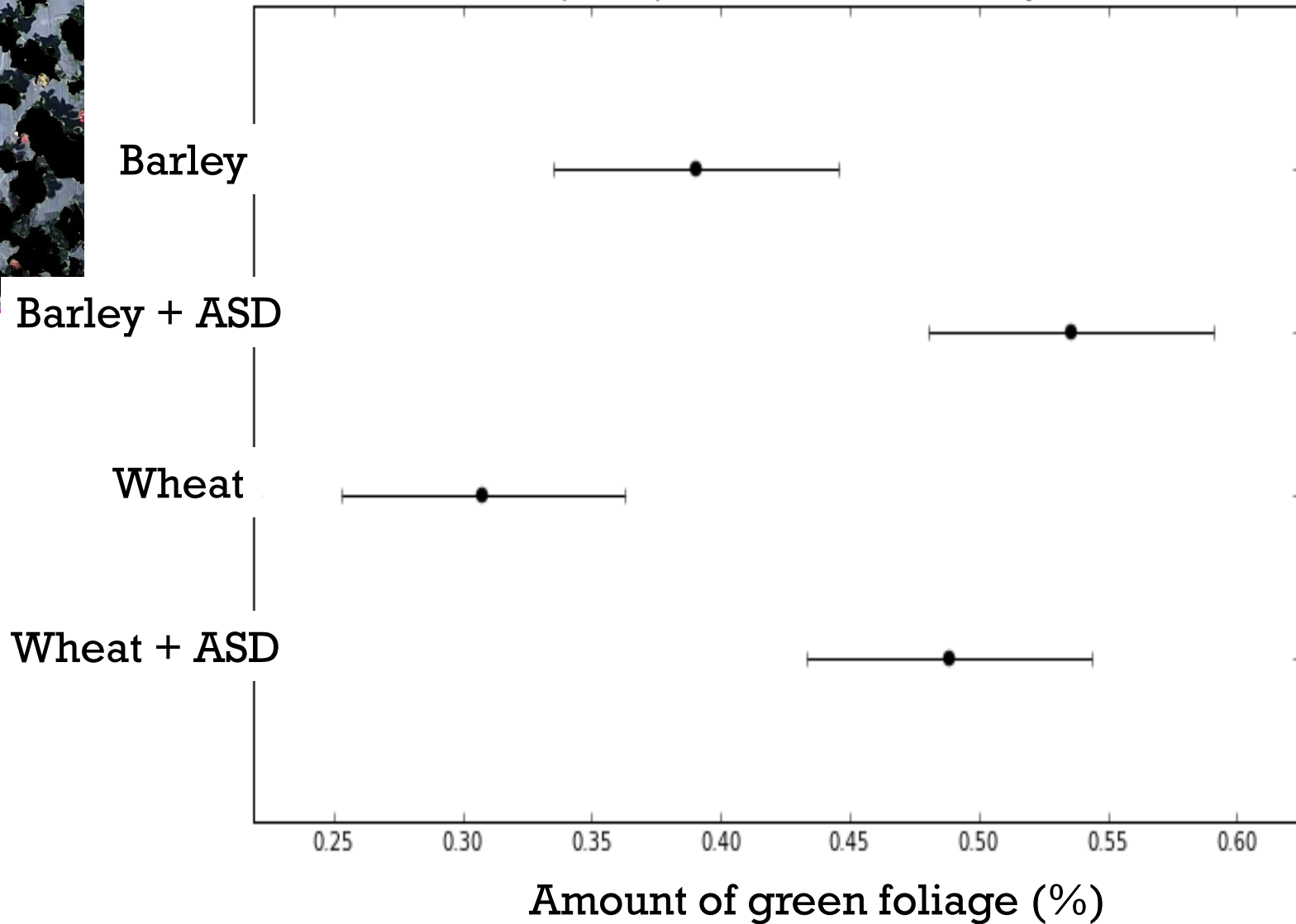


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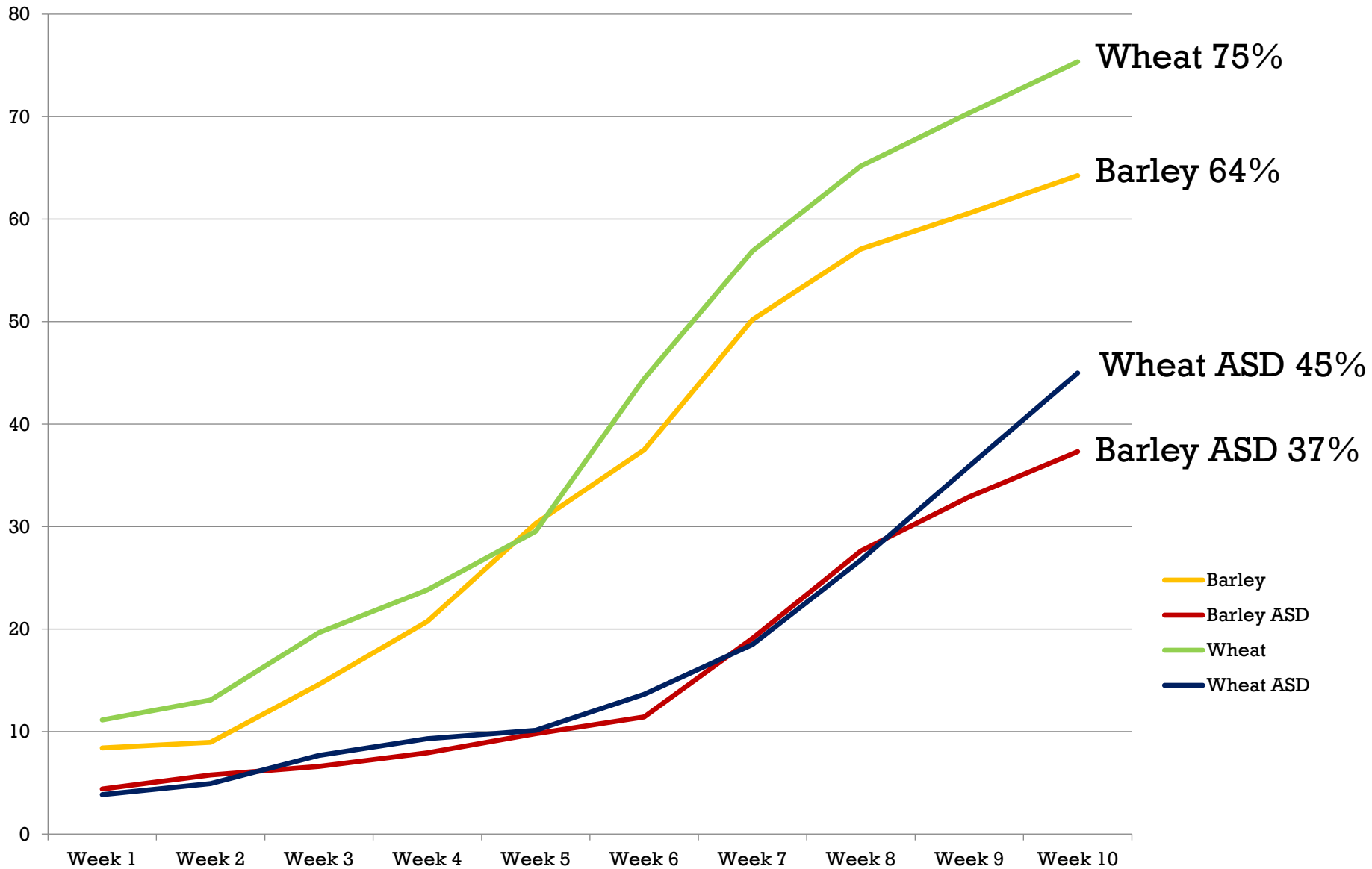


Multiple Comparisons Between All Pairs (Tukey)





# Percent plant death over 10 weeks

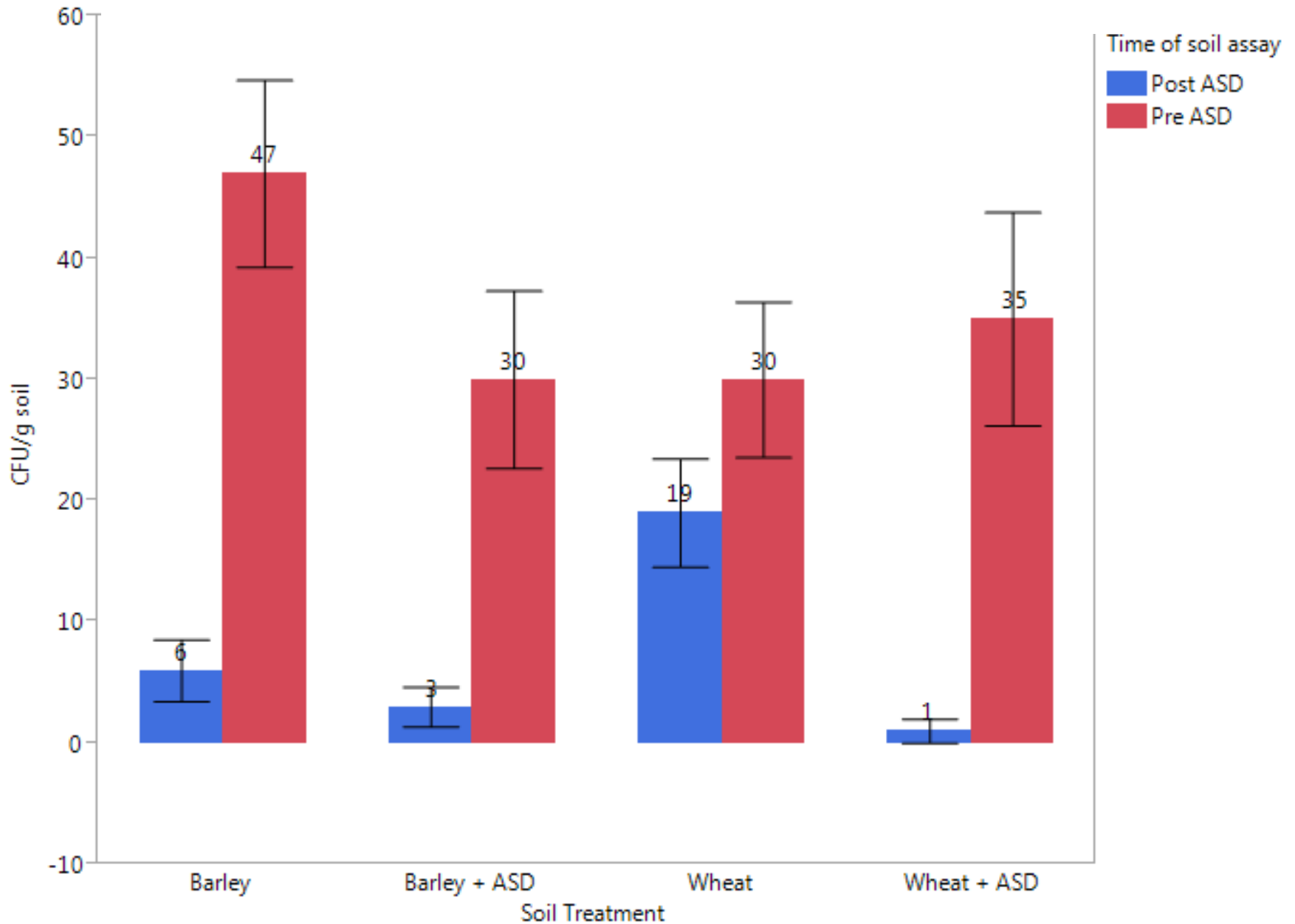






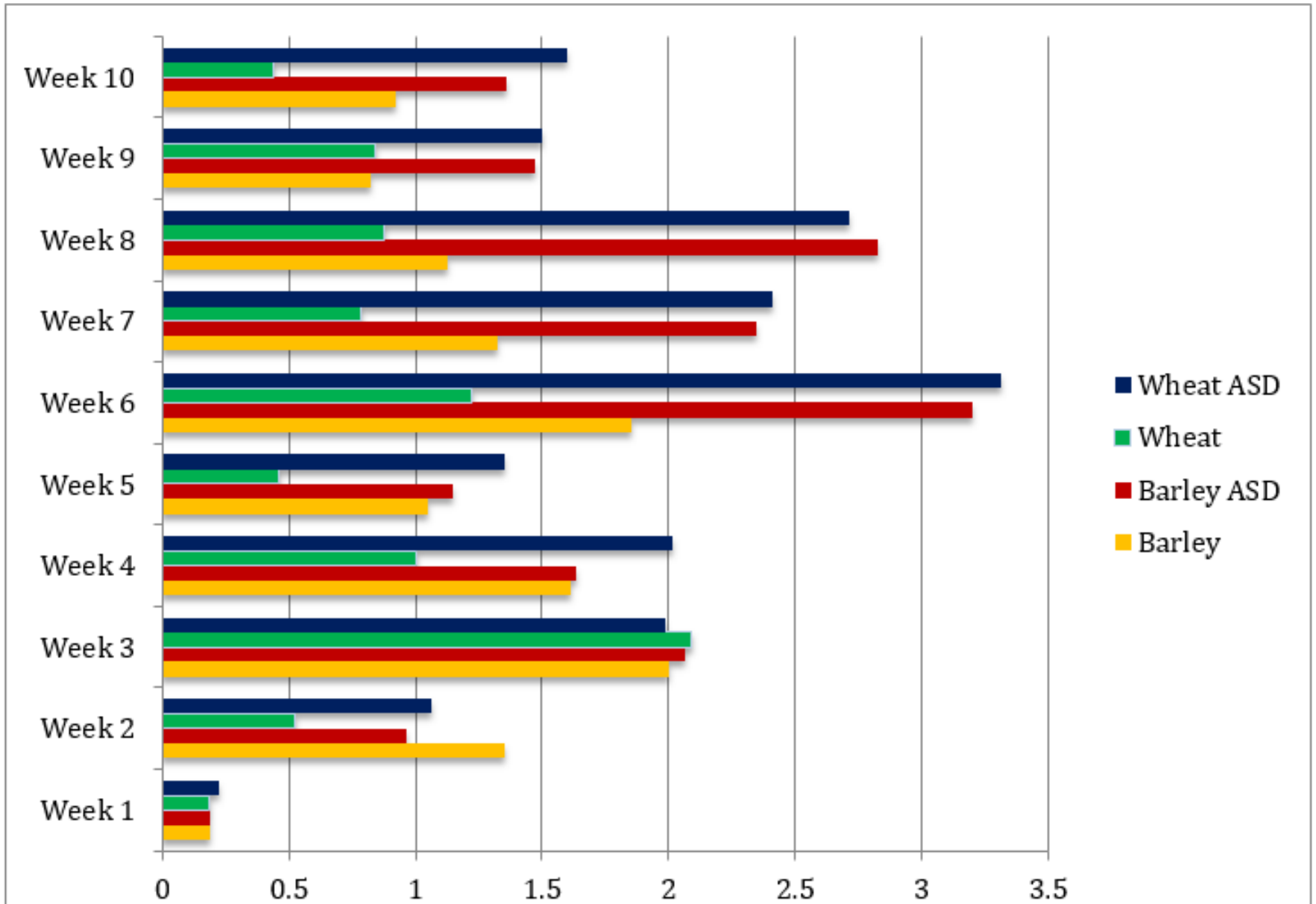


# Verticillium counts per gram of soil





# Pounds of strawberries per week





# Summary of ASD/cover crop trial: 2016

- Combining ASD with a cover crop was more effective at increasing yield and reducing plant death due to Verticillium;
- The most effective treatment was barley plus ASD; barley plus ASD had the lowest plant death and the highest yield;
- The most effective cover crop on its own was barley;
- All treatments reduced Verticillium counts in the soil.
- **Is 37% plant death after 10 weeks acceptable?**



**Questions?**

**Cal Poly Strawberry field day: July 27**

**Gerald Holmes, Ryan Brantley, Bo Lui, Jeremy Kerfs**

