2014

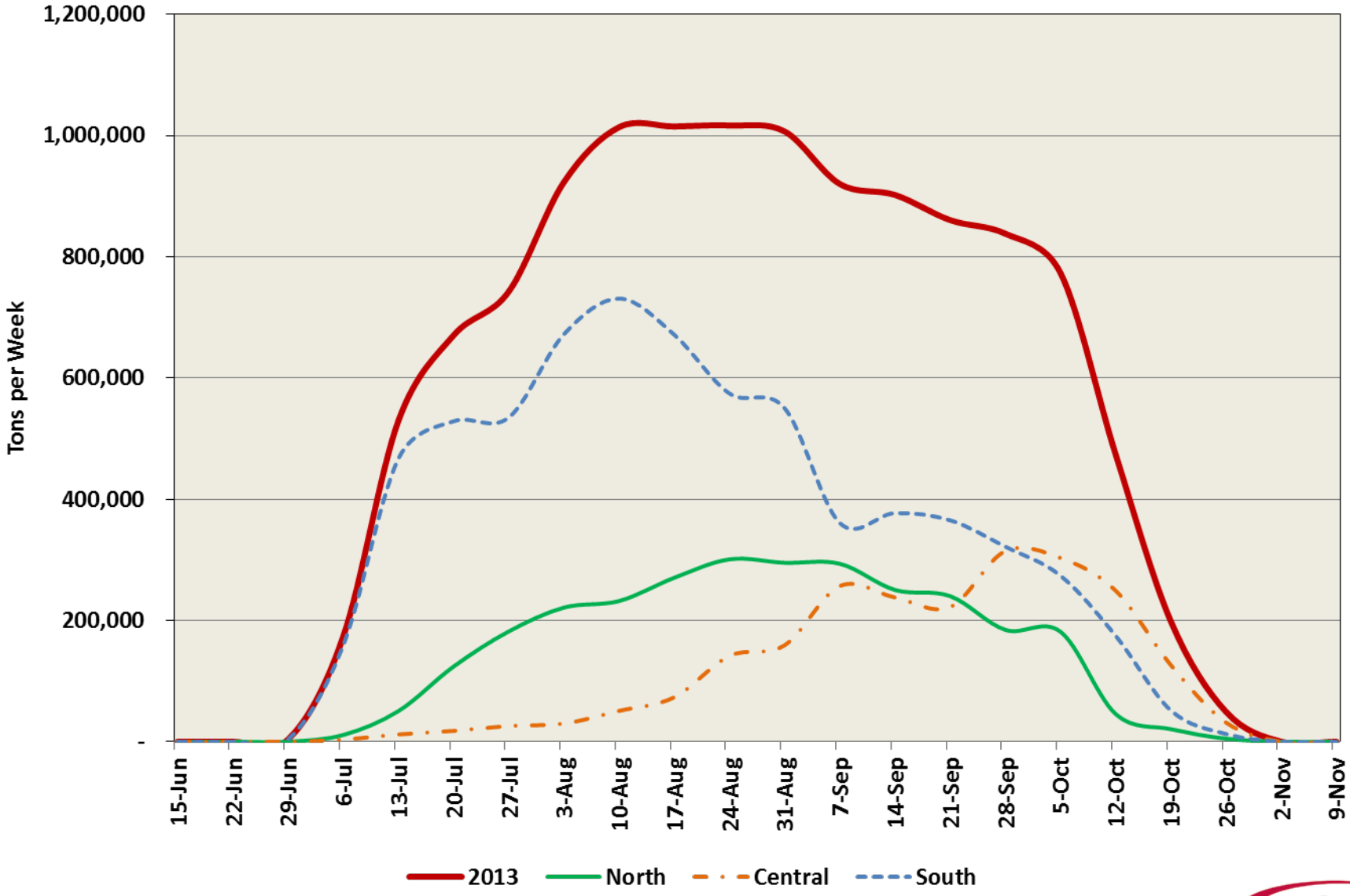
South Sacramento Valley Processing Tomato Production Meeting

January 9, 2014

AgSeeds UNLIMITED

… from Field to Yield

California Processing Tomato Harvest
2013 Tons per Week – Statewide, North, Central, South



California Processing Tomato Harvest
Northern Region Production by County – 2012 & 2013

County	2012			2013		
	Acres	Tons	Tons / Acre	Acre	Tons	Tons / Acre
Yolo	35,000	1,469,095	42.0	35,000	1,574,628	45.0
Colusa	13,000	579,689	44.6	11,000	623,968	56.7
Solano	10,000	338,420	33.8	9,000	354,121	39.3
Sutter	7,000	260,335	37.2	7,000	271,771	38.8
Sacramento	2,000	97,928	49.0	2,000	79,798	39.9
North Region	**67,000**	**2,745,467**	**41.0**	**64,000**	**2,904,286**	**45.4**

Note: Data compiled using USDA/NASS reported acreage and PTAB delivered tons

California Processing Tomato Market
TOP 15 Varieties – 2004 vs 2013

2004

Planted Acres: 301,000

Delivered Tons: 11,671,760

Tons/Acre: 38.8

% Transplants: 62%

Solids: 5.18

 # EFS: 6

 # TSW: 0

H9780	Mkt Share
H9780	9.82%
3155	7.90%
HP303	6.81%
AB2	6.52%
EPN113	6.04%
APT410	6.02%
H9557	6.00%
CXD179	5.19%
H9663	4.68%
H9665	4.63%
N6117	3.28%
H9494	2.87%
HMX0830	2.17%
H8892	2.02%
HP849	1.86%

2013

Variety	Mkt Share
H8504	13.57%
N6366	11.83%
H5608	7.48%
H2401	4.77%
H5508	3.56%
N6404	3.42%
H1015	2.83%
H3402	2.62%
DRI319	2.58%
UG19406	2.37%
H4707	2.36%
N6394	2.05%
AB2	2.04%
H9663	1.96%
BQ205	1.89%

Planted Acres: 261,000

Delivered Tons: 12,113,015

Tons/Acre: 46.8

% Transplants: > 95%

Solids: 5.22

 # EFS: 30

 # TSW: 36

California Processing Tomato Harvest
Northern Variety Use Summary: Early (10.3%)

Based on Final PTAB Reports

Variety	Supplier	Category	Total Loads	Solids	Color	LU	pH	Mold	Green
H5003	Heinz	Early	2,373	4.85	24.8	3.7	4.41	0.9	3.2
APT410	Seminis	Early	2,236	4.73	25.4	3.6	4.41	1.5	1.7
N6397	Nunhems	Early	2,185	5.09	25.1	1.0	4.43	0.7	1.1
H1015	Heinz	Early	1,949	5.04	24.8	0.9	4.43	0.6	2.1
Shasta	Harris Moran	Early	1,635	5.19	25.7	4.5	4.32	1.5	1.6
HP816	Seminis	Early	618	4.92	27.3	5.5	4.41	0.8	3.3
AB4606	Seminis	Early	546	5.46	25.4	1.6	4.42	1.6	0.6
BOS66509	Orsetti	Early	337	5.02	25.9	1.9	4.41	2.7	0.7

California Processing Tomato Harvest
Northern Variety Use Summary: Mid-Season (50.0%)

Based on Final PTAB Reports

Variety	Supplier	Category	Total Loads	Solids	Color	LU	pH	Mold	Green
H5608	Heinz	Mid-Season	13,981	4.81	23.1	0.7	4.42	2.5	2.4
N6366	Nunhems	Mid-Season	8,864	5.32	25.7	1.3	4.40	1.5	1.4
N6404	Nunhems	Mid-Season	8,225	5.17	24.5	0.9	4.42	2.0	0.9
CXD255	Harris Moran	Mid-Season	5,799	5.18	25.3	0.8	4.38	1.8	0.8
N6402	Nunhems	Mid-Season	3,544	5.24	25.0	0.8	4.39	1.7	1.2
DRI319	Seminis	Mid-Season	3,485	5.84	24.1	1.1	4.35	1.9	0.8
AB2	Seminis	Mid-Season	2,041	5.24	24.5	1.4	4.32	2.8	0.7
AB0311	Seminis	Mid-Season	1,995	5.43	24.0	0.8	4.33	2.5	0.9
H9663	Heinz	Mid-Season	1,748	4.85	24.2	1.3	4.40	4.0	4.0
DRI320	Seminis	Mid-Season	1,730	5.38	25.0	1.6	4.35	2.1	0.6
BQ205	Woodbridge	Mid-Season	1,505	5.59	26.2	1.4	4.35	2.2	1.9
BQ163	Woodbridge	Mid-Season	1,068	5.64	24.1	1.5	4.38	1.4	0.5
HM1892	Harris Moran	Mid-Season	754	5.18	24.5	0.8	4.47	3.1	0.8
PS650	Seminis	Mid-Season	703	5.39	25.7	0.9	4.40	1.4	0.7
AB3	Seminis	Mid-Season	355	5.48	25.4	1.0	4.33	2.7	1.0

California Processing Tomato Harvest
Northern Variety Use Summary: Late-Season (34.0%)

Based on Final PTAB Reports

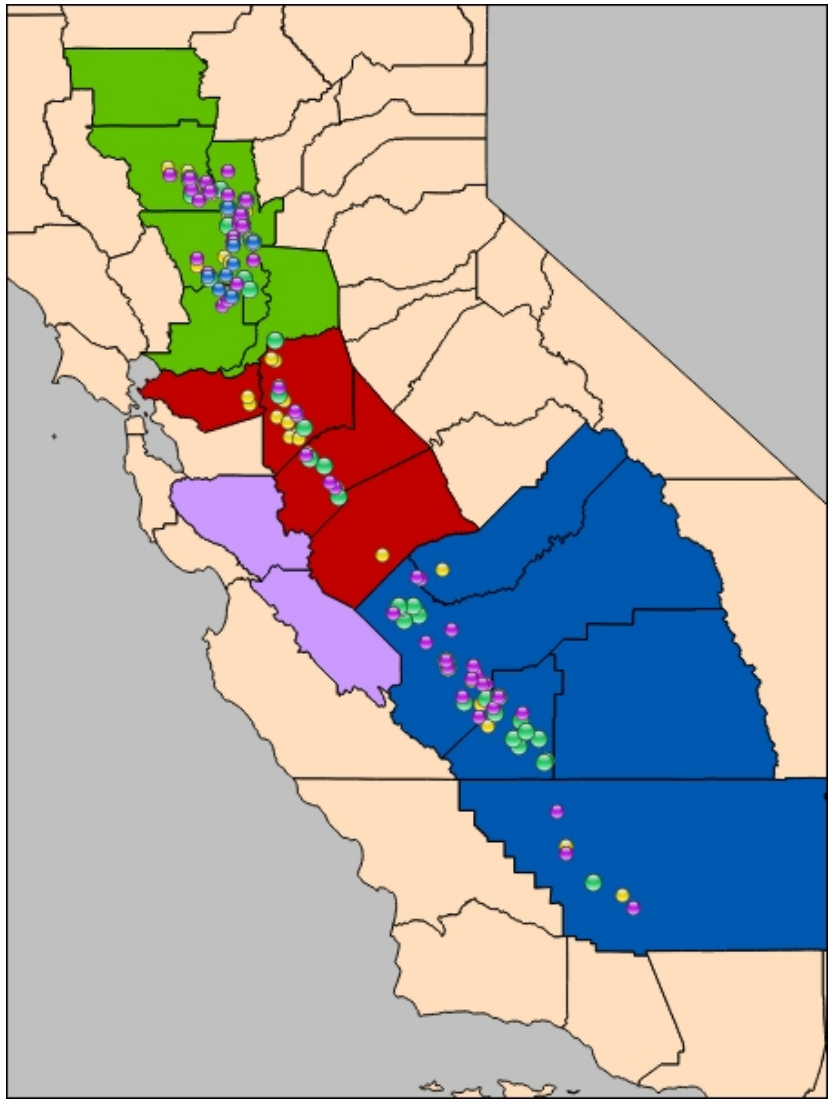
Variety	Supplier	Category	Total Loads	Solids	Color	LU	pH	Mold	Green
H2401	Heinz	Late-Season	6,206	4.87	24.8	0.9	4.34	2.3	4.1
H5508	Heinz	Late-Season	4,802	4.68	24.9	0.4	4.36	2.0	1.3
H8504	Heinz	Late-Season	4,684	4.99	24.9	0.7	4.34	2.8	4.7
HP849	Seminis	Late-Season	4,176	5.04	25.0	0.7	4.38	3.3	0.8
H5702	Heinz	Late-Season	3,191	4.85	23.8	0.4	4.43	1.4	4.1
BQ206	Woodbridge	Late-Season	3,170	5.45	25.1	1.5	4.34	2.3	0.8
H4707	Heinz	Late-Season	2,410	4.89	24.6	0.4	4.37	1.1	2.6
HM9905	Harris Moran	Late-Season	2,054	5.20	24.7	0.6	4.47	3.0	0.8
H3402	Heinz	Late-Season	1,988	4.82	24.6	0.8	4.45	4.4	1.9
N6407	Nunhems	Late-Season	1,952	5.36	25.4	0.7	4.38	2.4	0.8
H1175	Heinz	Late-Season	1,725	4.95	23.3	0.3	4.46	2.0	2.4
UG19406	United Genetics	Late-Season	1,437	5.49	24.9	0.5	4.30	1.9	0.8
H5701	Heinz	Late-Season	1,301	4.88	24.2	0.5	4.36	1.5	4.3

California Processing Tomato Harvest
Northern Variety Use Summary: F3 (3.2%)

Based on Final PTAB Reports

Variety	Supplier	Category	Total Loads	Solids	Color	LU	pH	Mold	Green
CXD282	Harris Moran	F3	3,112	5.26	23.9	0.9	4.41	3.3	2.1
AB0306	Seminis	F3	554	5.58	25.2	4.2	4.44	2.3	1.6

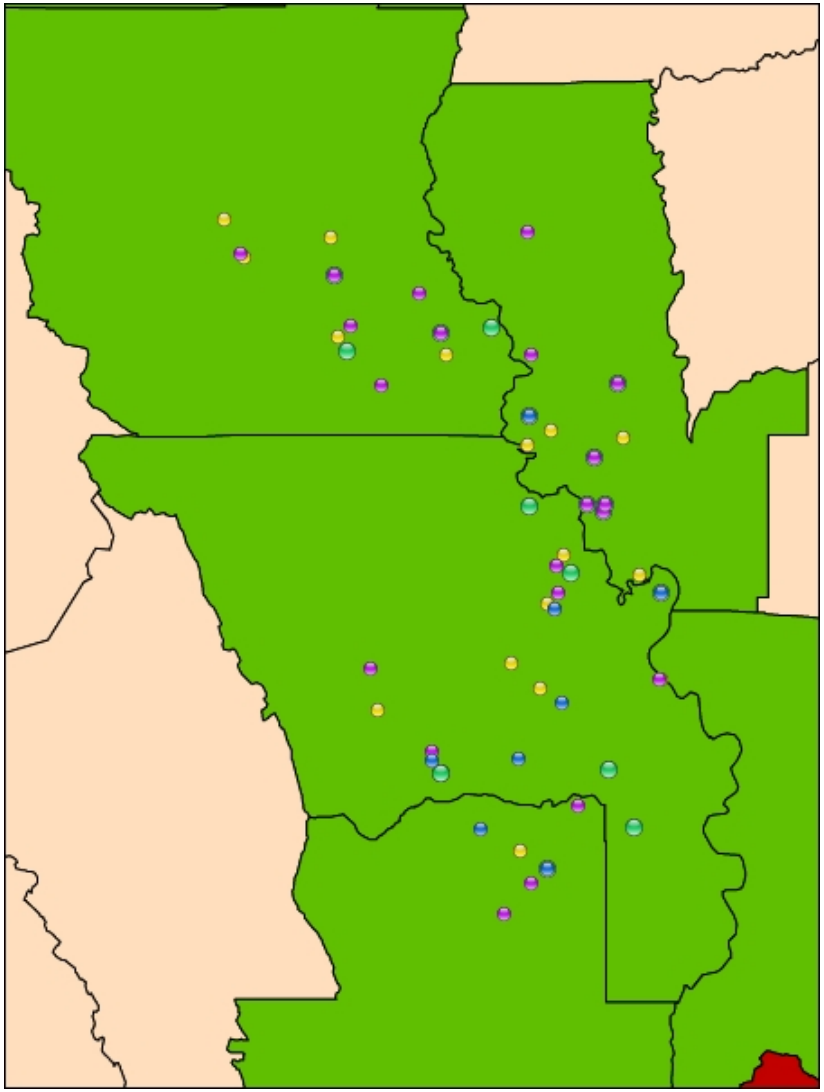
Ag-Seeds Unlimited Trial Locations
2013 Statewide – Plot, GT, Adaptive & Peel – Dice Trials



- Plot (73 Locations)
  - Chemistry & early indications of horticultural performance
- GT (48 Locations)
  - First test of commercial viability
- Adaptives (45 Locations)
  - Confirmation of commercial potential
- Peel / Dice (12 Locations)
  - Measuring In factory recovery improvements

178 Total Processing Tomato Trials

Ag-Seeds Unlimited Trial Locations
2013 Northern – Plot, GT, Adaptive & Peel – Dice Trials



- Plot (22 Locations)
  - Chemistry & early indications of horticultural performance
- GT (21 Locations)
  - First test of commercial viability
- Adaptives (18 Locations)
  - Confirmation of commercial potential
- Peel / Dice (8 Locations)
  - Measuring in factory recovery improvements

69 Total Processing Tomato Trials in North

Typical Plot Trial Configuration
F3 Varieties in Trials

Plot Trial

120)	DRI320	119)	DRI320	118)	DRI320	117)	DRI320	116)	DRI320	115)	HMX3888
109)	UG15908	110)	UG19306	111)	UG19406	112)	Ag13	113)	2233	114)	2261
108)	UG6610	107)	UG6310	106)	H1313	105)	H1310	104)	H1308	103)	H1304
97)	HMX4192	98)	TC3412	99)	TC3469	100)	TC3470	101)	TC3471	102)	H1301
96)	HMX3889	95)	HMX3887	94)	HMX3885	93)	HMX3883	92)	HMX3893	91)	D11X16789
85)	SV2849TP	86)	BA6106	87)	F3132	88)	AB4606	89)	DRI320	90)	BOS602
84)	HP108	83)	HM7885	82)	H2601	81)	H1293	80)	H1292	79)	H9780
73)	H8504	74)	H9663	75)	H9665	76)	H4707	77)	N6410	78)	PS650
72)	H1285	71)	HP849	70)	N6407	69)	H5608	68)	H5508	67)	H1175
61)	SV6743TM	62)	SV7707TM	63)	BQ268	64)	BQ295	65)	H1170	66)	F0613
60)	SV4778TM	59)	SV1981TM	58)	PX1245	55)	N6404	56)	DRI319	57)	PS002
49)	H2401	50)	H8004	51)	N6368	52)	N6385	53)	N6394	54)	N6398
48)	CXD282	47)	CXD255	46)	HMX2898	45)	F6989	44)	F6986	43)	C322
37)	H3402	38)	SV0335TM	39)	AB2	40)	BQ316	41)	BQ206	42)	C316
36)	H1161	35)	HM7883	34)	HM9905	33)	HM1892	32)	HMX3908	31)	HMX3907
25)	N6402	26)	BQ294	27)	BQ297	28)	BQ205	29)	BA6101	30)	HMX2897
24)	C324	23)	F6994	22)	BQ163	21)	AB0311	20)	N6366	19)	DRI320
13)	SV0250TM	14)	BQ296	15)	BQ313	16)	HM1893	17)	N6412	18)	N6397
12)	SV9916TM	11)	APT410	10)	H1015	9)	DRI320	8)	BQ289	7)	BQ287B
1)	BQ204	2)	BA5098	3)	C320	4)	CXD187	5)	SV0599TM	6)	BQ287A

Variety
11AB1564
11AB1574
SV335TM
11AB1569
SV8232TM
12-9Z-PSQ-0135
12-9Z-PSQ-0137
12-9Z-PSQ-0140
10AB7577
9Z 0 0473
9Z 1 0578
H1304
H1310

Variety
N6412
N6418
BQ141
BQ142
BQ147
BQ148
CXD282
HMX3907
C316
F6994
F6986
F6989
F3132

Typical GT Trial Layout
Triple Replicated Yield Trials

Each variety appears on each bed, and the front, center and back of each trial, to better represent field variability.

17	26	10
16	25	9
15	24	8
14	23	7
13	22	6
12	21	5
11	20	4
26	19	3
25	18	2
24	10	1
23	9	17
22	8	16
21	7	15
20	6	14
19	5	13
18	4	12
10	3	11
9	2	26
8	1	25
7	17	24
6	16	23
5	15	22
4	14	21
3	13	20
2	12	19
1	11	18

2013 F3 GT Trial Results
3 Locations, 9 Data Points

Variety													Yield T/A
BQ141	**A**												**48.31**
H5608	A	B											46.89
	A	B											46.81
	A	B											46.50
	A	B											46.17
H1310		**B**	**C**										**44.64**
		B	C	D									44.27
		B	C	D									44.14
		B	C	D									44.09
		B	C	D									43.90
BQ142			**C**	**D**	**E**								**42.82**
SV335TM			**C**	**D**	**E**	**F**							**41.81**
HMX3907				**D**	**E**	**F**	**G**						**41.51**
SV8232TM					**E**	**F**	**G**	**H**					**40.09**
					E	F	G	H					39.94
					E	F	G	H					39.86
						F	G	H	I				39.36
N6412						**F**	**G**	**H**	**I**				**38.96**
							G	H	I				38.52
CXD282								H	I				37.93
								H	I	J			37.26
H8504									I	J	K		36.50
N6366										J	K	L	34.45
											K	L	33.97
												L	32.54
DRI306												L	32.43

LSD 3.125

2013 F3 GT Trial Results
5 Locations, 15 Data Points

Variety													Average Yield T/A
	A												54.87
	A												54.54
	A												54.45
H5608	A	B											53.93
	A	B											53.68
	A	B											53.45
BP2	**A**	**B**	**C**										**53.21**
	A	B	C										53.20
	A	B	C	D									52.39
H1310		**B**	**C**	**D**	**E**								**51.37**
			C	D	E	F							50.58
SV335TM				**D**	**E**	**F**	**G**						**49.58**
HMX3907					**E**	**F**	**G**	**H**					**49.32**
						F	G	H					48.52
SV8232TM						**F**	**G**	**H**					**48.34**
							G	H	I				47.58
							G	H	I				46.86
CXD282								H	I	J			46.61
N6412									**I**	**J**	**K**		**45.45**
H8504									I	J	K		45.34
N6366										J	K	L	43.81
DRI306											K	L	43.16
C316												L	42.35
LSD 2.817													

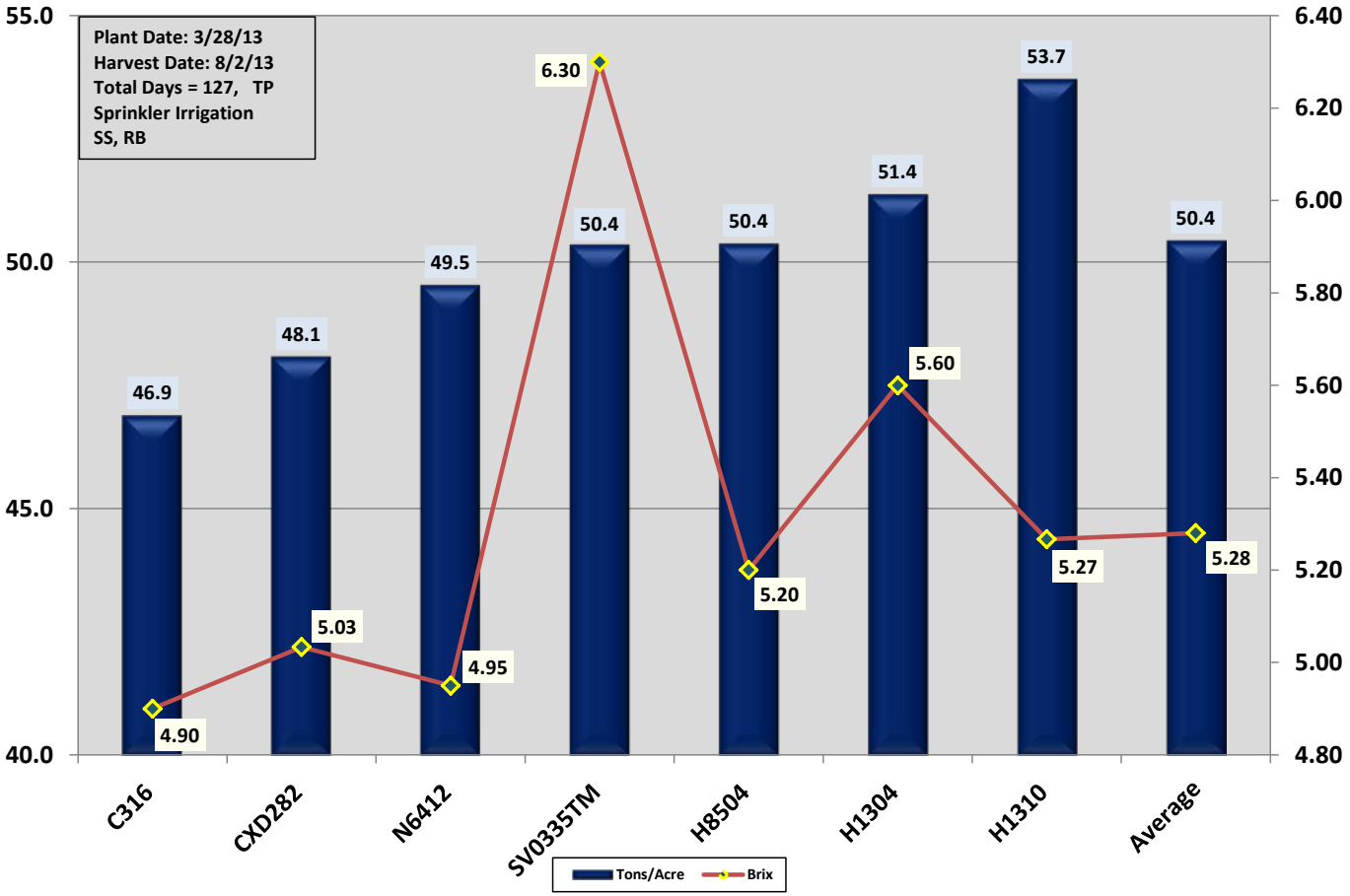
2013 F3 GT Trial Results
6 Locations, 18 Data Points

Variety												Average Yield T/A
H5608	A											52.42
	A											52.36
	A											52.07
	A											51.88
	A	B										51.22
	A	B										50.73
	A	B	C									50.45
H1310		**B**	**C**	**D**								**49.29**
			C	D	E							48.06
SV335TM				**D**	**E**							**47.76**
				D	E							47.61
HMX3907				**D**	**E**	**F**						**46.87**
					E	F	G					46.14
SV8232TM					**E**	**F**	**G**					**46.00**
						F	G	H				44.69
CXD282							G	H	I			43.88
N6412							**G**	**H**	**I**			**43.63**
H8504								H	I			43.35
								H	I	J		42.96
N6366									I	J	K	41.46
DRI306										J	K	40.42
C316											K	39.32

LSD 2.551

Typical Adaptive Trial Layout
F3 Adaptive

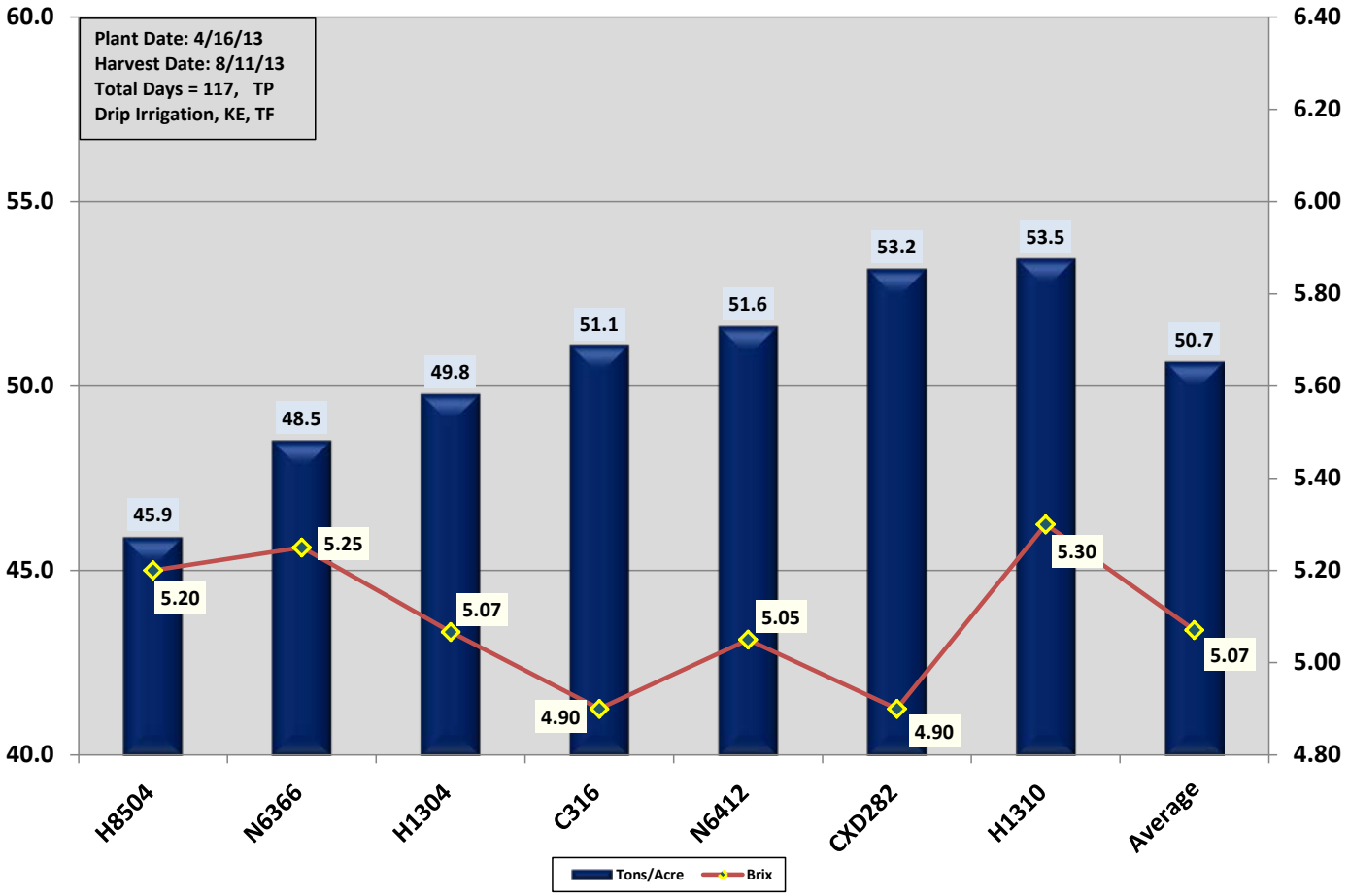
2013 Adaptive Trial – Sutter 1, F3



Corresponding PTAB Grades

Variety	Brix	Color	Mold	LU	pH	Green	MOT
C316	4.90	23.00	3.00	5.50	4.45	0.50	0.00
CXD282	5.03	23.67	1.67	0.50	4.41	1.67	0.33
N6412	4.95	24.50	2.75	4.75	4.43	0.75	0.25
SV0335TM	6.30	26.00	3.50	3.50	4.28	0.50	0.50
H8504	5.20	27.00	0.50	1.00	4.35	1.75	0.25
H1304	5.60	24.67	1.33	2.00	4.45	0.83	0.50
H1310	5.27	25.00	1.67	1.83	4.42	0.83	0.17

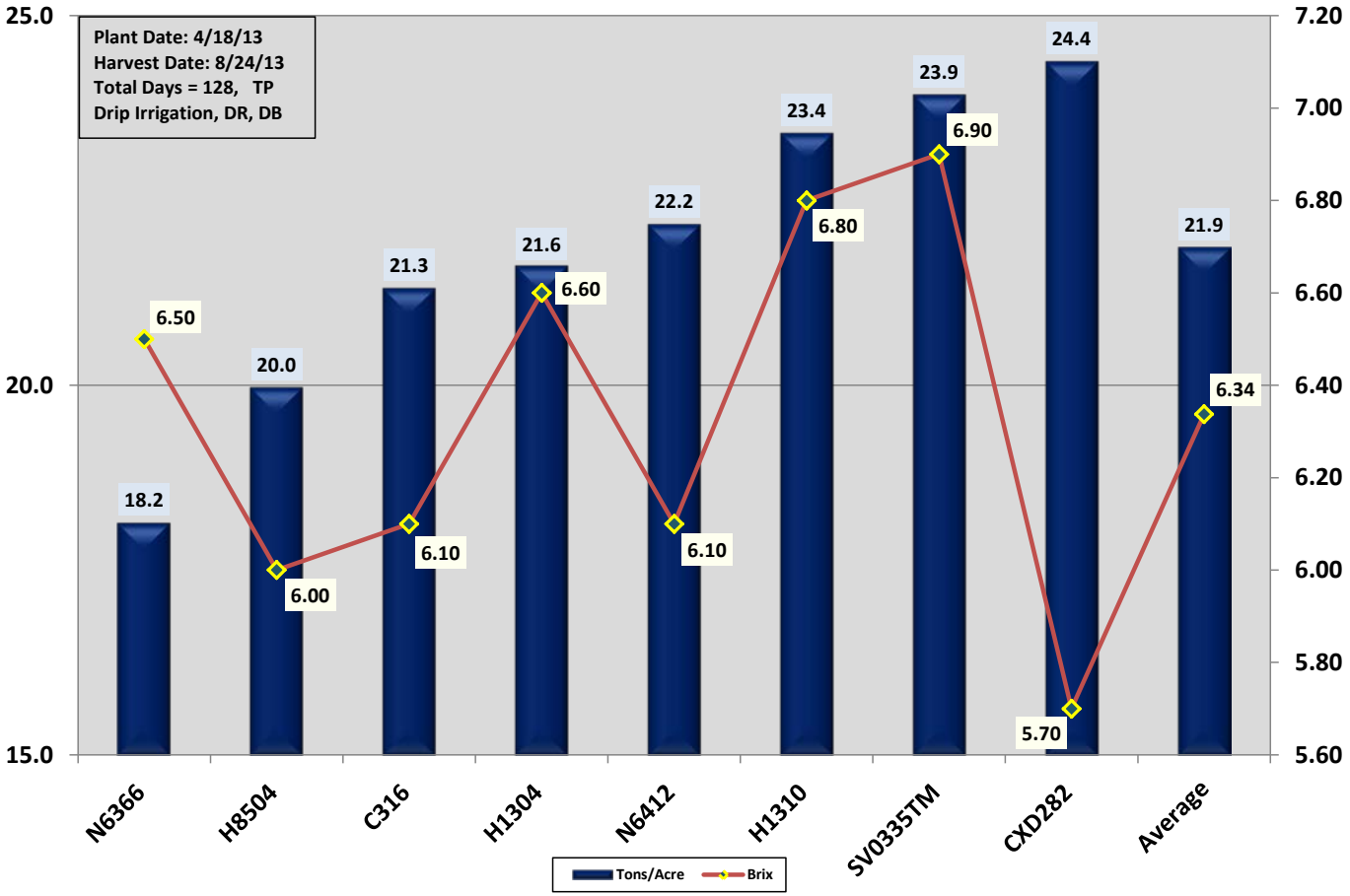
2013 Adaptive Trial – Colusa 4, F3



Corresponding PTAB Grades

Variety	Brix	Color	Mold	LU	pH	Green	MOT
H8504	5.20	24.50	0.50	0.00		0.25	0.25
N6366	5.25	22.50	1.25	0.00		0.50	0.00
H1304	5.07	23.67	0.50	0.33		0.00	0.00
C316	4.90	22.67	1.33	0.50		0.00	0.17
N6412	5.05	22.00	1.00	1.50		0.25	0.00
CXD282	4.90	25.67	0.00	0.50		0.17	0.00
H1310	5.30	25.50	1.25	0.00		0.75	0.25

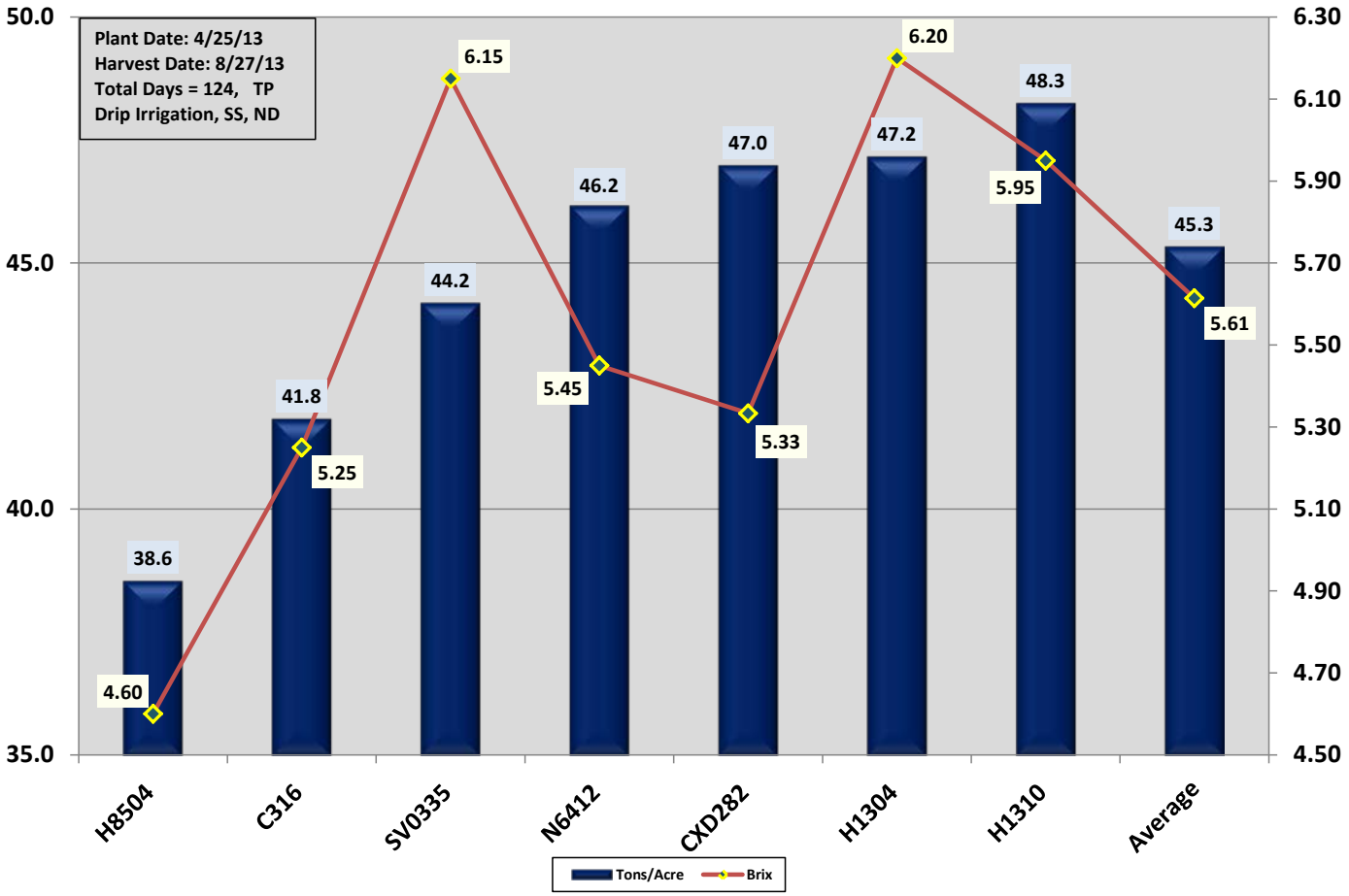
2013 Adaptive Trial – Yolo 1, F3



Variety	Brix	Color	Mold	LU	pH	Green	MOT
N6366	6.50	23.00	0.00	7.00	4.56	0.50	0.00
H8504	6.00	23.00	0.00	0.50	4.33	1.50	0.00
C316	6.10	21.00	1.50	5.00	4.47	1.00	0.00
H1304	6.60	23.00	1.00	1.50	4.50	1.00	0.00
N6412	6.10	21.00	1.00	2.00	4.47	2.00	0.00
H1310	6.80	23.00	2.50	1.00	4.40	1.50	0.50
SV0335TM	6.90	25.00	1.50	2.00	4.34	2.00	0.00
CXD282	5.70	22.00	0.00	1.00	4.44	1.00	0.00

Corresponding PTAB Grades

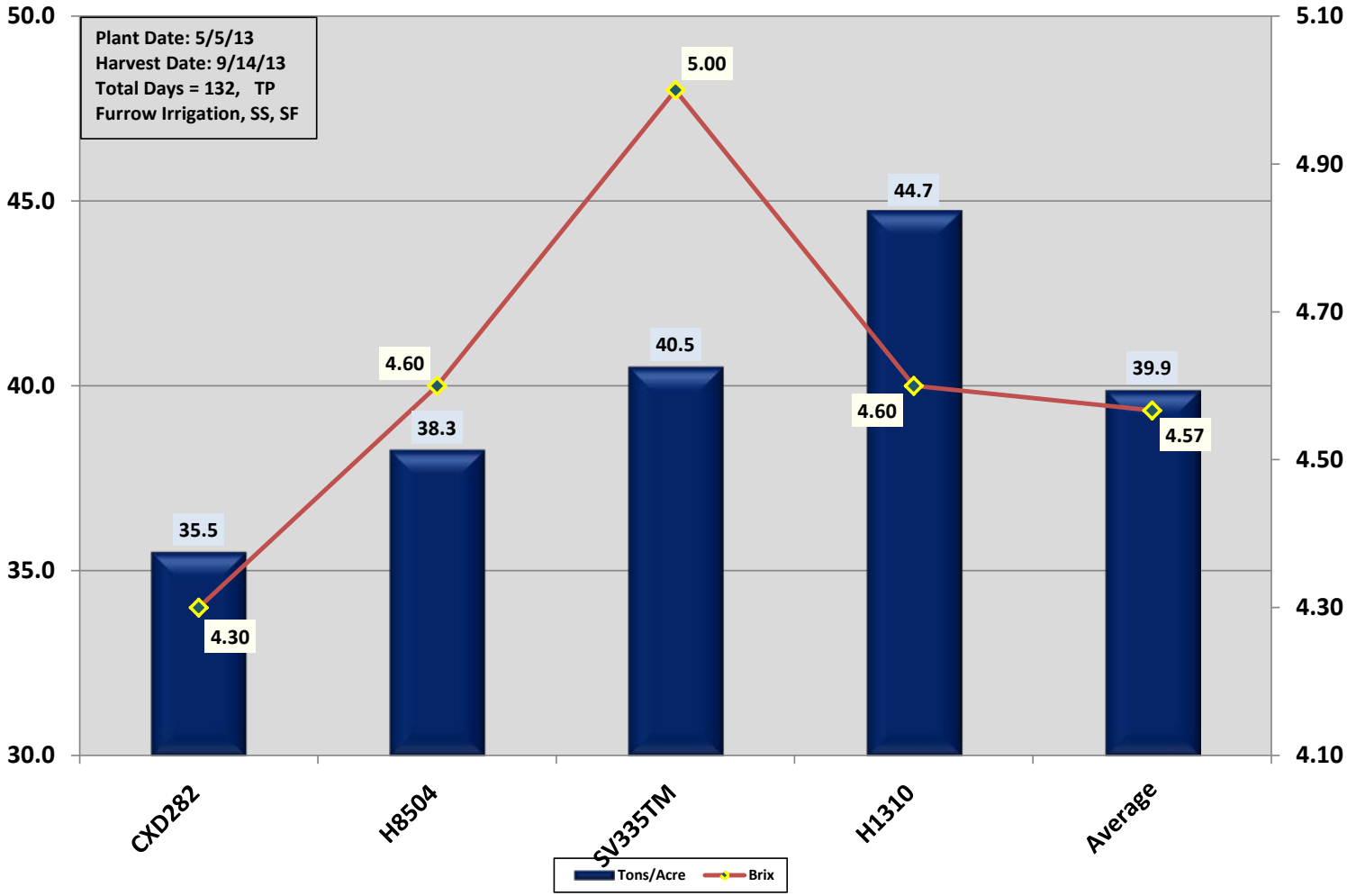
2013 Adaptive Trial – Sutter 2, F3



Corresponding PTAB Grades

Variety	Brix	Color	Mold	LU	pH	Green	MOT
H8504	4.60	25.00	1.00	0.00	4.51	0.00	0.00
C316	5.25	22.50	5.00	1.75	4.49	0.75	0.25
SV0335TM	6.15	23.50	4.25	1.50	4.33	0.75	0.00
N6412	5.45	23.00	4.25	2.25	4.56	1.00	0.50
CXD282	5.33	23.33	2.17	0.17	4.36	0.17	0.00
H1304	6.20	23.00	3.25	1.00	4.51	0.25	0.00
H1310	5.95	22.50	1.75	0.00	4.48	0.50	0.50

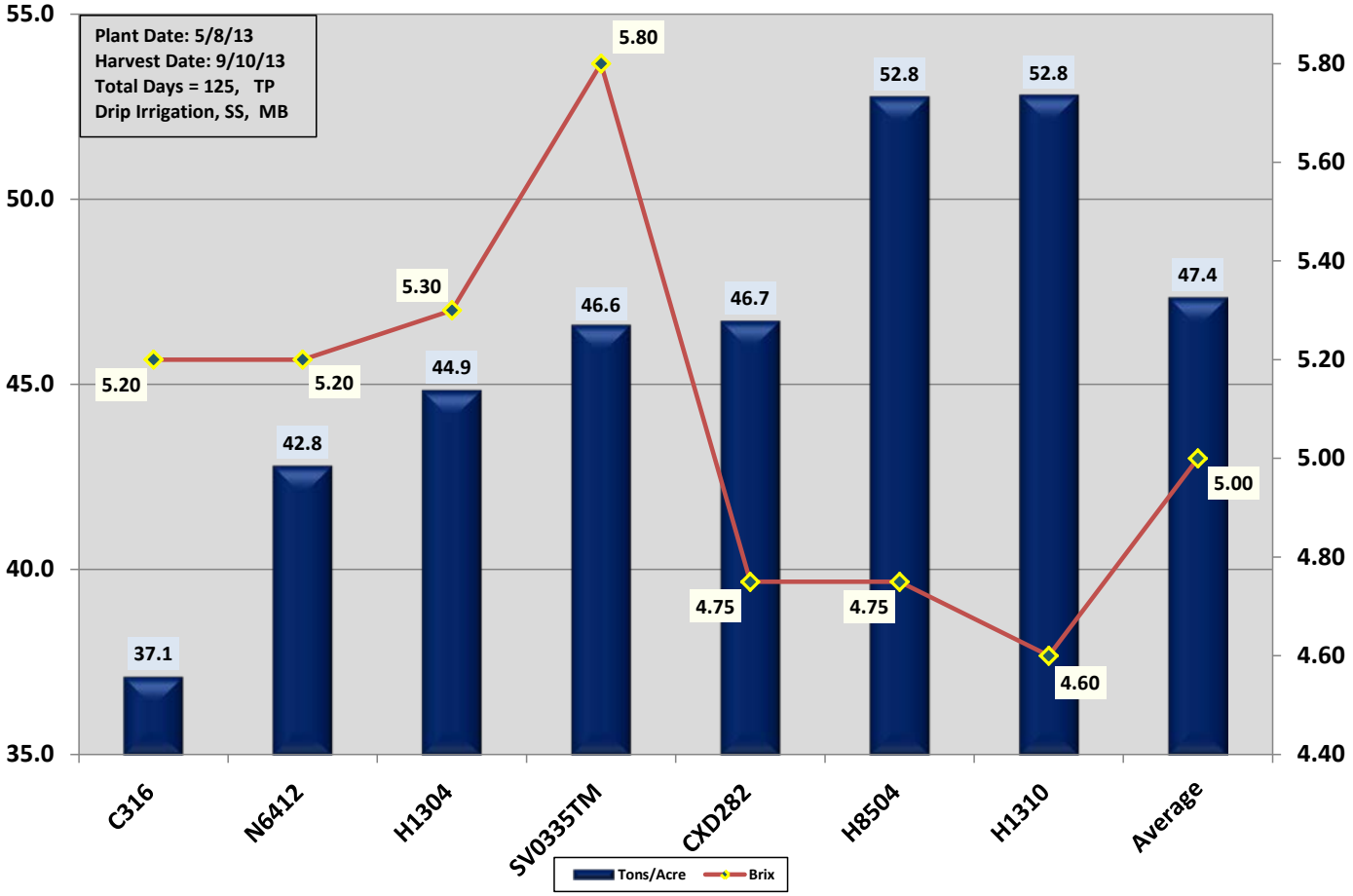
2013 Adaptive Trial – Sutter 3, F3



Corresponding PTAB Grades

Variety	Brix	Color	Mold	LU	pH	Green	MOT
CXD282	4.30	25.00	6.25	1.00	4.46	1.50	0.00
H8504	4.60	24.00	4.00	0.50	4.40	1.00	0.50
SV0335TM	5.00	23.00	10.50	1.00	4.41	1.00	0.00
H1310	4.60	25.00	2.50	0.00	4.50	1.50	0.25

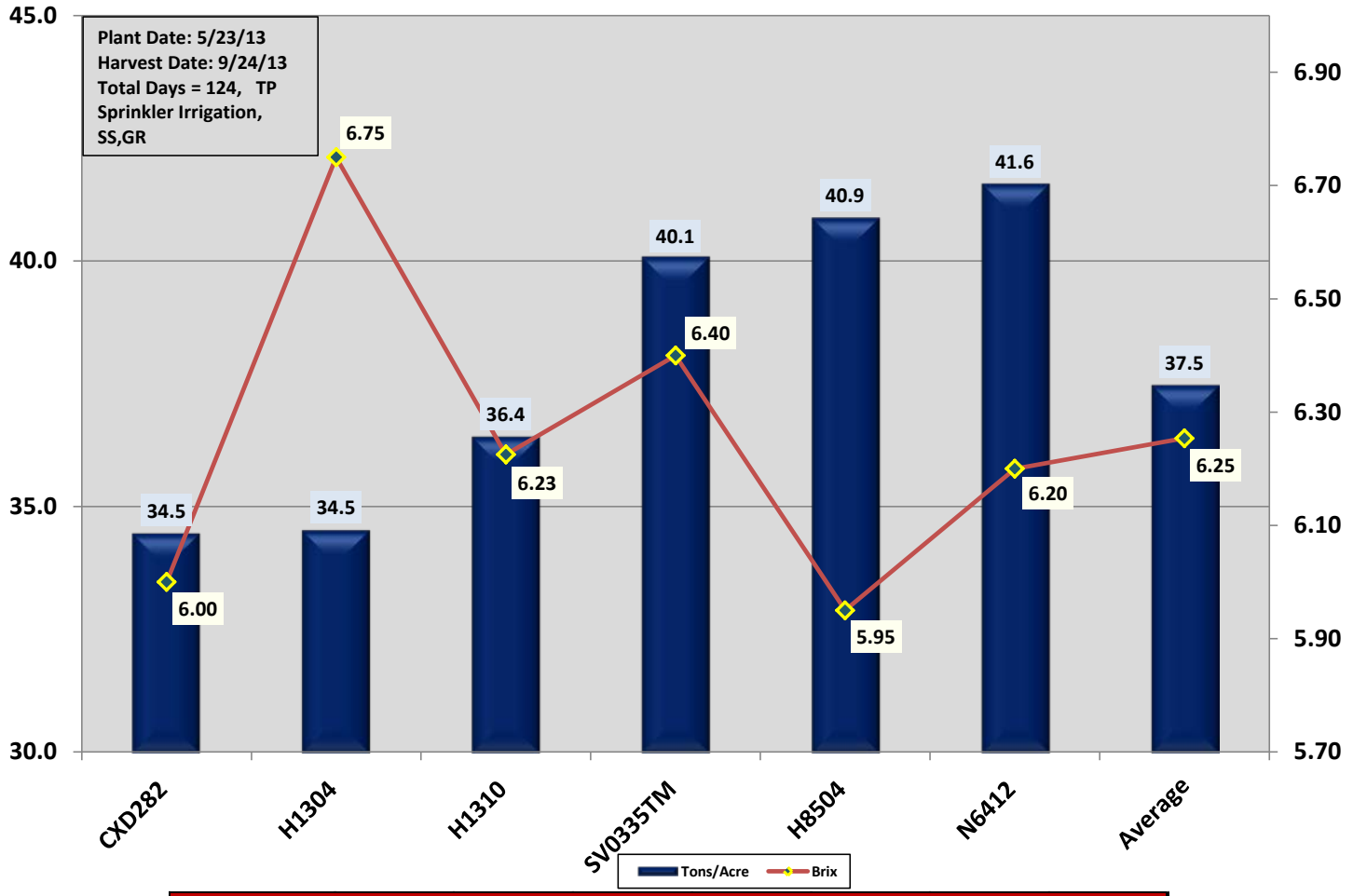
2013 Adaptive Trial – Sutter 4, F3



Variety	Brix	Color	Mold	LU	pH	Green	MOT
C316	5.20	25.00	8.00	2.00	4.48	4.50	0.50
N6412	5.20	29.00	4.00	8.50	4.44	3.00	3.00
H1304	5.30	23.50	3.00	4.50	4.50	3.25	0.75
SV0335TM	5.80	25.00	3.00	5.50	4.38	3.00	0.50
CXD282	4.75	24.50	4.25	1.25	4.47	7.00	0.25
H8504	4.75	23.50	2.00	0.25	4.27	7.00	0.75
H1310	4.60	26.00	5.00	1.00	4.42	7.75	1.50

Corresponding PTAB Grades

2013 Adaptive Trial – Yolo 6, F3



Corresponding PTAB Grades

Variety	Brix	Color	Mold	LU	pH	Green	MOT
CXD282	6.00	22.00	3.50	0.50	4.37	3.25	3.25
H1304	6.75	25.50	4.00	4.00	4.41	3.00	1.25
H1310	6.23	22.00	1.88	0.50	4.36	1.50	1.25
SV0335TM	6.40	25.00	2.25	5.00	4.31	0.75	4.50
H8504	5.95	26.00	2.75	1.00	4.33	2.25	1.00
N6412	6.20	22.00	0.50	2.00	4.37	0.50	7.50

2013 Adaptive & GT Trial
F3 Yield Correlation

Adaptive trial and GT trial configuration when planted in same location

Adaptive Trial Map

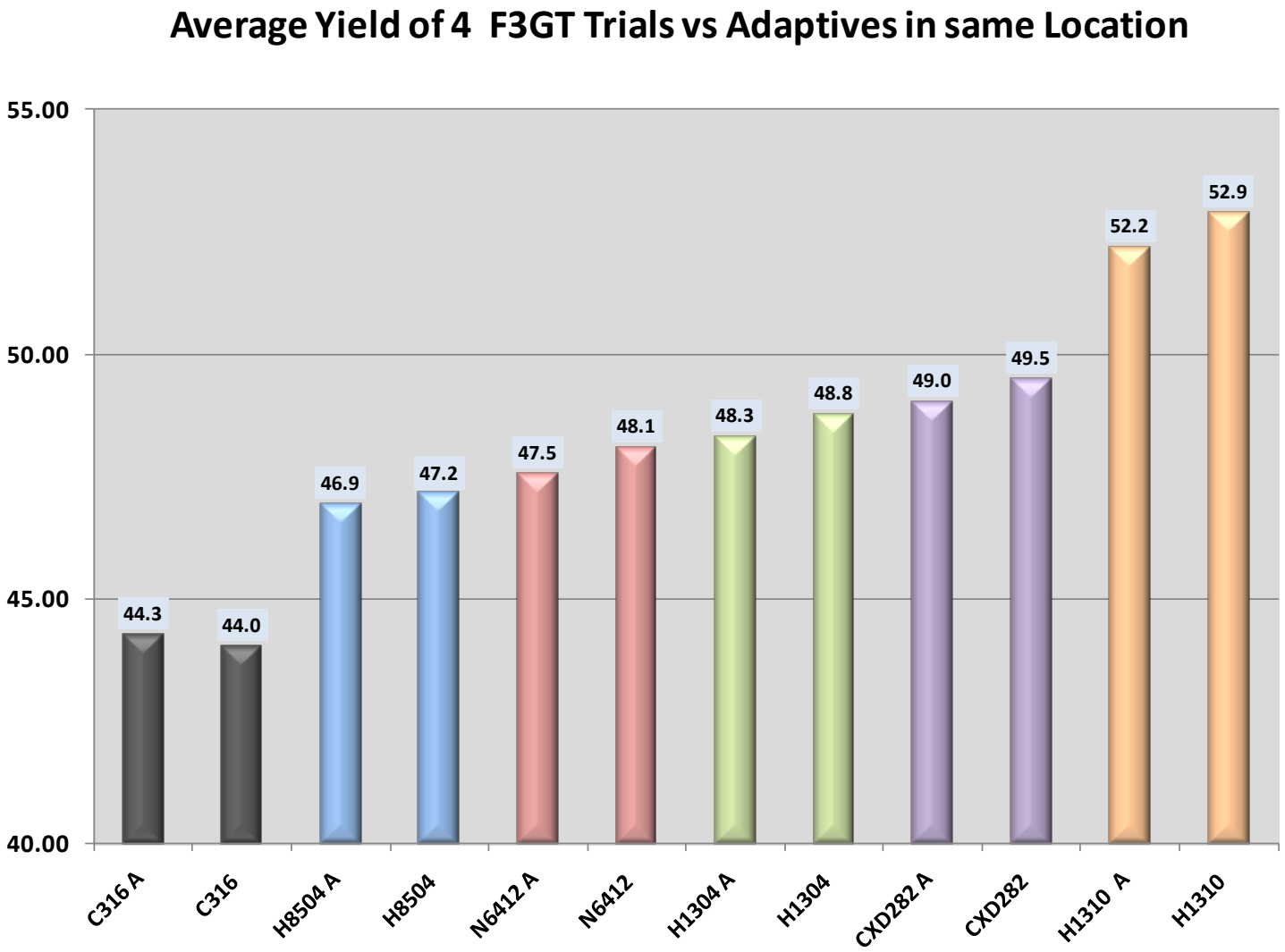
CXD282 3 beds	SV0335TM 3 beds	C316 3 bed	N6412 3 beds	H1310 3 beds	H8504 3 beds	H1304 3 beds	F3 GT Trial 3 beds	H1304 3 beds	H8504 3 beds	H1310 3 beds	N6412 3 beds	C316 3 beds	SV0335TM 3 beds	CXD282 3 beds

45 beds

GT Trial Map

17	26	10
16	25	9
15	24	8
14	23	7
13	22	6
12	21	5
11	20	4
26	19	3
25	18	2
24	10	1
23	9	17
22	8	16
21	7	15
20	6	14
19	5	13
18	4	12
10	3	11
9	2	26
8	1	25
7	17	24
6	16	23
5	15	22
4	14	21
3	13	20
2	12	19
1	11	18

2013 Adaptive & GT Trial
F3 Yield Correlation

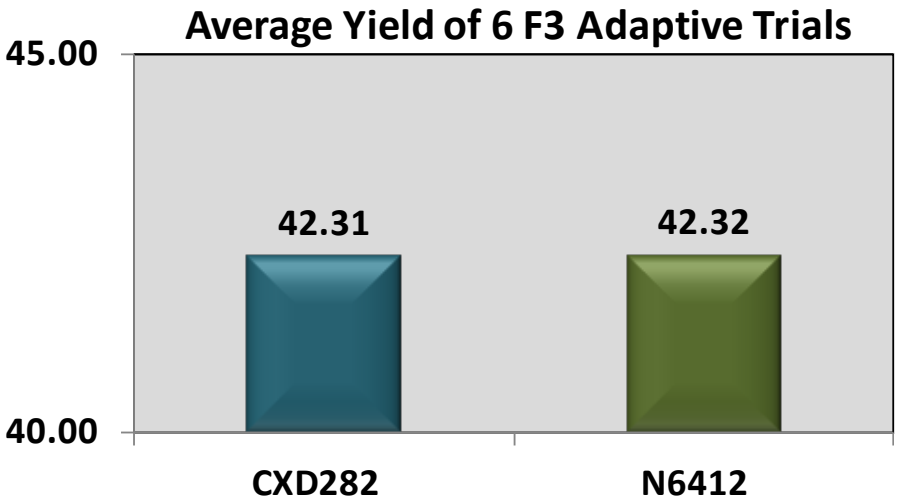


2014 Adaptive and Semi Commercial Varieties
Fusarium Wilt Race 3

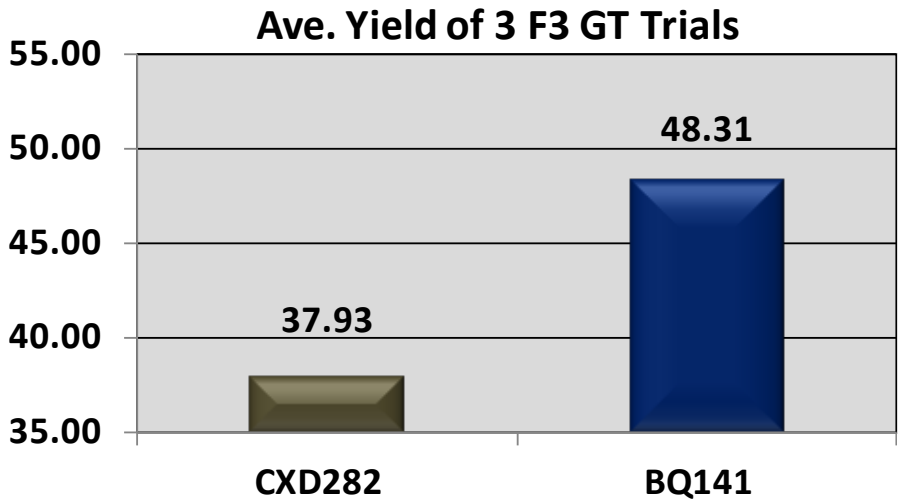
Variety	Maturity	Dis/Res	Comments
BQ141	120	VFFFNPtsw	TSW, Strong vine, Yielded 10 tons/acre more that than CXD282 in trials
N6412	116	VFFFNPLv	Early, High brix, Good Yields, Powdery Mildew tolerance
H1310	128	VFFFNPtsw	TSW, Yielded 5 tons/acre more than CXD282 in trials
BQ142	120	VFFFNPtsw	TSW, Strong vine, Yielded 5.5 tons/acre more that than CXD282 in trials
BP2	125	VFFFNPtsw	TSW, Yielded 5.5 tons/acre more than CXD282 in trials
SV0335TM	122	VFFFNPtsw	TSW, Very high brix, Good yields
SV8232TM	125	VFFFNPtsw	TSW, Good yields
HMX3907	122	VFFFN	Yielded 4 tons/acre more than CXD282 in trials

2014 Adaptive and Semi Commercial Varieties
Fusarium Wilt Race 3

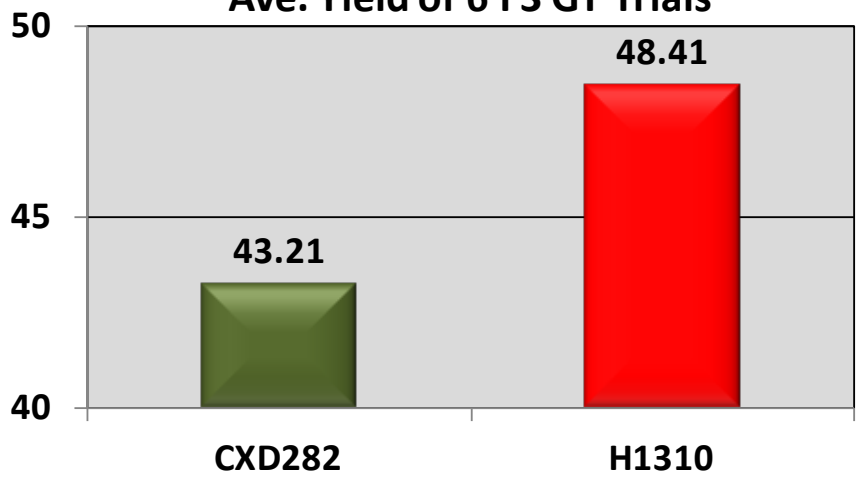
Semi Commercial



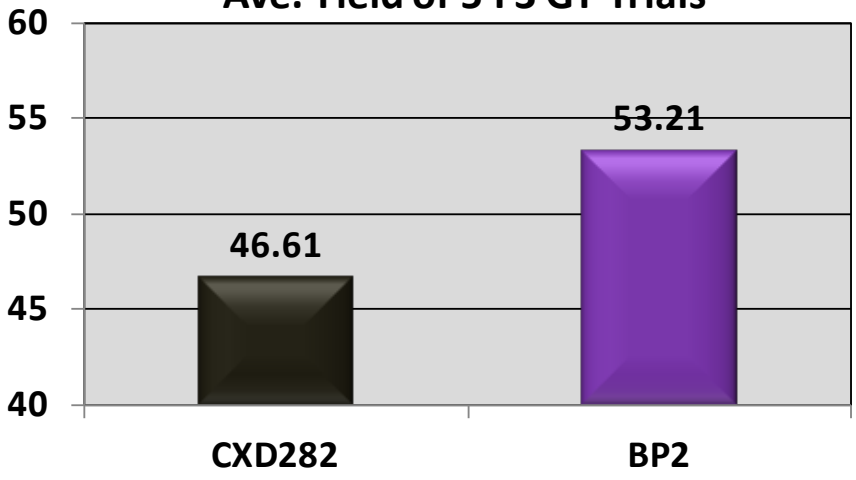
Adaptives



Adaptives



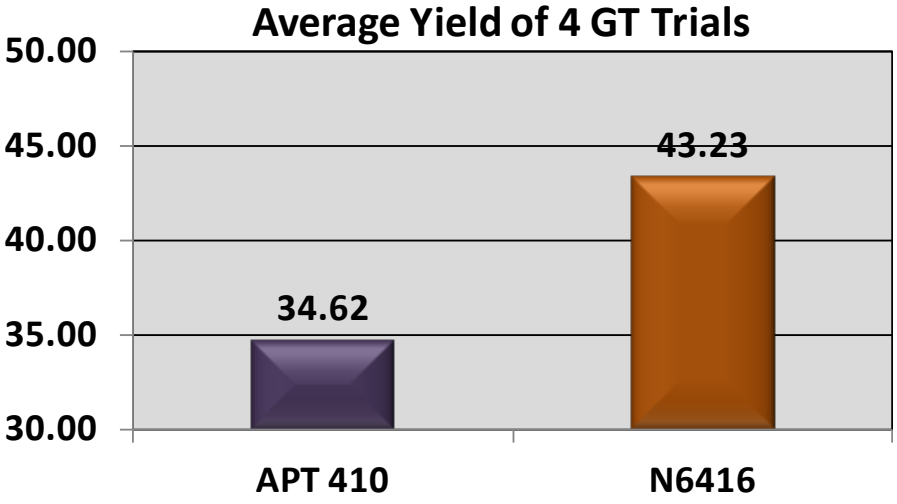
Adaptives



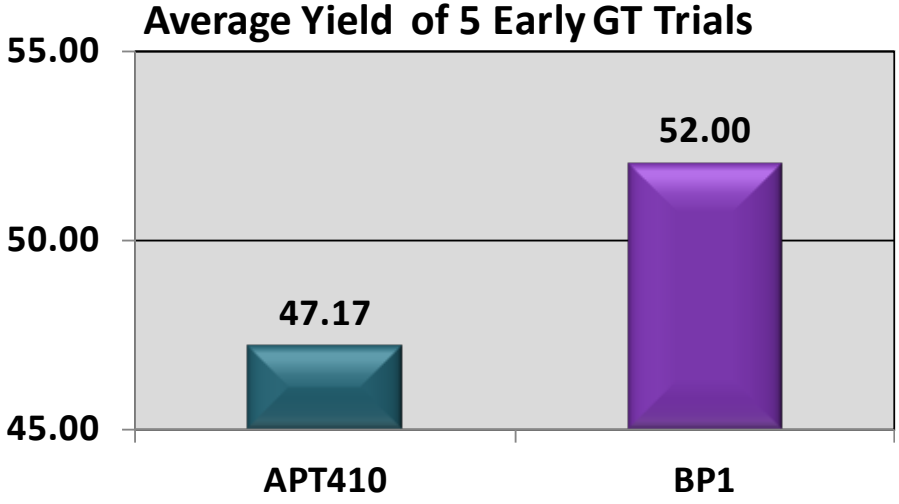
2014 Adaptive and Semi Commercial Varieties
Early Season – July Delivery

Variety	Maturity	Dis/Res	Comments
N6416	108	VFNPtsw	TSW, Yielded 9 tons/acre better than APT410 in trials, is not F2 resistant
BP1	110	VFFNP	Yielded 4.8 tons/acre more than APT410 in trials
H1301	105	VFF	Earlier than APT410, with yields of 4.8 tons/acre more in trials, no N resistance
SV0599TM	110	VFF	APT 410 maturity, with yields of 5.2 tons/acre more in trials
BQ273	110	VFFNPtsw	TSW, Strong vine with good yields

Semi Commercial



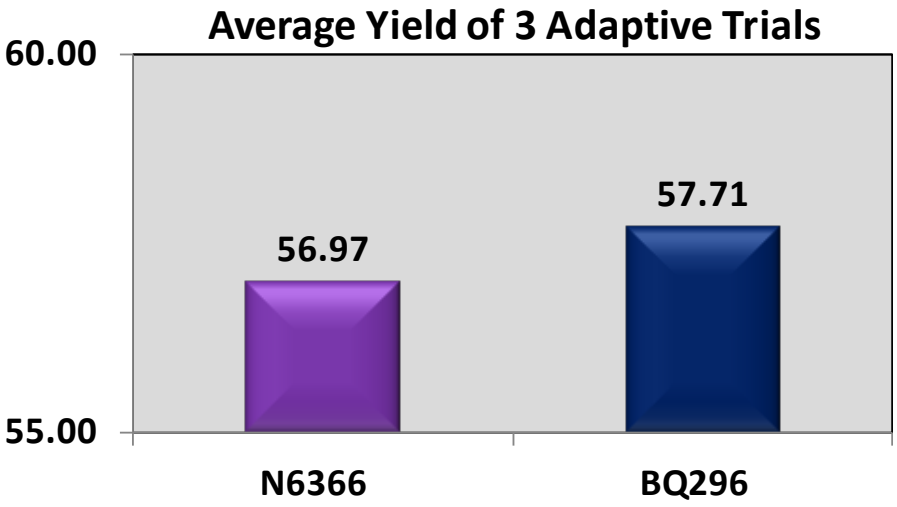
Adaptives



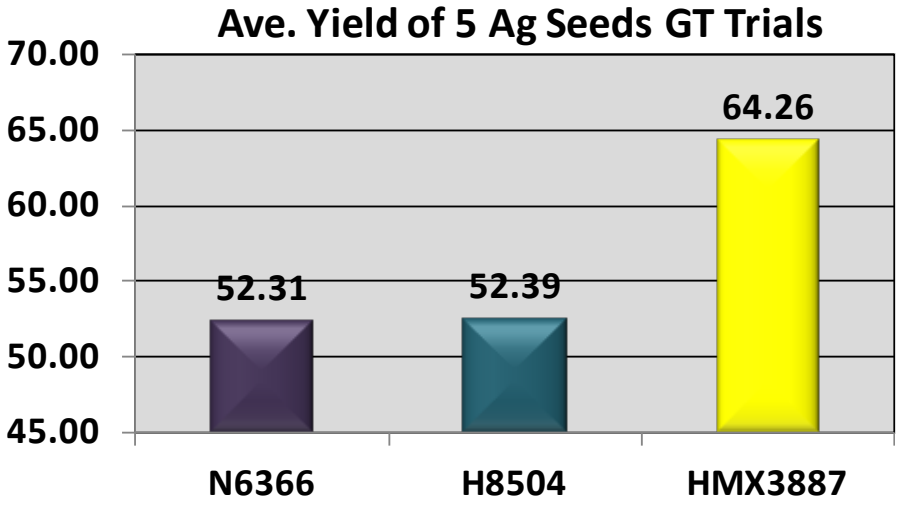
2014 Adaptive and Semi Commercial Varieties
Mid Season – August to September 10th Delivery

Variety	Maturity	Dis/Res	Comments
HMX3887	120	VFFNtsw	TSW, Very strong vine, Yielded 11.9 tons/acre more than N6366 in trials
BQ296	122	VFFNPtsw	TSW, Adaptable, High brix, and Good yields
SV8516TM	122	VFFNPtsw	TSW, Yielded 5 tons/acre more than N6366 in trials
SV7707TM	122	VFFNPtsw	TSW, Thick Viscosity,with Strong vine

Semi Commercial



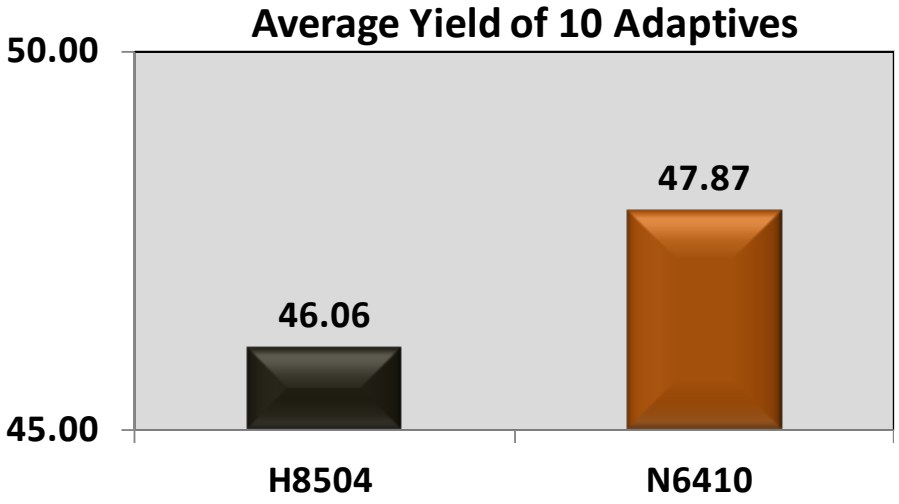
Adaptives



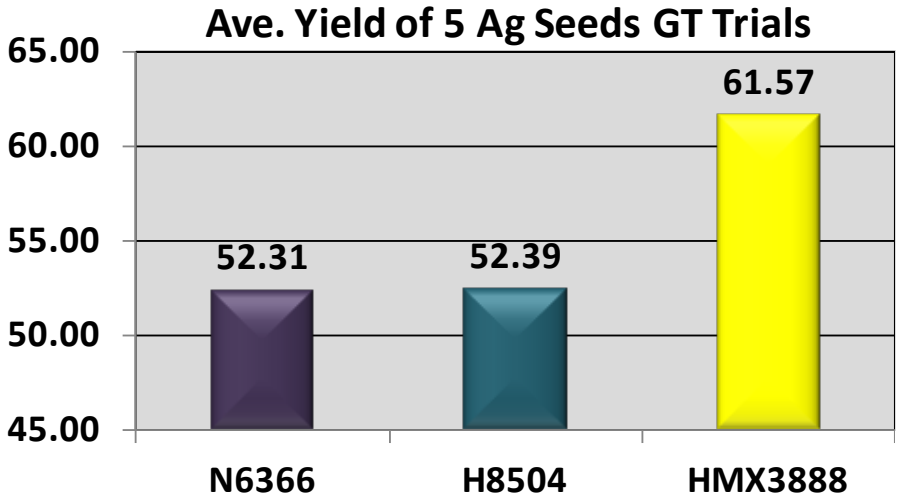
2014 Adaptive and Semi Commercial Varieties
Late Season – September, October Delivery

Variety	Maturity	Dis/Res	Comments
HMX3888	125	VFFNtsw	TSW, EFS, Strong vine, Yielded 9.2 tons/acre more than H8504 in trials
N6410	130	VFFN	EFH, Adaptable, Thick with Brix, Good yields
H1170	126	VFFN	EFS, Adaptable, Thick with Brix, Good yields
N6415	125	VFFNPtsw	TSW, EFH, Thick with Brix, Good yield
HMX3885	120	VFFNtsw	TSW, EFS, Strong vine, High Brix, Good yield

Semi Commercial



Adaptives



Genetics Role in the Tomato Business

Past

Present

Future

2013 Northern Trial Cooperators

Thank you – Without you, none of this work is possible

Grower	County
Jim Borchard	Yolo
Bullseye Farms	Yolo
Button & Turkovich	Yolo
Dan Best Ranch	Yolo
Donald Beeman	Yolo
Dougherty Bros.	Sutter
E & H Farms	Solano
Geer Ranch	Yolo
Harlan Family Farms	Yolo
Hunn, Merwin & Merwin	Yolo
J & P Farms	Sutter
Joe Yeung Farms	Yolo
LaGrande Farms	Colusa
Liberty Trust	Yolo
Lucero Farms	Yolo

Grower	County
Matteoli Bros.	Sutter
Mayflower Farms	Colusa
Joe Muller & Sons	Yolo
Payne Bros. Ranches	Yolo
Reveille Farms	Solano
Richter Bros.	Sutter
Gene Robben Farms	Solano
Rominger Bros.	Yolo
Sam Reynolds	Colusa
Schreiner Farms	Yolo
T & P Farms	Colusa
Triad Farms	Yolo
Tsutsui Ent.	Yolo
Van Ruiten Bros.	Sutter
Vann Bros.	Colusa