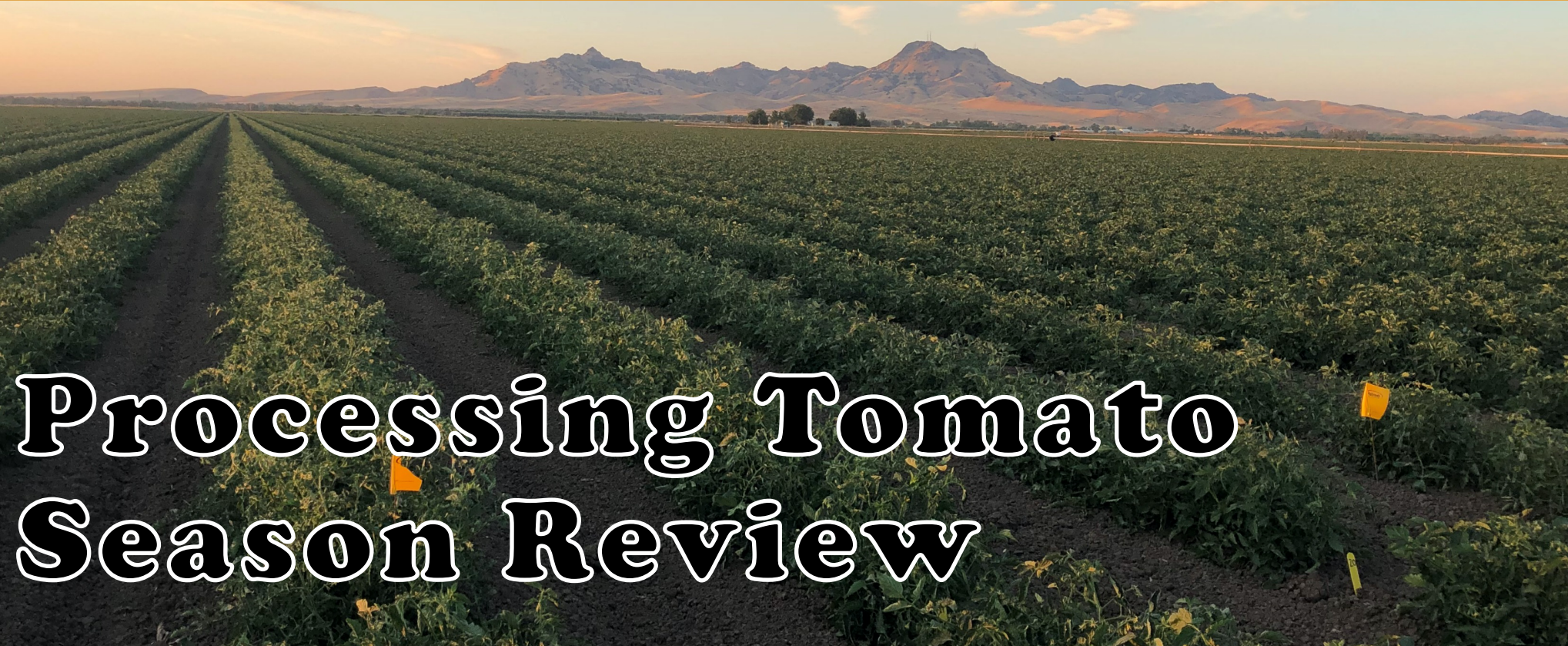


2019



**Processing Tomato
Season Review**

January 8th



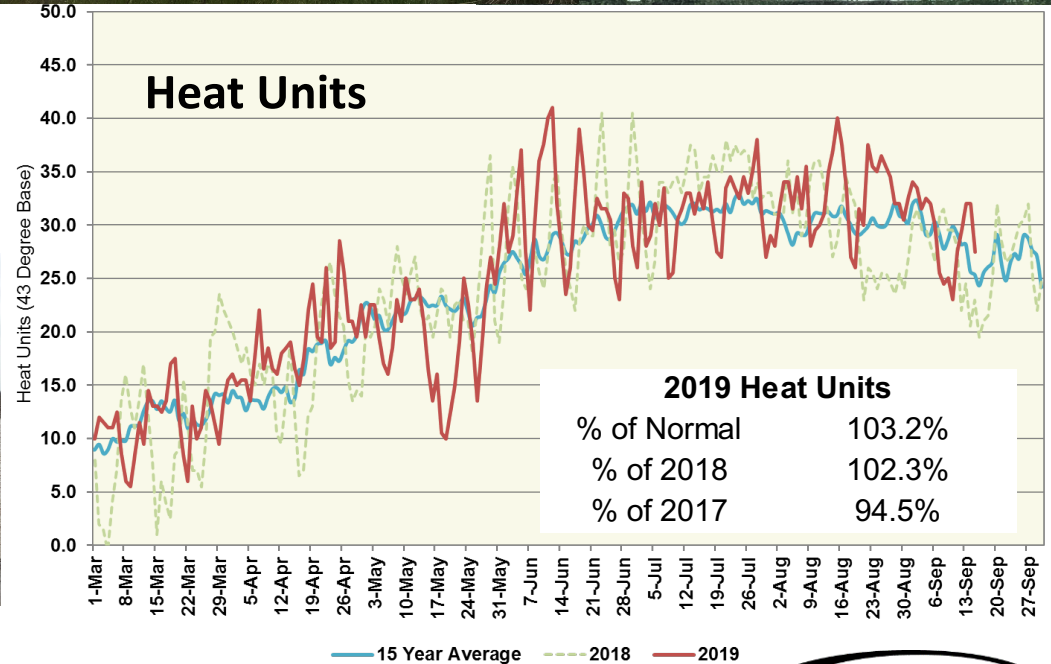
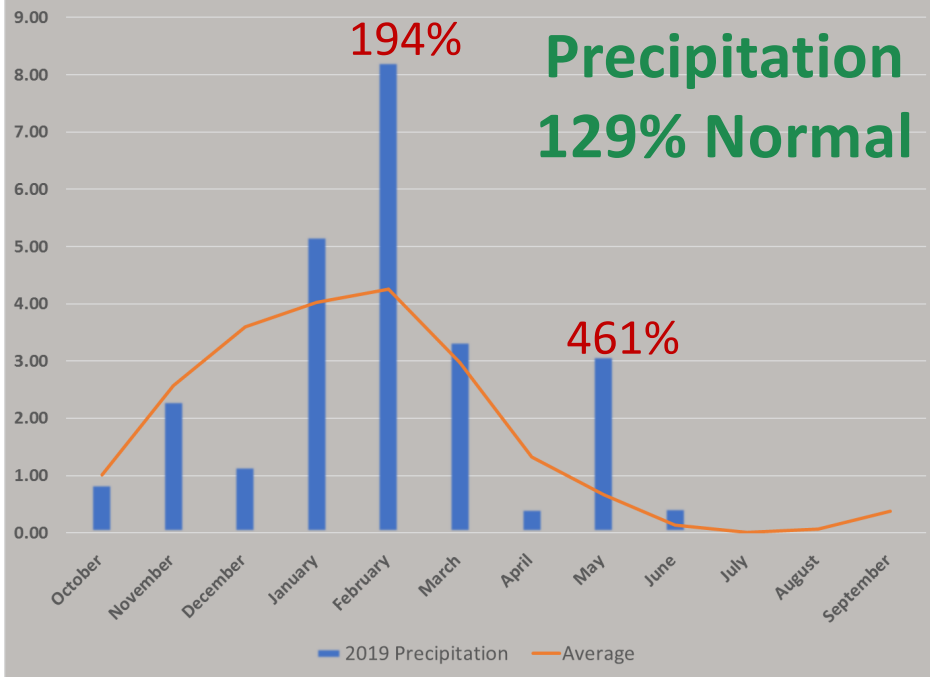
Industry Production Goal

Industry Intention:
12,250,000 Tons

What was achieved:
11,182,979 Tons

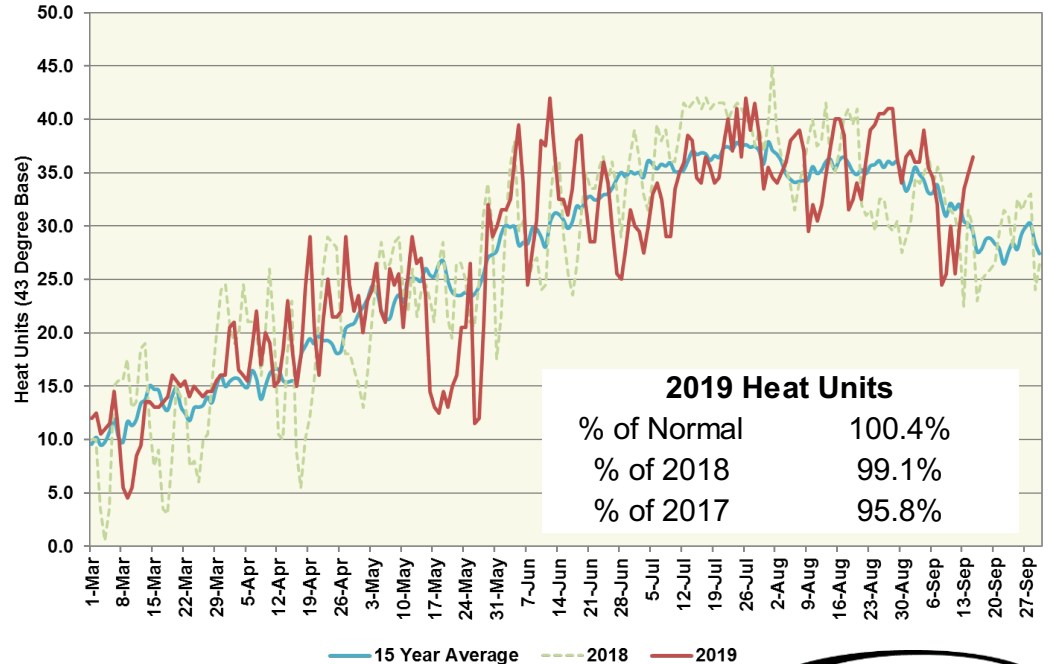
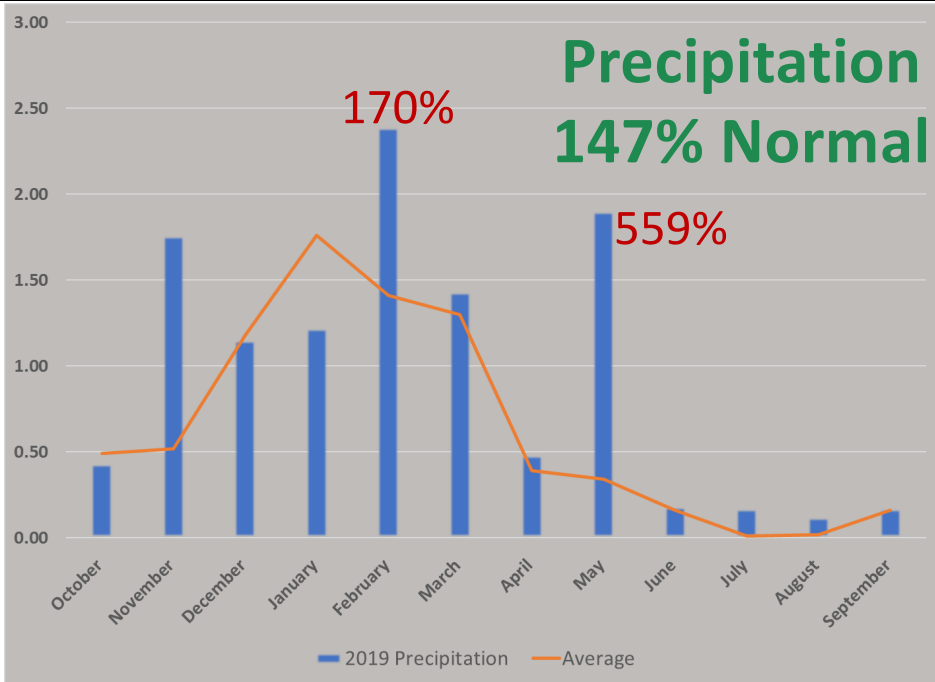
2019 CA Tomato Harvest

Woodland: Weather / Challenges



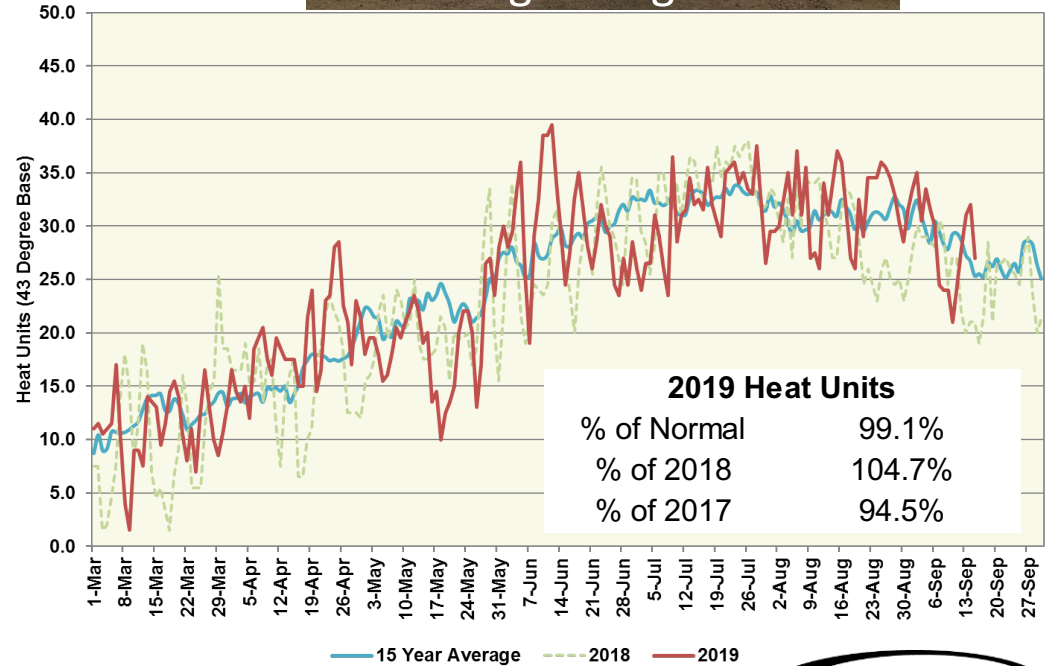
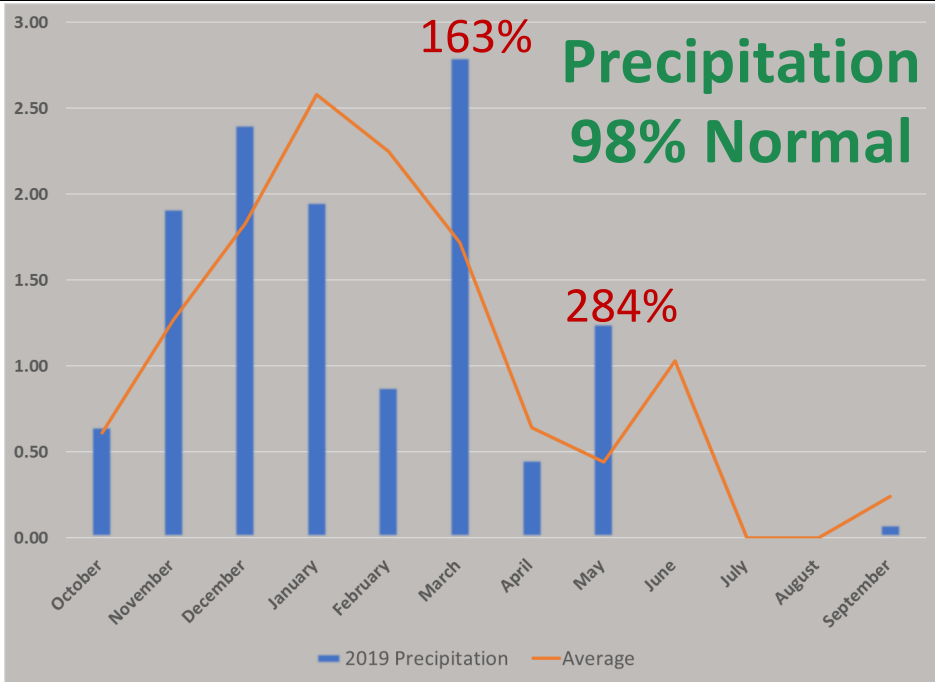
2019 CA Tomato Harvest

Five Points: Weather / Challenges



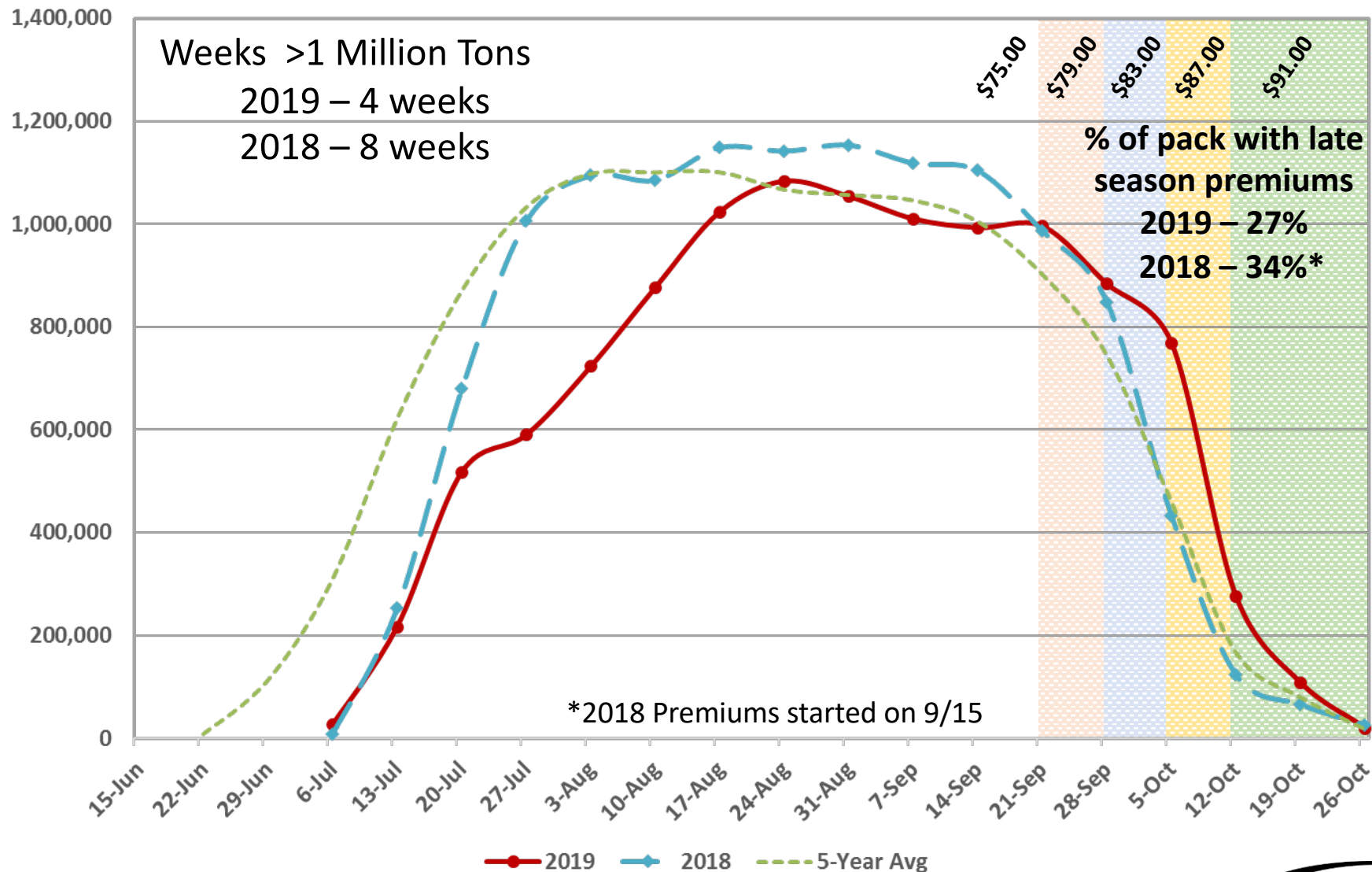
2019 CA Tomato Harvest

Patterson: Weather / Challenges



2019 CA Tomato Harvest

2 Year Tons / Week Curve



2019

7



County Review

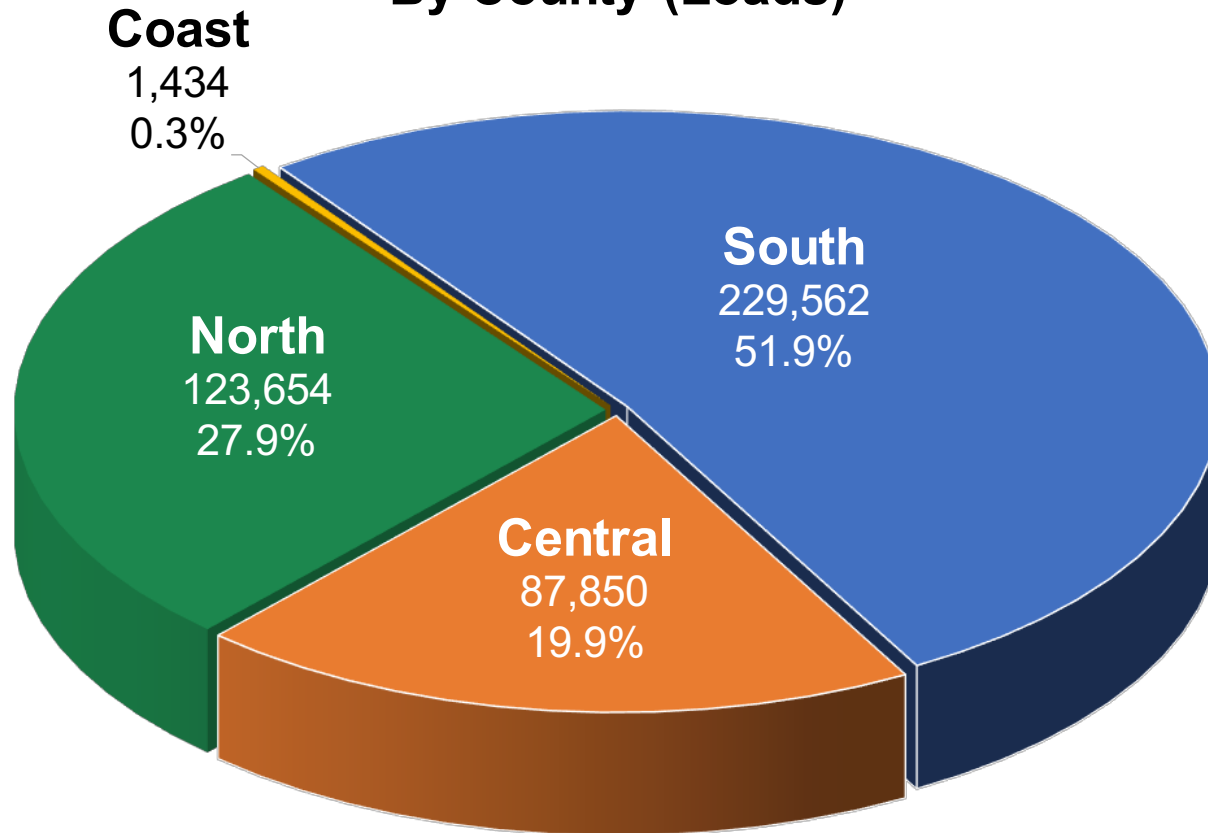
Total
442,500

California Regions

8

CA Total Loads

2019 CA Production By County (Loads)



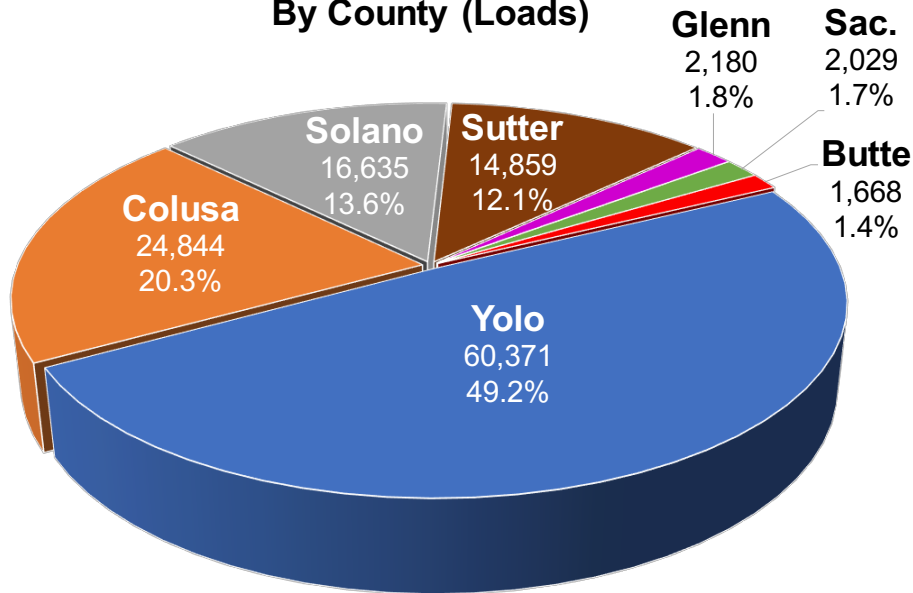
% State
27.9%

California Regions

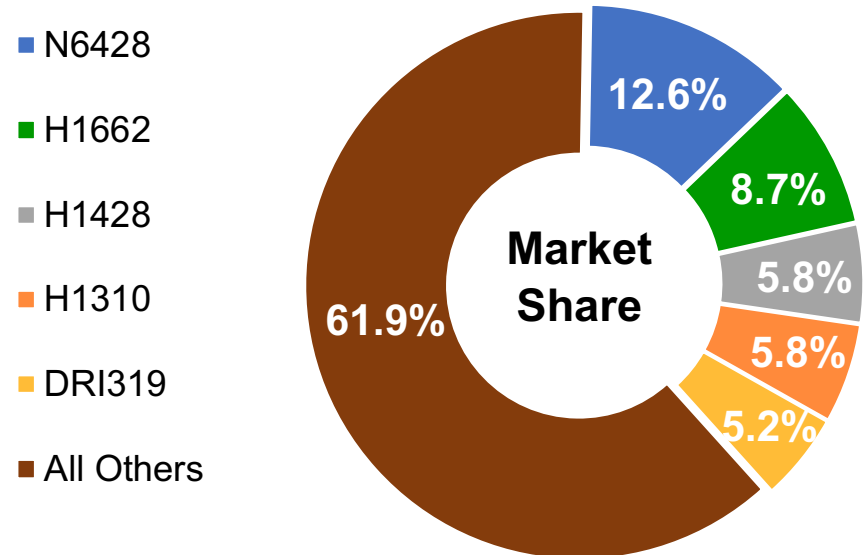
North Counties by Loads

9

2019 North Production
By County (Loads)



North Top 5 Varieties



% State

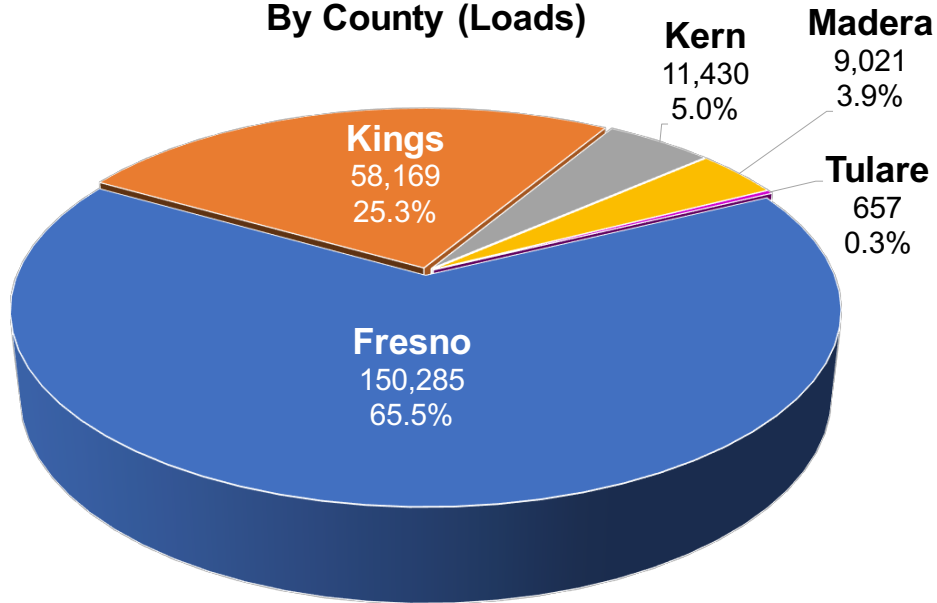
51.9%

California Regions

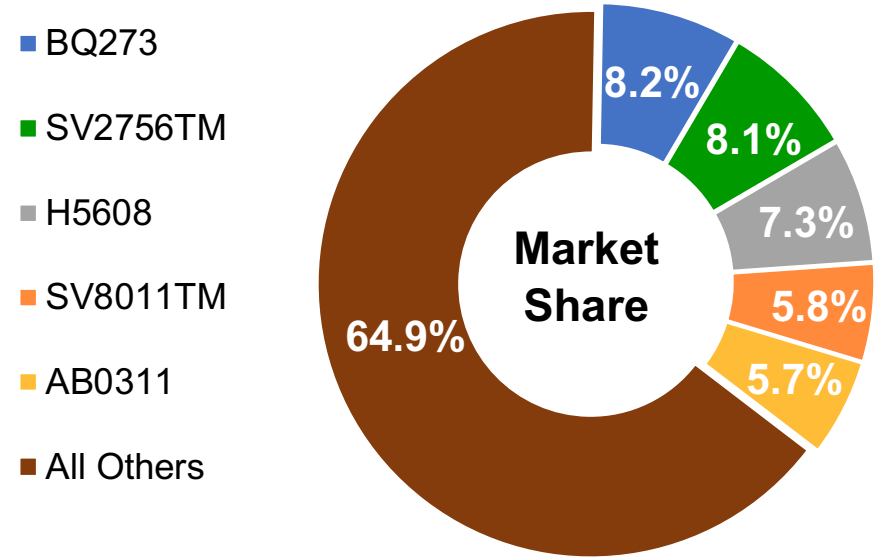
10

South Counties

2019 South Production
By County (Loads)



South Top 5 Varieties



California Regions

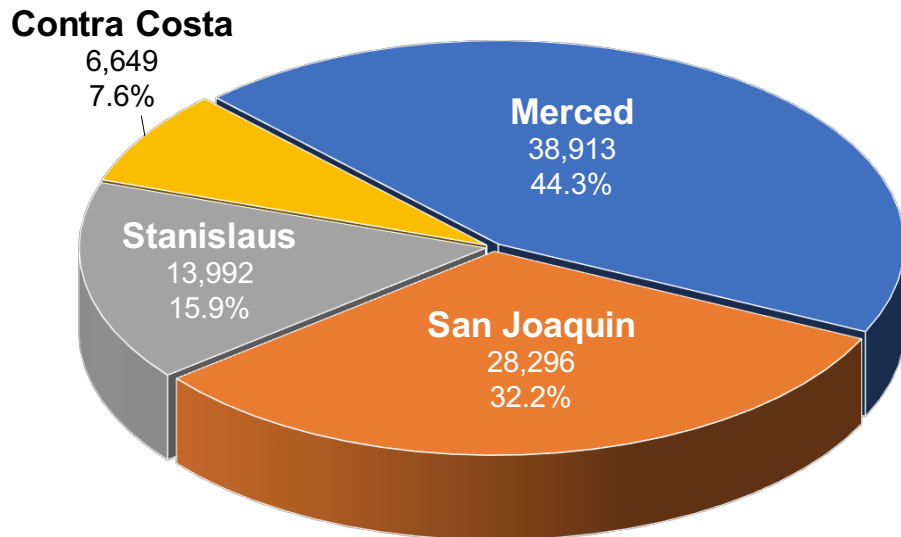
11

% State

19.9%

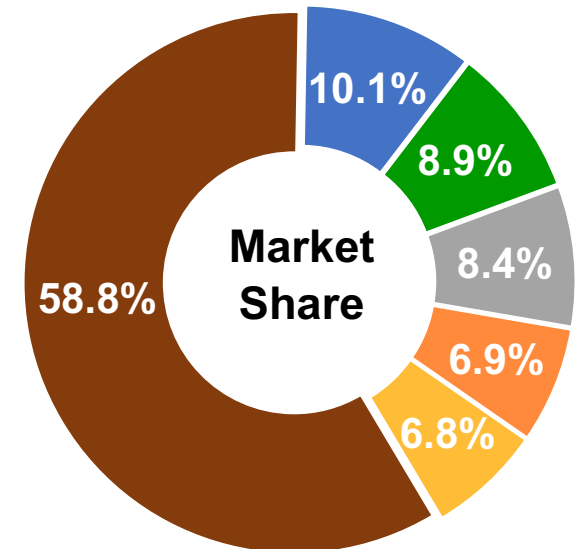
Central Counties

2019 Central Production By County (Loads)



Central Top 5 Varieties

- DRI319
- H1428
- H1662
- AB0311
- H4707
- All Others



% State

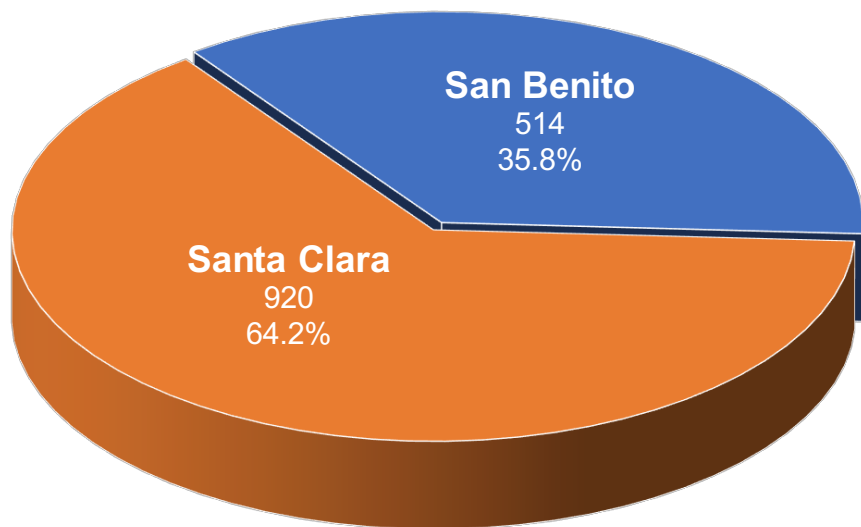
0.3%

California Regions

12

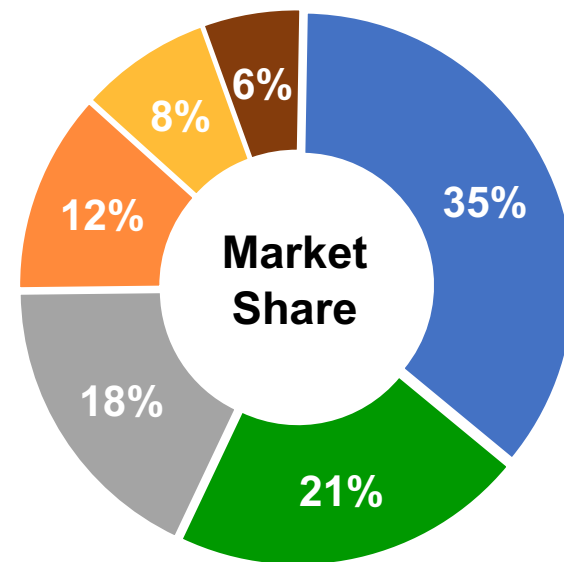
Coast Counties

**2019 Coast Production
By County (Loads)**



Coast Top 5 Varieties

- N6366
- N6415
- SV2756TM
- HM1892
- HM9905
- All Other



Use Category Qualifications

Early

Maturity 117 Days or Less

Thin

Predicted Paste Bostwick ≥ 5.00

Intermediate

Predicted Paste Bostwick 3.31 to 4.99

Thick

Predicted Paste Bostwick ≤ 3.30

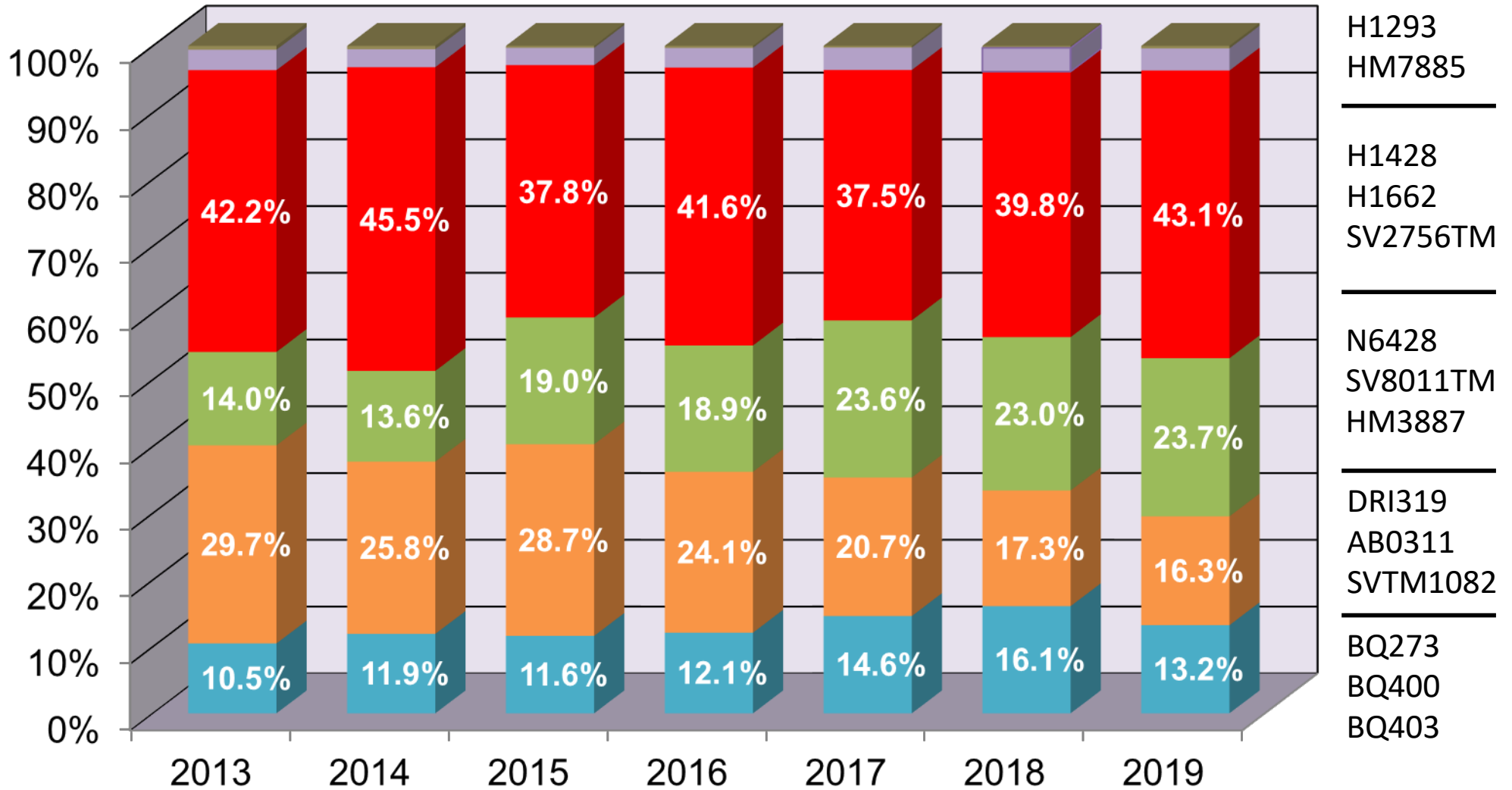
Pear

Pear Shaped

2019 CA Tomato Harvest

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Use Category History



- H1293
- HM7885

- H1428
- H1662
- SV2756TM

- N6428
- SV8011TM
- HM3887

- DRI319
- AB0311
- SVTM1082

- BQ273
- BQ400
- BQ403

2019 CA Tomato Harvest

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Use Category by Region

Final PTAB Report

Class	North	Central	South	Coast	Total
Early	13.4%	2.8%	17.2%	0.0%	13.2%
Thin	13.0%	27.4%	13.6%	36.9%	16.3%
Intermediate	37.2%	22.6%	16.9%	24.3%	23.7%
Thick	33.9%	42.8%	48.2%	38.8%	43.1%
Pear	2.2%	4.2%	3.5%	0.0%	3.3%

2019 CA Tomato Harvest

Supplier Historical Market Share

16

Supplier	2015	2016	2017	2018	2019	# of Varieties
Heinz	35.5%	31.4%	27.1%	30.3%	31.6%	33
Seminis	14.7%	17.0%	19.5%	23.2%	25.0%	22
Nunhems	24.3%	21.7%	16.8%	16.2%	15.0%	19
Harris Moran	14.9%	19.6%	22.8%	13.8%	12.3%	24
Woodbridge	2.7%	4.7%	8.7%	12.1%	11.1%	13
United Genetics	5.9%	3.6%	3.0%	2.7%	2.6%	13
Orsetti	0.5%	0.1%	0.0%	0.5%	1.3%	3
BHN	0.9%	1.4%	1.6%	0.8%	0.7%	10

2019 CA Tomato Harvest

Supplier Market Share by Region

17

Supplier	North	Central	South	Coast	Total
Heinz	34.1%	36.9%	28.4%	-	31.6%
Seminis	18.6%	30.0%	26.6%	17.9%	25.0%
Nunhems	18.7%	14.9%	12.8%	57.9%	15.0%
Harris Moran	15.7%	12.4%	10.3%	19.7%	12.3%
Woodbridge	7.6%	3.5%	16.0%	4.5%	11.1%
United Genetics	1.8%	1.9%	3.4%	-	2.6%
Orsetti	0.8%	0.1%	2.0%	-	1.3%
BHN	2.4%	-	-	-	0.7%

2019 CA Tomato Harvest

18

Top 15 Varieties – 2010 vs. 2019

2010

Variety	Loads	Years in Market
N6366	90,761	6
H8504	57,814	5
AB2	53,677	8
H2401	34,523	8
H9780	29,684	12
H8004	22,998	5
H9663	12,666	13
CXD255	10,713	4
PS345	10,240	5
H4707	10,204	2
CXD187	9,432	13
APT410	8,836	13
N6368	8,635	5
H8892	7,685	16
HP303	7,381	13
Total	375,249	8.5

% of Pack: 79.3%

2019

Variety	Loads	Years in Market
N6428	26,976	3
H1428	25,920	4
BQ273	24,907	5
AB0311	23,733	9
SV8011TM	23,050	4
H1662	22,199	2
DRI319	20,550	8
SV2756TM	19,657	4
H4707	18,664	11
H5608	18,063	10
H2401	13,886	17
SVTM1082	13,660	2
N6415	10,385	5
BQ400	9,635	3
BQ403	9,616	3
Total	280,901	6.0

% of Pack: 63.5%

2019 CA Tomato Harvest

Variety Movement

19

Top 10 Increased

Variety	Loads	% Gained
H1662	12,404	126.6%
SVTM1082	11,558	549.9%
HM58841	6,052	376.1%
H1428	5,903	29.5%
H1310	5,278	164.3%
BQ403	4,654	93.8%
N6426	3,651	185.7%
HM5235	3,542	204.6%
BOS811	3,530	176.9%
SV8011TM	3,172	16.0%
Total	59,744	88.8%

Top 10 Decreased

Variety	Loads	% Lost
BQ273	-17,205	40.9%
AB0311	-13,720	36.6%
HM3887	-8,397	52.0%
N6366	-6,337	54.3%
HM4885	-6,205	41.3%
N6416	-6,115	77.7%
H4707	-5,931	24.1%
DRI319	-4,510	18.0%
N6415	-4,074	28.2%
H2401	-4,055	22.6%
Total	-76,549	36.1%

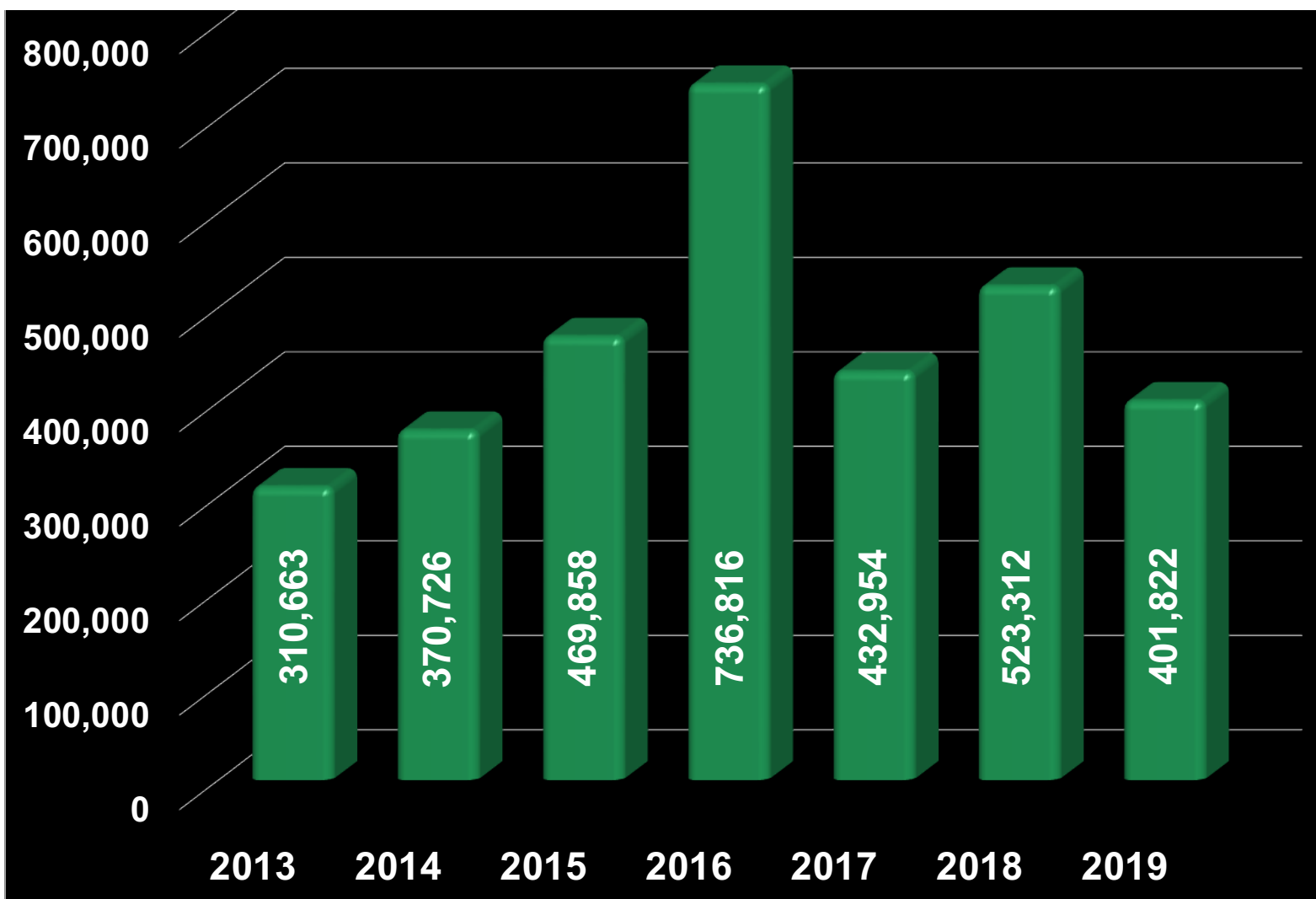
Vs. 2018

-0.7%

2019 CA Tomato Harvest

20

Organic Tons 3.6% of Market



Based on Final PTAB

Vs. 2018

-0.7%

2019 CA Tomato Harvest

21

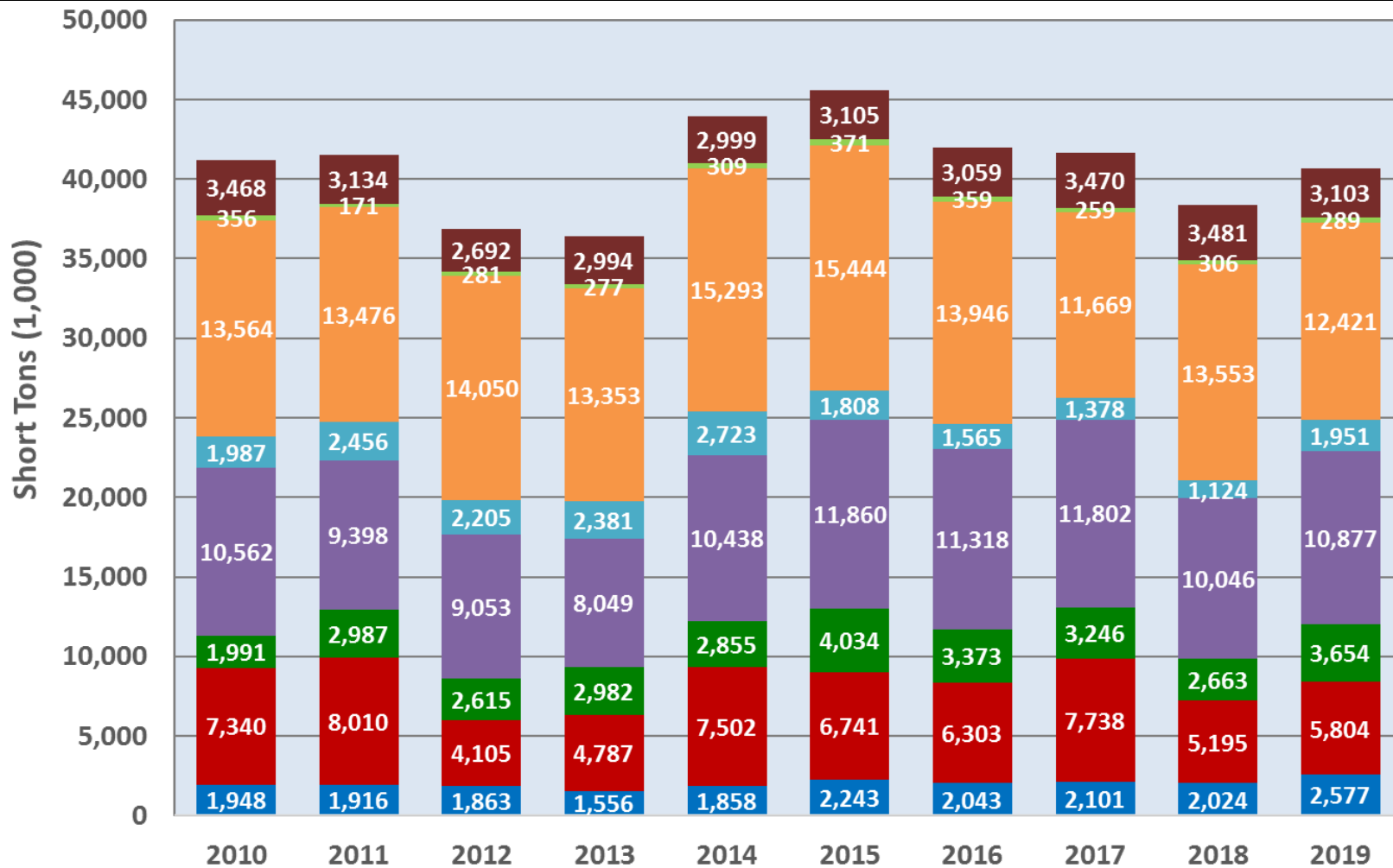
Organic Tons 3.6% of Market

Region	County	2018	2019	% State
North	Colusa	16,873	2,323	27.8%
	Sutter	31,452	25,373	
	Yolo	98,221	83,893	
North Total		146,546	111,589	
Central	Merced	26,457	28,480	8.4%
	San Joaquin	-	3,763	
	Stanislaus	1,944	1,331	
Central Total		28,401	33,574	
South	Fresno	232,482	209,095	63.9%
	Kern	51,143	25,602	
	Kings	44,221	21,962	
	Madera	17,330	-	
South Total		345,176	256,659	
Coast	San Benito	3,189	-	0%
Coast Total		3,189	0	
Organic Total		523,312	401,822	100.0%

Based on Final PTAB

2019 CA Tomato Harvest

World Production History



■ Africa
 ■ Asia Pacific
 ■ Eastern Europe
 ■ Western Europe
 ■ Middle East
 ■ North America
 ■ Oceania
 ■ South America

2019

23



Variety Advancement

AgSeeds Trial Breakdown

2019 AgSeeds Trials

Plot: 65 Locations

Chemistry & observational horticultural performance

GT: 48 Locations

First test of yield and commercial viability

Adaptive: 59 Locations

Understanding statewide commercial versatility

Specialty: 28 Locations

All other trials testing chemistry, yield, and dice recovery

Total: 200 Trials

Northern Trial Cooperators

25

Amistad Ranches

Barcellos Ranch

Barrios Farms

Barsoom Ranch

Bullseye Farms

Button & Turkovich

Dan Best Ranch

Dettling Farms

Donald Beeman

Doug Chan

Dougherty Bros.

E & H Farms

Fong Farms, Inc.

Geer Ranch

Gene Robben Farms

Harlan Family Farms

Holdener Farms

Hunn, Merwin & Merwin

J.H. Meek & Sons

Jason Bryson

Jim Borchard

Joe Muller and Sons

Joe Yeung Farms

Justin & Andrew Wallace

LaGrande Farms

Liberty Trust

Lucero Farms

Mayflower Farms

Muller Ranch

Nakahara Farms

Oryza Partnership

Park Farming

Payne Brothers Ranches

Reveille Farms

Richter Bros.

Sam Reynolds

Schreiner Farms

T & P Farms

Van Ruiten Bros.

Wallace Bros.

Y. Aoki Farms

Tomato Spotted Wilt Virus

California History

26

2006

The first outbreak of the Spotted Wilt Virus in the California market. No commercial varieties were available



2008

The first commercial varieties with TSW resistance came to the market: HM4801 and DRI8058.



2010

The number of commercial varieties that carried TSW resistance grew to 8.



2020

There are 91 TSW resistant varieties available commercially in California. 100% of all new varieties have TSW resistance.

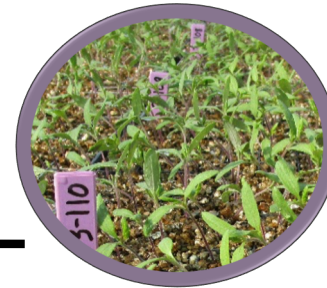


EFS™ / EFH

California History

1996

The first year an EFS™ / EFH variety is introduced to the California market (H9492). The best holding variety was BOS3155.



2000

The first year EFS™ / EFH varieties were publicized in our variety guide. There was a total of 4 varieties all from a single supplier.



2010

The industry offers 19 EFS™ / EFH varieties to the California market, which helped alleviate some fear of harvesting into October.



2020

There are 35 EFS™ / EFH varieties available commercially in all classes of maturity.



Vs. 2018

1.4%

2019 CA Tomato Harvest

28

Use Category: EFS™/ EFH, 46.4% of Market

Variety	Supplier	Attributes	Loads		Solids		Harvested by 9/7
			2019	2018	2019	2018	
N6428	Nunhems	F3, EFH	26,976	-1.2%	4.93	4.77	55.7%
H1428	Heinz	EFS™	25,920	29.5%	4.92	4.74	41.0%
SV2756TM	Seminis	EFH	19,657	-4.8%	4.87	5.15	41.9%
H4707	Heinz	EFS™	18,664	-24.1%	4.86	4.79	57.9%
H2401	Heinz	EFS™	13,886	-22.6%	4.83	4.70	56.3%
N6415	Nunhems	EFH	10,385	-28.2%	4.96	4.77	43.3%
HM4885	Harris Moran	EFH	8,836	-41.3%	5.05	4.94	65.8%
H5702	Heinz	EFS™	8,100	-30.1%	4.75	4.71	42.2%
H1310	Heinz	F3, EFS™	8,491	164.3%	5.02	4.80	18.0%
HM58841	Harris Moran	EFH	7,661	376.1%	5.17	5.35	40.3%
EFS™ / EFH Total			205,386	-3.5%	4.95	4.87	46.6%

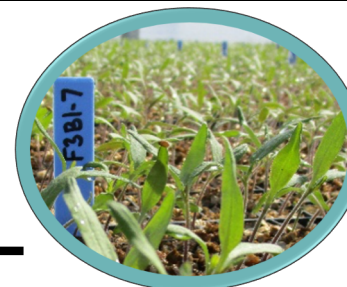
Based on Final PTAB

Fusarium Race 3 California History

29

1990-1995

The first time Fusarium Race 3 appears in California.



2009

The first year a semi-acceptable F3 resistant variety (CXD282) becomes commercial.



2014

The number of commercial varieties that carried F3 resistance grew to 3.



2020

There are 30 F3 resistant varieties commercially available. Over half of new varieties evaluated have F3 resistance.



Vs. 2018

9.5%

2019 CA Tomato Harvest

30

Use Category: F3, 21.7% of Market

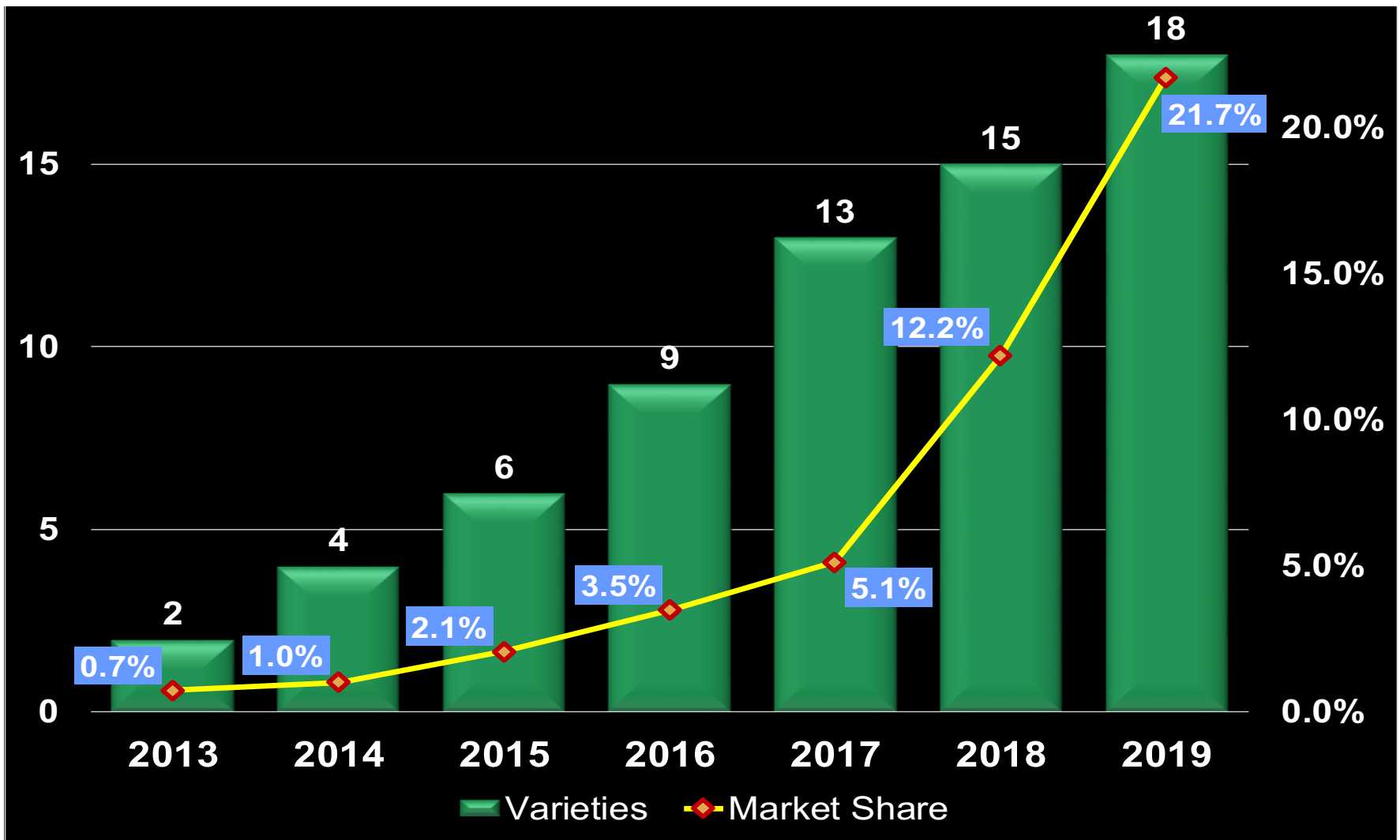
Variety	Supplier	Attributes	Loads		Solids		Harvested by 9/7
			2019	2018	2019	2018	
N6428	Nunhems	F3, EFH	26,976	-1.2%	4.93	4.77	55.7%
H1662	Heinz	F3	22,199	126.6%	4.97	4.91	27.5%
SVTM1082	Seminis	F3	13,660	549.9%	5.50	5.36	70.2%
H1310	Heinz	F3, EFS™	8,491	164.3%	5.02	4.80	18.0%
HM5235	Harris Moran	F3	5,273	204.6%	5.27	5.25	82.4%
N6434	Nunhems	F3, EFH	4,877	25.8%	4.88	5.01	31.5%
BP13	BHN	F3	2,898	-7.4%	4.76	4.53	100.0%
BQ413	Woodbridge	F3	2,164	1296.1%	4.64	4.78	99.1%
N6441	Nunhems	F3, EFH	2,012	1337.1%	5.05	4.76	36.1%
SVTM9011	Seminis	F3	1,702	-	5.56	-	76.3%
F3 Total			96,069	86.7%	5.05	5.06	47.0%

Based on Final PTAB

2019 CA Tomato Harvest

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The Growth of F3 and Genetics



2019 CA Tomato Harvest

32

The Growth of F3 and Genetics

Year	PTAB Rank	Variety		
		1st	2nd	3rd
2019	1	N6428	H1662	SVTM1082
2018	3	N6428	H1662	N6434
2017	20	N6428	BP16	BP13
2016	28	BQ141	BP2	BP13
2015	24	BP2	BQ142	BQ141
2014	35	CXD282	SV8232TM	H1310
2013	37	CXD282	AB306	-

Field Yields

California History

33

2001

Top three varieties were 3155, H8892 and APT410. Statewide yields were 34.02 tons/acre.



2006

Top three varieties were AB2, H9780 and H9557. N6366 is commercial and Ag Seeds started its GT trial program. Statewide yields were 35.83 tons/acre.



2010

Top three varieties were N6366, H8504 and AB2. New commercial and trial varieties like H5608, N6397, H1015, HM9905 and N6404. Statewide yields were 45.54 tons/acre.



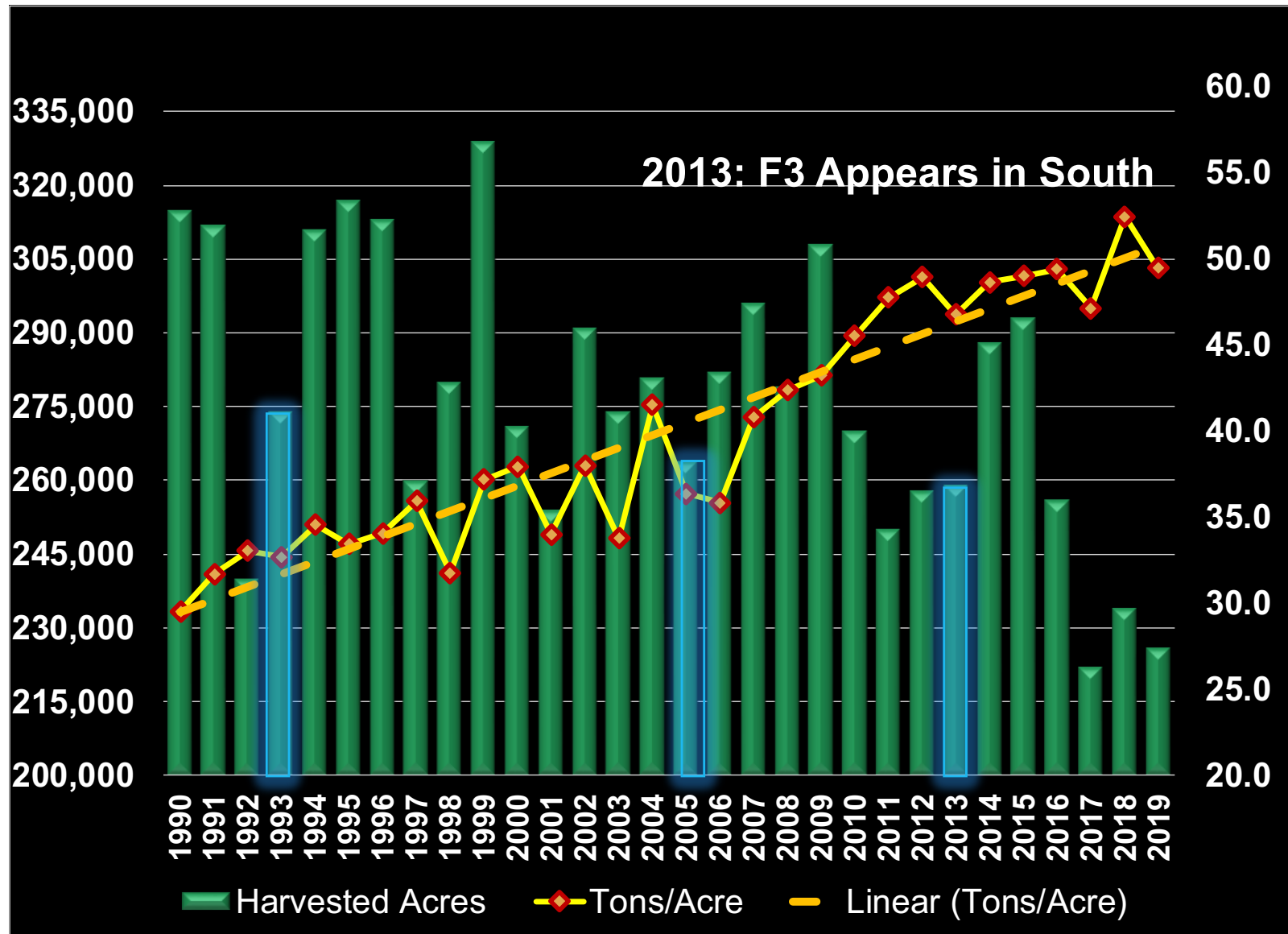
2019

Top three varieties were N6428, H1428 and BQ273. New commercial varieties like **HM4521** and **HM58841** are available. Statewide yields were 49.5 tons/acre. **Have we flat lined?**



2019 CA Tomato Harvest

1990-2019 Historical Yield



2019

35



Variety Review

Dice Grading System

Desirable
Top 3rd

Average
Middle 3rd

Undesirable
Bottom 3rd

- **Recovery**
 - a. Raw Fruit → Whole Peel → Dice
 - b. Weight Collected at Each Step
- **Retention**
 - a. Measured In² of Peel
 - b. AgSeed Pilot Peeler
- **Integrity**
 - a. Based on Observation
 - b. Dice and Whole Peel Samples

Example

<u>Dice Report Card</u>		
Recovery	Retention	Integrity
Desirable	Undesirable	Average

H1776

<u>Dice Report Card</u>		
Recovery	Retention	Integrity
Average	Desirable	Desirable

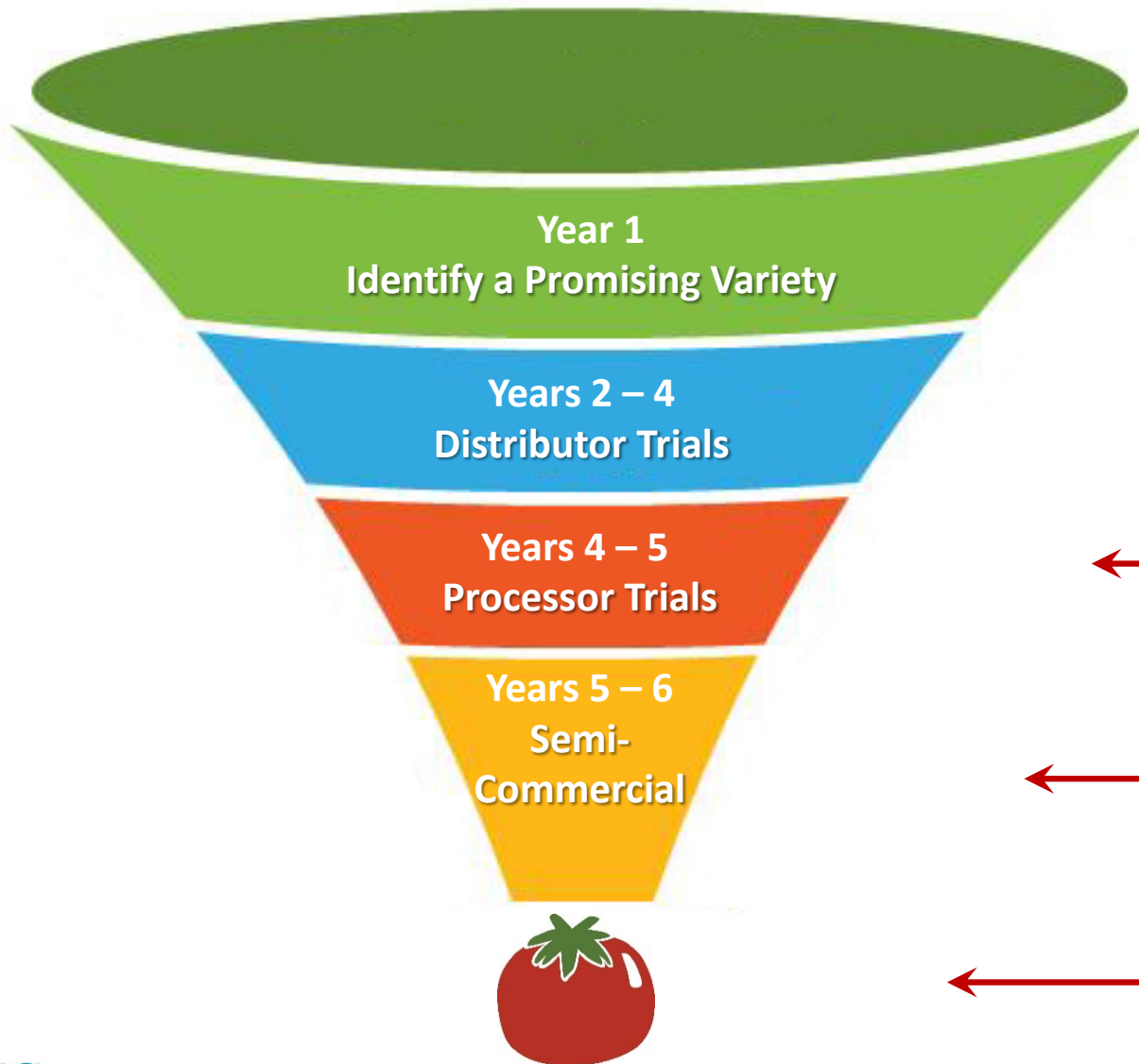
Why does there always seem to be seed shortages on new varieties

Timing – Production decisions are being made 18 to 30 months before it used here.

Example: In order to have seed available in 2021, decisions have already been made or need to be made early this summer.

Cost – The cost of seed production has skyrocketed increasing risk in seed production of new material.

Quality – Even after seed arrives quality can be a problem. Germination and hybrid purity are examples of issues that can affect seed availability.



We see a variety that looks good in the field. Around 300 varieties are evaluated each year.

A variety will be trialed for 2 to 3 years. Yield, chemistry and hort. performance is evaluated.

Small amounts of seed is produced, usually only enough for blocks.

Limited seed quantity is produced which almost never meets demand.

Seed is finally available in large enough quantities to supply the industry.

VFFNtswFr


Days: 122

Commercial

HM5522

39

Intermediate

Good Peeler  **High Brix**

2019 AgSeeds Lab

34 Locations

Variety	SV8011TM	HM5522	AB0311
Fruit Wt	88	77	82
Brix	5.37	5.65	5.76
PPB	3.69	4.45	5.97
Ostwald	557	445	398

Dice Report Card

Recovery	Retention	Integrity
Average	Desirable	Desirable

Comparable Varieties

AB0311

HM4909

Optimal Harvest Date

July 20th  Sept 1st

2019 PTAB Grades

Final PTAB

Variety	# of Loads	Brix	Mold	LU	Color	pH
AB0311	23,733	5.71	2.1	1.9	20.7	4.41
HM5522	1,284	5.62	1.3	0.7	20.2	4.37
HM3887	7,744	5.62	0.6	1.7	21.0	4.46

VFFFNptsw

Days: 123

Semi-Commercial

40

SVTM9013

Intermediate

Good Peeler  **High Yield**

2019 AgSeeds Lab

34 Locations

Variety	SV8011TM	SVTM9013	N6428
Fruit Wt	88	89	78
Brix	5.37	5.27	5.14
PPB	3.69	3.31	3.53
Ostwald	557	524	491

Dice Report Card

Recovery	Retention	Integrity
Desirable	Average	Desirable

Comparable Varieties

SV8011TM

N6428

Optimal Harvest Date

**Aug
1st**



**Sept
10th**

2019 Adaptive Trial

17 Locations

Variety	Tons/Ac	Brix	Mold	LU	Color	pH
N6428	57.1	4.93	1.8	1.1	21.6	4.49
SVTM9013	56.1	5.17	2.5	0.8	20.9	4.46

2019 CA Tomato Harvest

New Commercial Varieties

41

VARIETY	DISEASE RESISTANCE	DAYS	ATTRIBUTES	USE CATEGORY	2019 AG SEEDS LAB			PTAB	
					BRIX	PPB	OSTWALD	LOADS	BRIX
BQ413	VFFFNtsw	115	F3	Early	5.07	3.60	455	2,165	4.64
SVTM9000	VFFNPtswLv	114	Lv	Early	5.03	3.28	547	2,293	5.16
BP43	VFFFNPTsw	122	F3	Thin	5.50	5.05	405	101	-
HM4521	VFFNPtsw*	125	EFH	Inter	5.31	3.70	434	2,458	5.16
HM5522	VFFNtswFr	122	Fr	Inter	5.65	4.45	445	1,284	5.62
N6441	VFFFNtsw*	124	F3, EFH	Inter	5.22	3.61	415	2,012	5.05
H1776	VFFNPtsw*	122	EFS™	Thick	5.33	3.00	851	1,755	5.16
SVTM9008	VFFNPtsw*	127	EFH	Thick	5.28	3.20	728	2,438	5.24
HM8163	VFFNtsw	122	-	Pear	5.65	4.29	384	360	5.88

2019 CA Tomato Harvest

New Semi-Commercial Varieties

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VARIETY	DISEASE RESISTANCE	DAYS	ATTRIBUTES	USE CATEGORY	2019 AG SEEDS LAB			PTAB	
					BRIX	PPB	OSTWALD	LOADS	BRIX
BP51	VFFFNPtsw*	114	F3, EFH	Early	5.46	5.60	401	14	-
SVTM9011	VFFFNPtsw	122	F3	Thin	5.76	5.77	414	1,682	5.57
SVTM9012	VFFFNPtsw	122	F3	Thin	5.75	5.99	408	8	-
BP47	VFFFNPtsw	122	F3	Inter	5.44	4.72	444	12	-
NB23	VFFFNtsw	122	F3	Inter	5.72	4.62	485	-	-
NB63	VFFFNPtsw	122	F3	Inter	5.31	4.91	369	-	-
SVTM9013	VFFFNPtsw	123	F3	Inter	5.27	3.31	524	476	5.21
N6460	VFFFNtsw*	125	F3, EFH	Inter	5.28	4.06	441	347	5.01
SVTM9014	VFFFNPtsw	123	F3	Inter	5.33	3.34	605	347	5.20
SVTM9016	VFFFNtsw*	125	F3, EFH	Thick	5.23	3.16	567	43	-
HM5369	VFFNtsw	124	-	Pear	5.21	3.84	334	66	-

Handouts in the Back

Variety Review & Variety Guide

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2019



January 8th
2020

This report has been prepared for attendee's at South Sac. Valley Processing Tomato Production Meeting by AgSeeds Unlimited.

PROCESSING TOMATO



AgSeeds **2020** Unlimited

... from field to yield





Thank You

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