

Evaluation of processing tomato varieties with resistance to Fusarium wilt race 3

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- Uniform trials in commercial fields at 5 locations:
 - Woodland, Yolo
 - Knights Landing, Sutter
 - Jones Tract, San Joaquin
 - Dos Palos, Merced and
 - Huron, Fresno
- Each variety replicated four times, 100-ft plots
- Mechanical harvest; plots weighed with weigh wagon
- 5-gallon samples off harvester sorted for culls, maturity; sample of good red fruit taken to PTAB inspection station

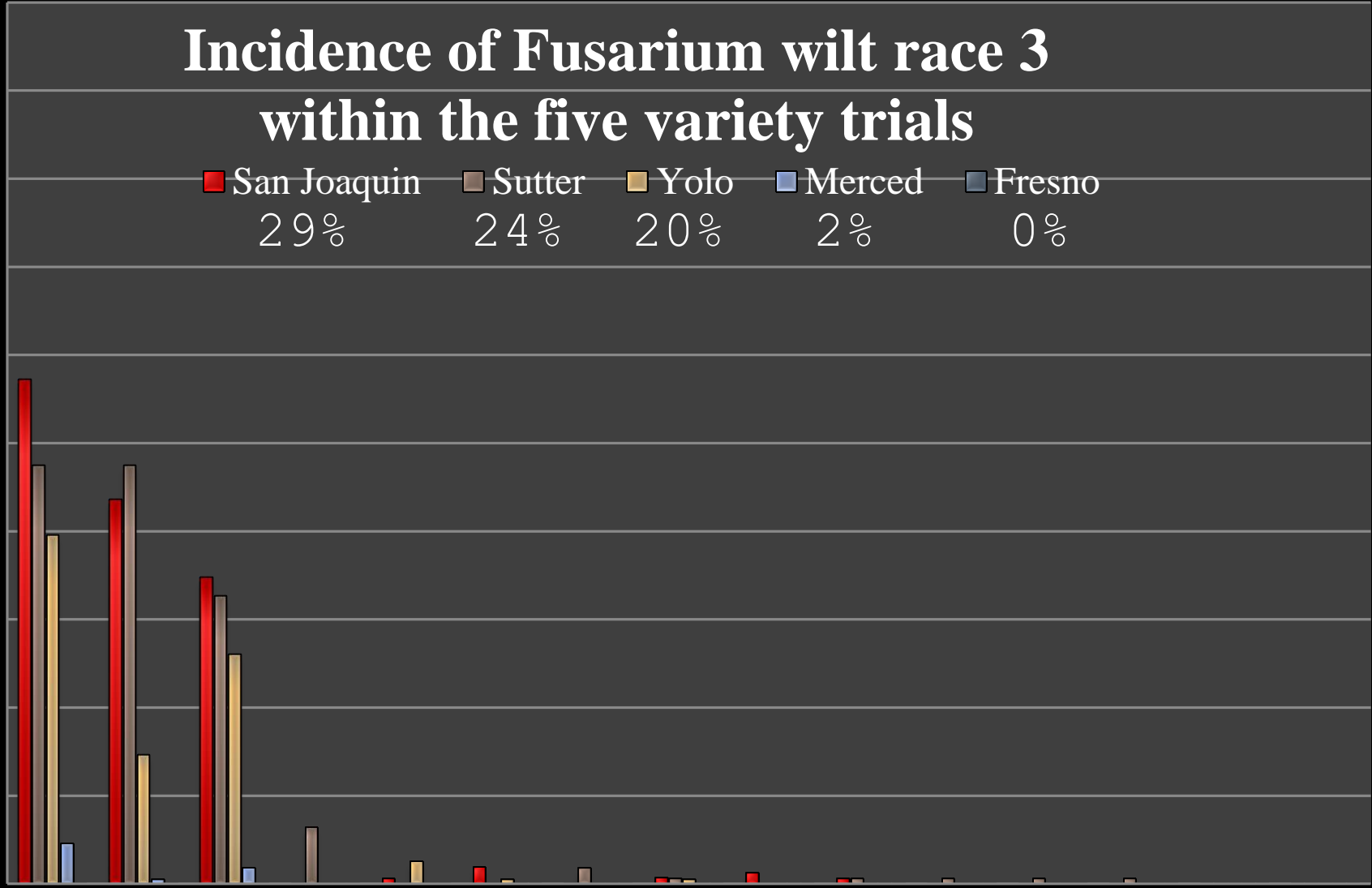
Overview

Incidence of Fusarium wilt race 3 within the five variety trials

San Joaquin 29% Sutter 24% Yolo 20% Merced 2% Fresno 0%

Fusarium wilt incidence (%)

50
45
40
35
30
25
20
15
10
5
0



H8504 DRI319 HM3887 BP16 BQ142 BQ406 SVS2493 HI539 N6429 HI310 BQ141 N6428 HM58801 BP2 SVS8232

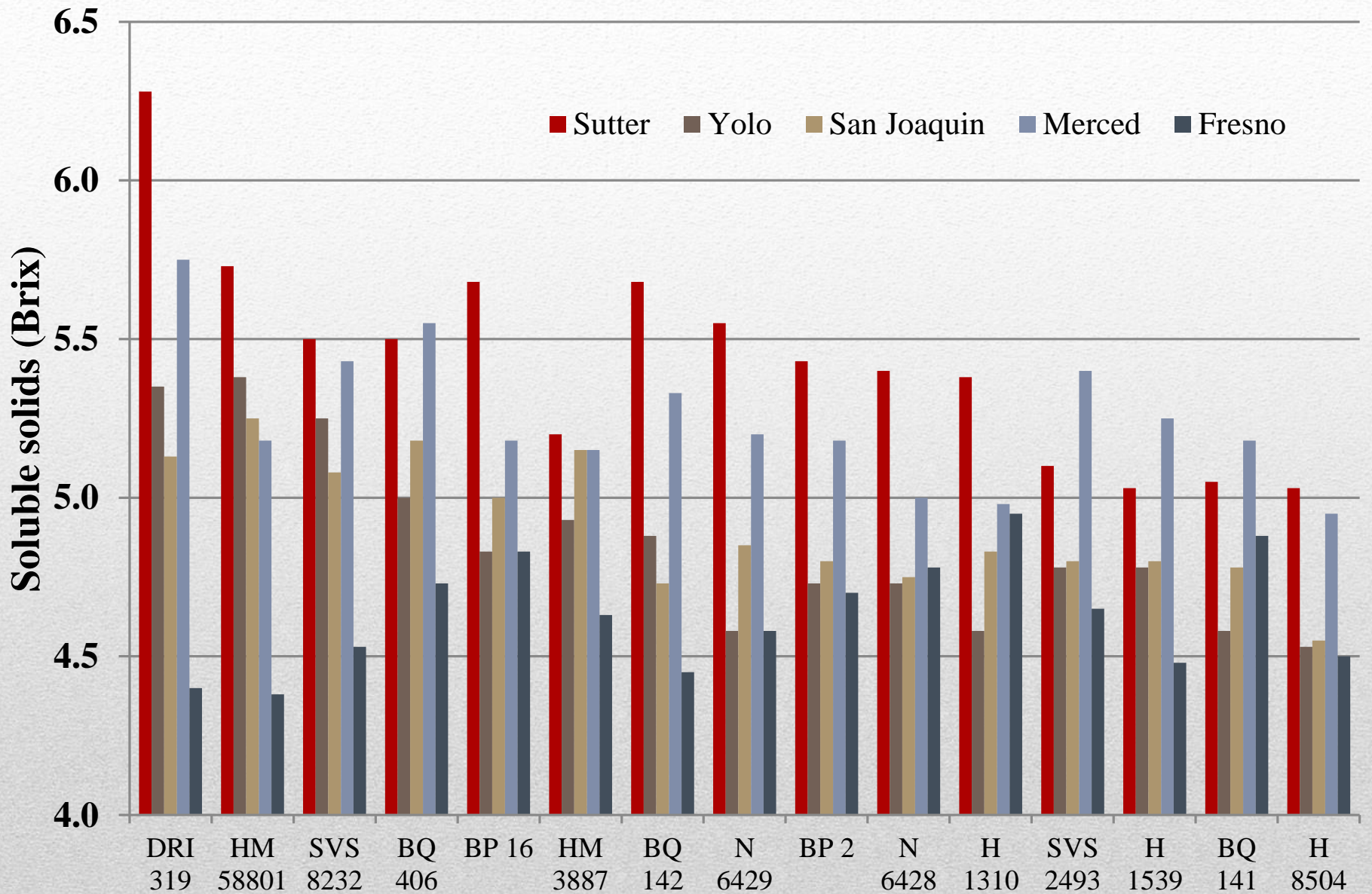
Variety



DELTA, SAN JOAQUIN TRIAL

		Estimated				
Variety	Variety category	Total yield (t/ac)		marketable yield (t/ac)		Soluble solids (° Brix)
N 6428	F3 resistant	44.7	a	43.4	a	4.75
HM 3887	F3 tolerant	43.9	a	40.6	ab	5.15
N 6429	F3 resistant	41.1	abc	39.9	abc	4.85
SVS 8232	F3 resistant	43.2	ab	39.7	abc	5.08
BP 2	F3 resistant	44.5	a	39.4	abc	4.80
H 1310	F3 resistant	41.2	abc	39.3	abc	4.83
H 1539	F3 resistant	39.0	cd	37.7	bcd	4.80
BQ 141	F3 resistant	39.7	bcd	37.4	bcd	4.78
HM 58801	F3 resistant	41.0	abc	37.1	bcde	5.25
DRI 319	F3 tolerant	38.7	cd	36.8	bcde	5.13
BP 16	F3 resistant	38.9	cd	35.6	cde	5.00
SVS 2493	F3 resistant	37.4	cde	34.4	def	4.80
BQ 406	F3 resistant	36.7	de	34.3	def	5.18
H 8504	F3 susceptible	34.6	e	32.8	ef	4.55
BQ 142	F3 resistant	34.1	e	30.9	f	4.73
	Average	39.9		37.3		4.91
	LSD@5%	4.1		4.6		0.33
	%CV	7.16		8.7		4.8

Variety	Disease resistance	Marketable yield		Soluble solids (°Brix)	
		tons/A		Avg, 3 No. sites	
HM 3887	VFF Nsw	57.6	a	5.09	
N 6428	VFFFNsw	55.0	ab	4.96	
BP 2	VFFFNsw	52.8	bc	4.98	
HM 58801	VFFFNsw	52.5	bc	5.45	
BQ 141	VFFFNsw	52.5	bc	4.80	
N 6429	VFFFNswLv	51.4	bcd	4.99	
SVS 8232	VFFFNsw	51.0	bcd	5.28	
SVS 2493	VFFFNsw	50.8	bcd	4.89	
H 1310	VFFFNsw	50.3	cde	4.93	
DRI 319	VFF Nsw	48.7	cde	5.58	
H 1539	VFFFNsw	47.8	de	4.87	
BP 16	VFFFNsw	47.6	de	5.17	
BQ 406	VFFFNsw	47.4	de	5.23	
H 8504	VFF N	46.0	ef	4.70	
BQ 142	VFFFNsw	42.7	f	5.09	
Mean		50.3		5.07	
LSD 5%		4.4			
% CV		11.0			5



- Both resistant and tolerant varieties performed well under disease pressure
- Variety performance greatly influenced by the environment, so...
- No single variety likely to be the top performer under a range of different conditions

conclusions

- Seed Transmission and Seed Treatment of *Fusarium oxysporum* f. sp. *lycopersici* - Tom Gordon, Hung Doan
- Pathogen characterization of Two *Fusarium* Species - Mike Davis, Hung Doan

Other UC research on F3

UC TEAM

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- Scott Stoddard, UCCE Merced & Madera counties
- Tom Turini, UCCE Fresno County
- Amber Vinchesi, UCCE Colusa & Sutter/Yuba counties
- CTRI and its contributing growers
- Grower cooperators: Richter Bros., Don Beeman Farms, Rick Marchucci, Morning Star, Diedrich Farms, Woolf Farms
- Ag Seeds
- Timothy, Stewart and Lekos
- Processing Tomato Advisory Board

Thanks!

