Southern California Strawberry Research Update

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2012-2013: A Difficult Production Season in Southern California

Late Sept - early Oct: low chill hrs in High Elevation

High temps during plantation establishment

Initial plant growth was slow, but little or no die-out

7 frost/freeze events Dec-Mar: some crop losses

Heavy mite pressure in early Spring (Oxnard)

High incidence of albino fruit

Poor fruit quality, mixed market conditions after Easter

A short season for some growers

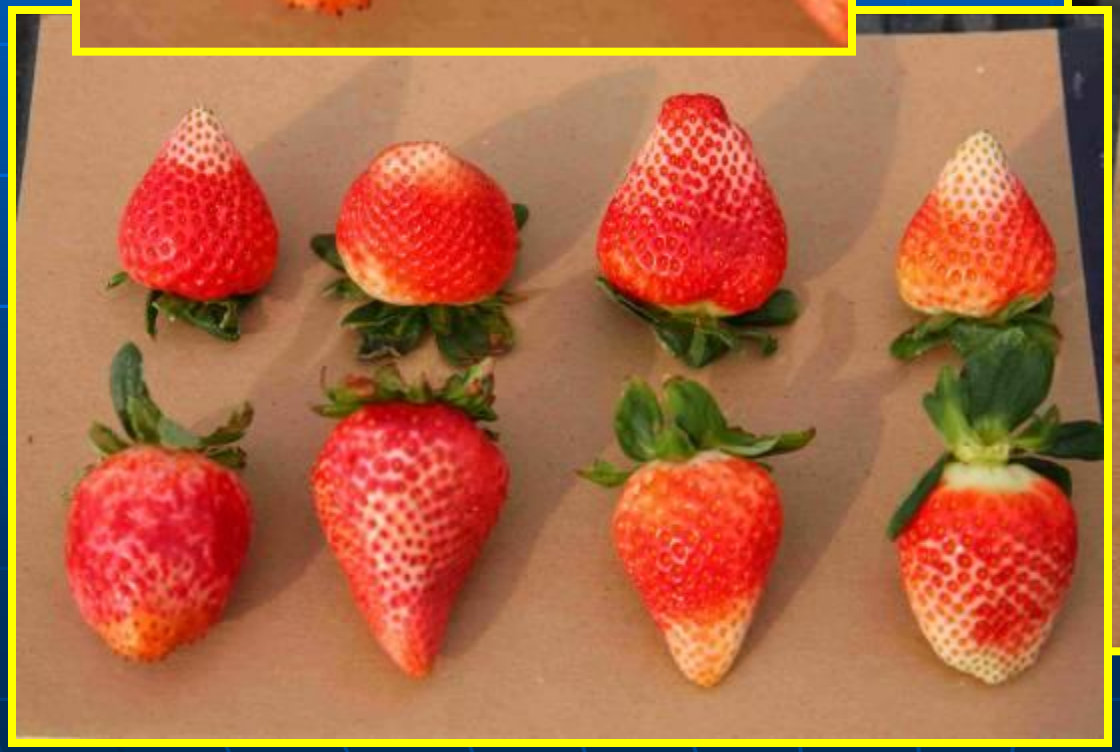
Statewide Acreage Trends 2012-13

Watsonville/Salinas : steady
Santa María : increasing
Oxnard : decreasing
OC : decreasing

Oxnard competes
directly with Mexico and Florida

Some long-time Oxnard growers
are no longer in the deal

Relatively high incidence of Albino fruit



Oxnard April 18, 2013

Heavy mite pressure

Oxnard
April 18, 2013

Mowing fields at peak yield

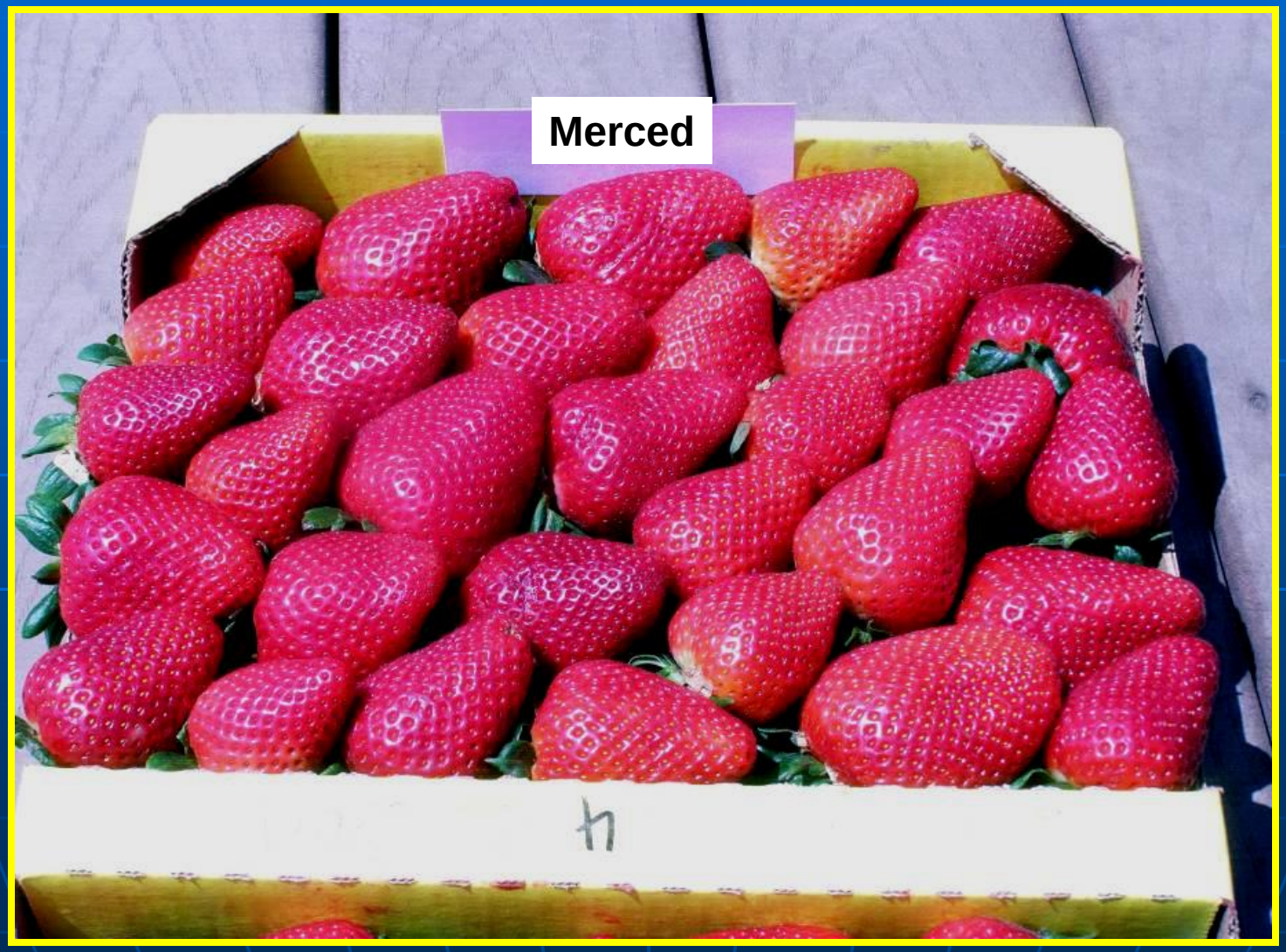
Poor quality fruit

New short-day cultivar Merced

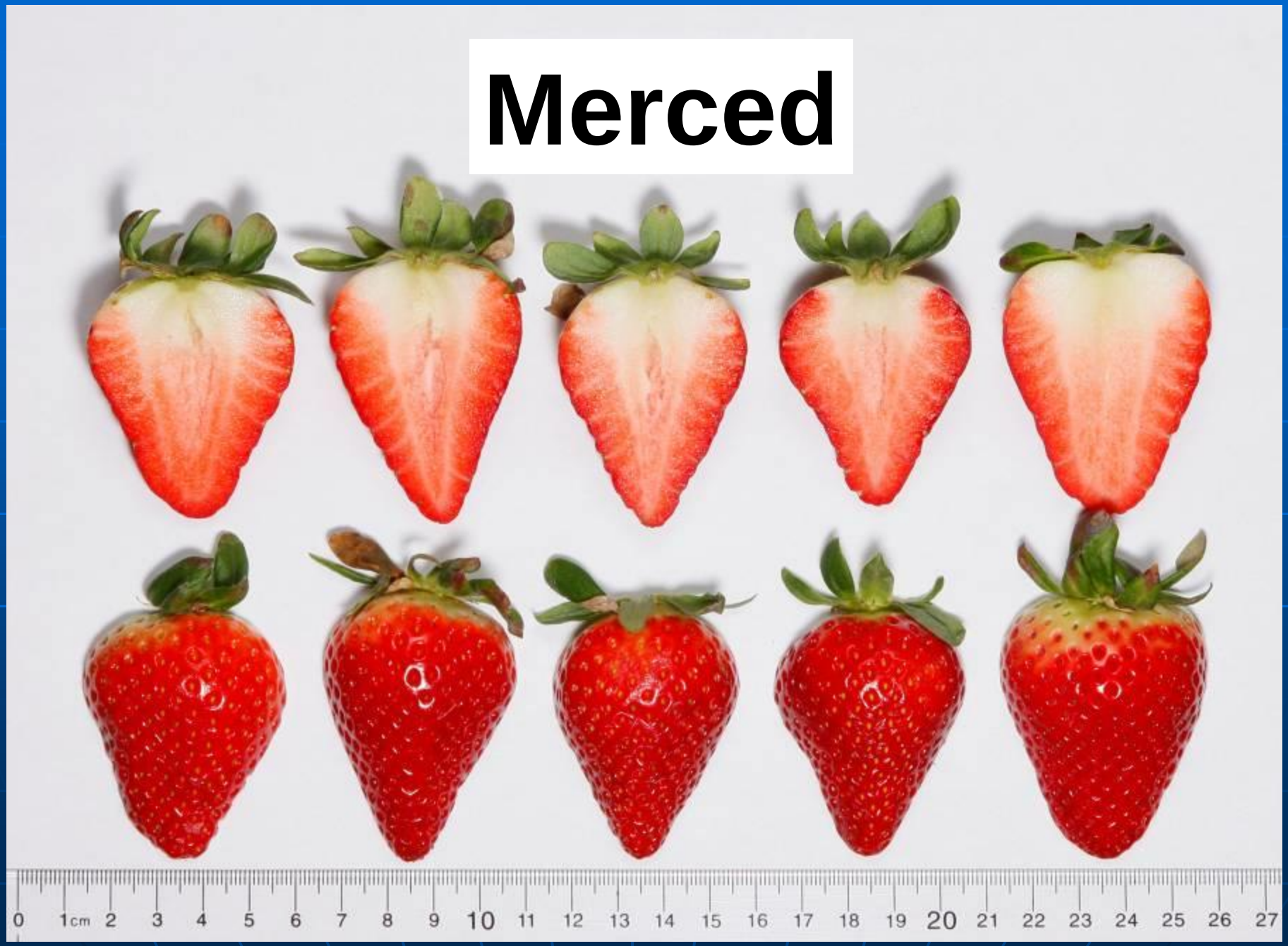
Merced = C229

Fruiting plant of Merced in Irvine, CA

Merced



Merced



New Cultivar Merced

Short-day cultivar

Compact plant

Early planting for So. California

Excellent fruit quality (flavor, color, firmness)

Weather tolerant

Fresh-dug plants (use 12-13” in-row spacing)

High productivity with frigo plants (Central Valley, Turkey, Colombia, N. Europe)

Performance of Albion, San Andreas and Camino Real with selection C229 in traditional late-summer planting trials at the Watsonville Research Facility in 2010-12

Item	Yield (C/Acre)	Appearance Score (5=best)	Fruit Size (g/fruit)	Firmness
Albion	7,047	4.1	33.6	12.8
San Andreas	6,908	4.0	30.6	12.5
Camino Real	5,053	3.0	25.6	11.5
C229	9,148	4.2	34.2	12.1

WEO plants harvested in January, stored at -2C planted August 26 - September 9

Performance ‘C229’ and three comparison cultivars evaluated at the Watsonville Research Facility in 2010-12

Item	**Early Yield** (C/A)	**Yield** (C/A)	**Appearance Score** (5=best)	**Fruit Size** (g/fruit)	**Firmness**
Camarosa	1,634	6,198	2.9	28.5	11.7
Ventana	2,472	6,680	3.2	31.3	10.4
Benicia	2,357	6,196	3.5	34.2	11.1
C229	1,705	7,398	4.3	35.0	11.9

Macdoel plants harvested October 15-16, planted with 1 week storage

(52" 2-row beds, 17,300 plants/acre)

Performance of ‘Merced’ (C229) and four comparison cultivars at the South Coast REC in 2011-12

Item	Early Yield (C/A)	Yield (C/A)	Appearance Score (5=best)	Fruit Size (g/fruit)	Firmness
Camarosa	2,307	5,331	2.3	28.0	3.3
Ventana	2,825	5,847	3.0	30.7	3.3
Benicia	3,172	6,469	3.2	33.4	3.6
San Andreas	1,718	4,580	3.3	31.2	3.7
C229	1,684	5,078	3.6	33.7	3.5

Macdoel plants harvested September 28, planted October 2

4-row, 64” beds with 16” in-row plant spacing (24,475 plants/acre)
Consider 4-row, 64” beds with 13” in-row plant spacing (30,260 plants/acre)

Advanced Short-day U.C. Selections

8.20-602

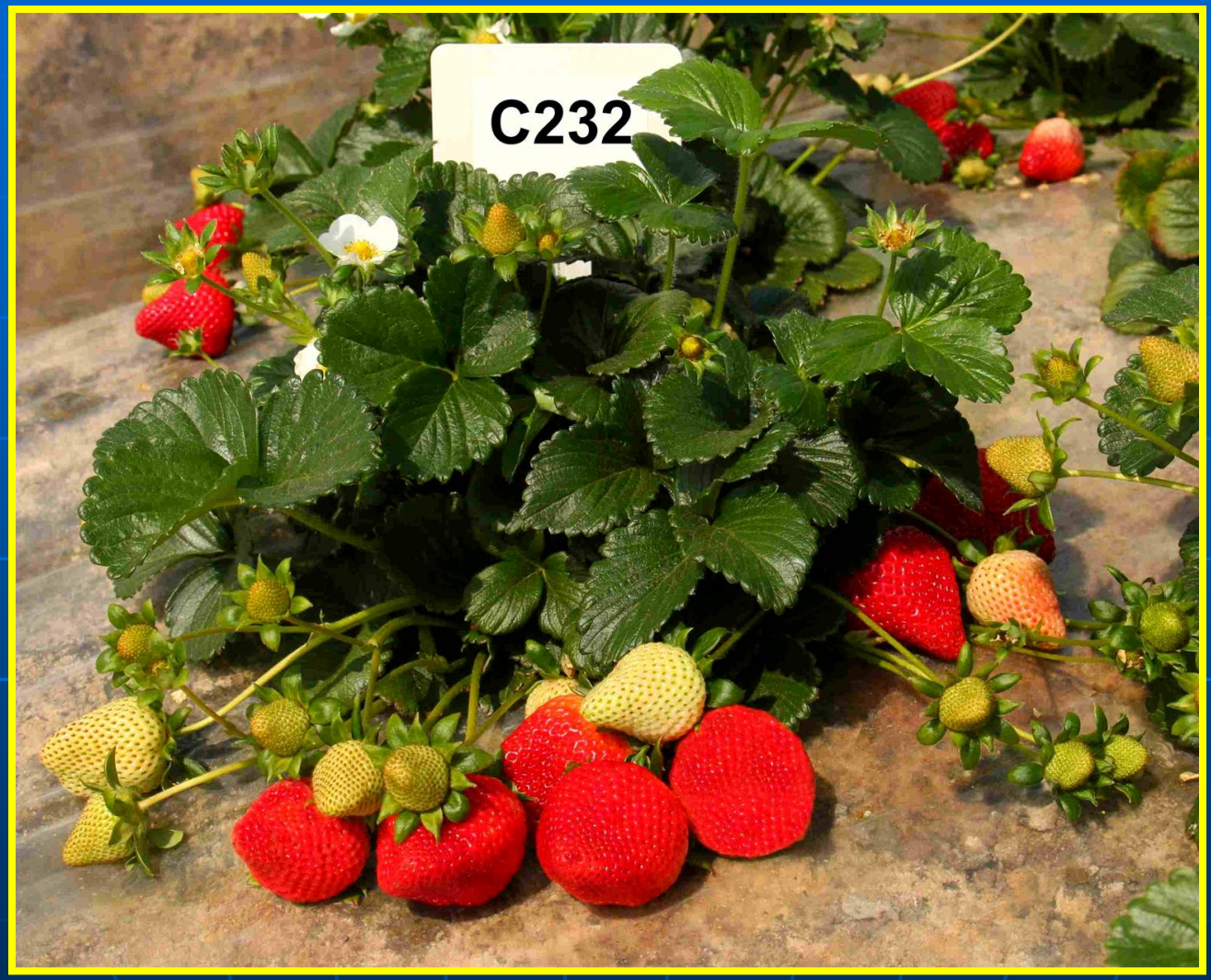
8.55-2

8.132-608

C231 (8.20-602)


C231

C232 (8.55-2)


C232

C235 (8.132-608)


C235

Performance of Advanced SD Selections at the U.C. So. Coast R.E.C. – Irvine, CA in 2011-13

Genotype	C#	Yld to 4/1	Total Yld	App (1-5)	Fruit size (g)	Firm (1-5)
Merced	C229	2484	7097	3.7	34.7	3.7
8.20-602	C231	3519	7866	3.6	35.7	3.7
8.55-2	C232	3852	10616	3.9	36.2	3.8
8.132-608	C235	4397	9761	3.5	35.9	3.6

Macdoel plants dug Sept. 28, planted Oct. 1, 2011-13
4-row beds, 64” wide, 24500 plants per acre, clear polyethylene mulch

Plug plants

Performance of non-chilled plug plants in So. Calif.

Item	Yield (grams/plant) in: Dec	Jan	Feb	Mar	April	May	June	Total G/P	Fruit Size (g)	App (1-5)	Firm (1-5)
Mojave	30	117	150	371	760	646	175	2248 (2012)	36.8	3.7	3.2
7.18-601	17	58	174	472	984	555	257	2517 (2109)	31.0	3.6	3.3
7.39-601	24	81	162	355	664	468	256	2010 (1689)	34.0	3.5	3.8
7.104-603	20	65	152	299	833	729	166	2264 (1964)	31.5	3.7	3.4
7.164-6	3	28	181	523	819	537	306	2397 (2144)	39.1	3.3	3.3
8.67-608	7	81	135	409	672	431	283	2018 (1778)	37.3	3.4	3.4

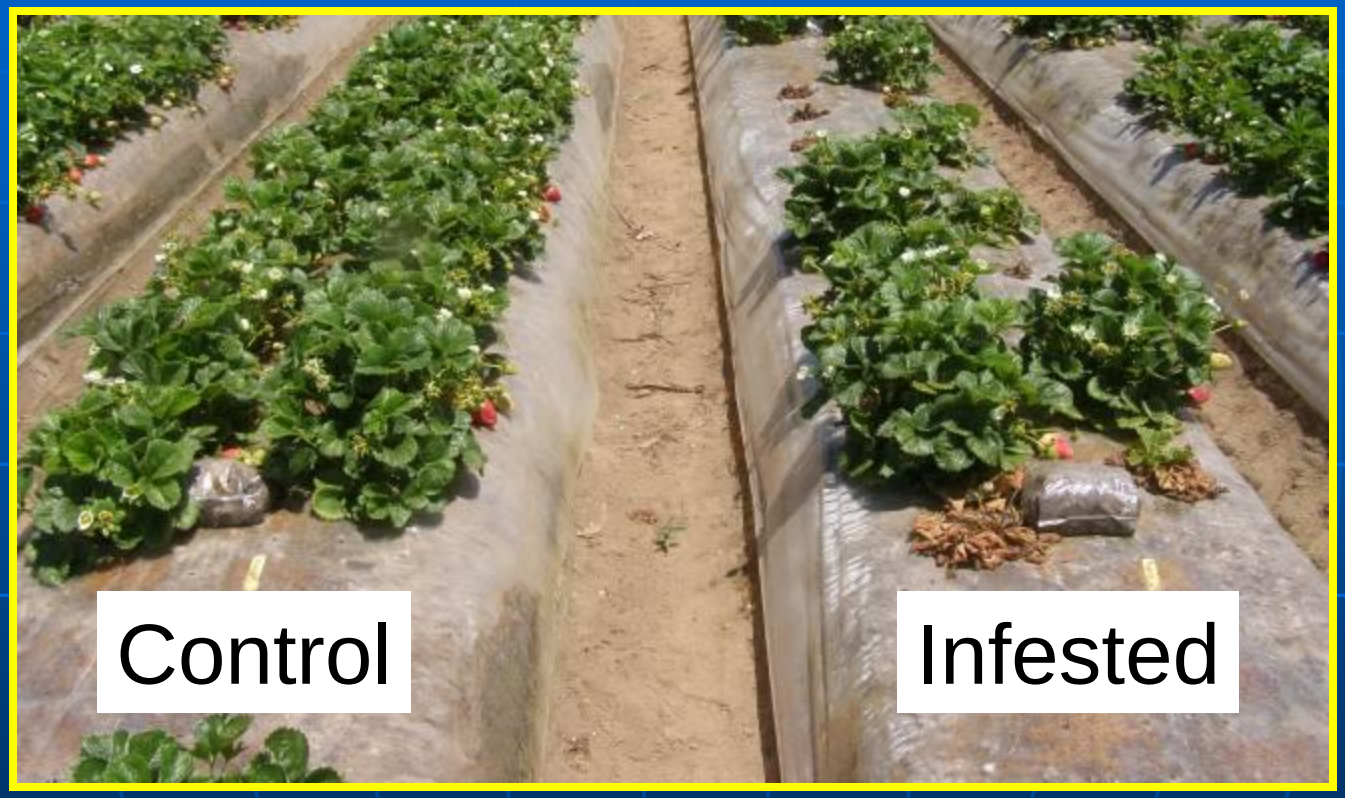
Plug plants propagated in Irvine on Sept. 10 and planted Oct. 15, 2011

6-week-old plug plants

Active root system

No plant mortality

Monterey



Fusarium oxysporum infection trial

Fusarium oxysporum infection trial

Performance of Albion, Monterey, and San Andreas at the Watsonville Research Facility with *Fusarium* Infestation

Item	Treatment	Yield (C/Acre)	Appearance Score (5=best)	Fruit Size (g/fruit)	% Stunted
Albion	Control	5,510	3.9	31.7	
	Infested	4,417	4.1	33.6	26.4
Monterey	Control	6,275	3.2	32.4	
	Infested	3,482	3.0	31.0	50.8
San Andreas	Control	6,799	4.2	32.2	
	Infested	7,909	4.4	32.8	0

WEO plants, yield to August 20

Table 1. Disease Resistance Scores for UC Cultivars, 2008-11

Genotype	*P. cactorum*	*V. dahliae*	*C. acutatum*	*F. oxysporum*	*M. phaseolina*
Camarosa	3.2	3.3	2.8	2.9	3.2
Ventana	2.5	3.1	3.0	4.6	3.2
Albion	4.5	3.9	3.1	2.3	1.9
Monterey	3.9	4.2	2.9	3.5	2.8
S. Andreas	4.1	4.1	2.8	5.0	1.6
Portola	4.1	3.8	2.2	5.0	1.9
Palomar	3.3	3.9	3.1	3.4	3.2
Benicia	3.7	2.2	2.7	3.0	3.1

"1" indicates high susceptibilty to disease;
"5" indicates strong disease resistance

Table 2. Disease Resistance Scores for UC Cultivars, 2011-12

Genotype	*P. cactorum*	*V. dahliae*	*C. acutatum*	*F. oxysporum*	*M. phaseolina*
Ventana	2.5	3.1	3.2	4.3	3.7
Benicia	3.8	1.6	2.7	2.6	3.3
Merced	4.6	2.8	2.3	3.5	2.4

"1" indicates high susceptibilty to disease;
"5" indicates strong disease resistance

Thank You!