

TOMATO TOPICS

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[California Study Tour 2023: Unveiling Insights from the World's largest Processing Tomato Industry](#)

With a few key insights from participants' notes, summarized by Matt Stewart—APTRC

Our recent California study tour was an eye-opening journey into the Central Valley region of processing tomato growing and horticulture. From leading agronomy concepts, to promising cultivars and cutting-edge machinery, our participant notes were brimming with valuable findings.



Friday, July 28:

Westside Equipment Co

Nicolaus Hansen, VP of Sales and Marketing, and Kris Rodrick, VP of Manufacturing and Equipment, kindly led us through their operation where they assemble Johnson and Commander harvesters.



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Westside showcased their in-house belt production and discussed ideas such as incorporating robotics

into the welding processes, with the aim of continually striving for better quality control and precision.

Driver's Role: Nic and Kris re-iterated that harvest driver training is paramount in the harvest process and was the biggest single factor in harvest success and the level of machine maintenance required.

Unveiling Insights at United Genetics (UG)

Armando Martinez, joined by colleagues Mauricio, Rob, Sue, and Carlos, led our exploration into the field at United Genetics' trial site in Huron. Here's what we found:

Breeding Breakthroughs: UG staff led us through their small screening and observational plot trials, akin to Ann's APTRC trials, focusing on new hybrids. The trials notably included



cultivars with Fusarium race 3 (F3) resistance and protection against Tomato Spotted Wilt Virus (TSWV). We saw a familiar cultivar, UG16112 in the trials, alongside UG29184, which is very similar in performance, but boasts F3 resistance.

[As an industry can and should we begin transitioning to more F3 resistant cultivars?](#)

Saturday, July 29

Kagome's Los Banos Factory

Food Service Expertise: Kagome's Los Banos factory sources base products locally, has 180 staff and boasts 2 production lines, churning out around 4.5 million cases (boxes) of products each year. A key takeaway here was seeing the benefits of automation in the packaging process.

Sunday, July 30

Napa Valley Vineyard - Madrigal Family Winery

The official tour began when we met up with our Californian hosts, Mike Montna of the California Tomato Growers Association (CTGA) and Zach Bagley of the California Tomato Research Institute (CTRI) in Napa Valley for some wine tasting. Here, Chris Madrigal of Madrigal Family Winery gave the group a discourse on his wine growing methods.

Monday, July 31

Winters – Rominger Bros Farm Tour & Agri-planter discussion – Bruce Rominger - (Picture front page)

In the heart of Winters, Bruce Rominger welcomed us into his workshop and property.

Farm Overview: Rominger Bros is a multi-crop farm, with tomatoes (730 acres, or 296 ha), almonds, sunflowers, wheat, rice and corn grown for the local distillery. The tomato crop we saw was on track for 50 to 55 short tons per acre (112 to 123 t/ha).

With some processors providing variety lists to pick from and others dictating what to grow, it was also notable that 60% of their tomatoes are harvested by contractors/processors.

Bruce grows tomatoes on about 24 inches of water (610 mm), with some years requiring as little as 18 inches (457 mm).

Drip Irrigation maintenance was a high priority, with irrigation lines flushed up to 3 times per week.

[Would increasing vigilance to drip line hygiene and management benefit any of our growing situations?](#)

Research and Industry presentations

Catered by Mendocino Farms, we had the privilege of hearing from Industry Professionals, researchers and crop advisors on Monday afternoon.

Mike Montna, California Tomato Growers Association (CTGA)

CTGA's primary task involves lobbying for fair pricing on behalf of tomato growers. CTGA receives a levy of 25 cents per ton (43 c/MT AUD) and currently, 66% of the tons are part of the association (148 growers).

Quality vs. Price Mike raised the question of re-thinking the way we're manufacturing and selling our tomato products as an industry. Mike thinks prioritising taste at a higher price point is not just a concept, but something others are doing ... and winning at, with imported produce.

[How could Australian processors benefit by re-focusing on taste?](#)

Zach Bagley - California Tomato Research Institute (CTRI)

CTRI, similar to our APTRC, is a levy-based organisation with the main purpose being to Identify, Conduct, Report, and Extend Tomato Industry Research. CTRI operates with a voluntary levy structure and presently, about 70% of members contribute 12 cents per ton (21 c/tonne AUD). The CTRI allocates around \$500,000 USD/year (equivalent to \$790,000 AUD) for research funding.

Zach mentioned the need to work together and to keep an eye on the next major disruptors, such as automation, differentiation, wild tomato genetics etc in order to deliver our growers the best outcomes.

[What can we collaborate on research with CTRI to improve outcomes for both growing regions?](#)

"Comparison of materials for mitigation of insect-vector virus damage in processing tomatoes, and field implications" – Tom Turini, UC Vegetable Crops Farm Advisor

In the US, Western Flower Thrip (WFT) is responsible for 90% of Tomato Spotted Wilt Virus (TSWV) transmission. Drip-injected TSWV control is a valuable addition, as traditional choices fail to impress.

Once safeguarded by the SW5 resistant gene, protection against TSWV is now waning and region-specific. In general, California is leaning towards neonicotinoid alternatives and biological controls, but is facing challenges in the late season.

"Nutrient management in processing tomatoes" –Patricia Lazicki, UC Vegetable Crops Farm Advisor



The rate at which nitrogen is unleashed into the soil varies widely, from painfully slow to surprisingly swift, with yard trimmings compost: <5% available after 12 weeks, Poultry manure: 30-35%, Granular fertilizers: 39-60%, Blood & Feather meal: 65-70%, Liquid fertilizers: 50-100% and Guano: 80-90% available after 12 weeks.

With ongoing organic material inputs, a "steady state" is eventually achieved where nitrogen availability remains constant, typically emerging after about four years of dedicated effort.

“Soil Health: a discussion of past, present and future” – Gene Miyao, Emeritus Vegetable Crops Farm Advisor

In a riveting discourse on soil health, Gene Miyao, the esteemed Californian tomato guru, provided a captivating journey through the past, present, and future of processing tomatoes.

Gene highlights several **game-changers** that have left an indelible mark, being Drip Irrigation, Genetics/Hybridisation, Propagation method and Nutrient Management. However, Gene emphasized that in his experience, **irrigation management** has, and still does distinguish the best from the rest.

[Are we doing all we can to master the skill of irrigation as an industry?](#)

[What tools do we need to help the next generation of processing tomato growers?](#)

Gene’s mission is to help find what factors underpin the yield disparities between virgin and veteran soils. Gene is looking into what is lost or gained after that inaugural crop.

“Management of soilborne disease with drip-applied fumigants and fungicides” – Brenna Aegerter, Vegetable Crops Farm Advisor

Fusarium wilt, Fusarium crown and root rot, Fusarium falciform, Phytophthora, and Sclerotinia all rate highly in the USA.

Metham Potassium is an essential tool against soil-borne diseases and is used instead of Metham Sodium due to its Potassium benefit and lack of sodium. Recent trials show substantial cost and yield benefits from applying Metham-K through the drip system. Knifed Metham is now only used in very rare instances in the USA.

[Could we look at Metham drip application to better target our soil diseases?](#)

“Processing Tomato Weed Management Practices in CA: Common Practices and Challenges in 2023” – Scott Stoddard, Vegetable Crops Farm Advisor

Reliance on **mechanical weed control** methods, including robotic cultivators and laser weeders, is growing, but needs careful management to avoid damage. The average break-even point hovers around 42 tons per acre (94 MT/ha) now, at a price of \$138 USD per ton (\$240/MT AUD), so costs need to be minimised by looking into labour saving technologies.



Tuesday, August 1st

TOMRA

Diarmuid Meagher of TOMRA, whose sorters appear in our harvesting and processing equipment, highlighted the potential for improved communication between Australia and TOMRA.

With technology advancing exponentially, are we staying current with our Australian sorting equipment?



Wilcox Equipment

Alan Wilcox demonstrated why they're ag tillage experts and showcased for us their Eliminator, Performer & In-furrow Chisel manufacturing and design workshops.

Heinz Seed Tour - Stockton

John Marchese, Global Sales Manager, led us through



their world of plant breeding.

At the 140 acre **Trial Farm** we witnessed the intricate, time-consuming process of growing, seed collection, breeding and the hybridization process.

At the Stockton facility, we saw how seed was graded, cleaned, stored and tested for germination and viroids. John highlighted that "3402" was still a benchmark for Extended Field Storage (EFS), a trait we're all too familiar with in Australia!

Wednesday, August 2nd

Ingomar with Greg Pruett - CEO



Ingomar, 20% owned by Kagome, operates two plants, processing 750 tons (683 MT) per hour between them. Ingomar's commitment to sustainable waste-water management was also on display, as the group was shown how they use an artificially created wetland environment to clean and re-use water.



Thursday, August 3rd

Terranova Ranch – Don Cameron

With 9,000 acres under cultivation, the Ranch has a staggering 25 different crops, including almonds, pistachios, grapes, melons, carrots, garlic, lettuce seed and tomatoes. 2,200 acres is dedicated to tomatoes, including 600 acres (243 ha) of organic tomato production. Organic tomatoes achieve over 60 tons per acre (134 MT/ha) at 5.5-6.3 brix, whilst conventional crops get an impressive 60 to over 90

tons per acre (134 - 202 MT/ha), depending on the location.

In years of excess water, the farm has an arrangement with the water body that allows recharging (flood irrigation) of ground water over several hundred acres, which buys them water credits in lean water years.

Ferguson Farm Tour

At Fergusons, we saw HM7103, which was set to yield an 80 tons per acre (179 MT/ha) crop at 5.2 solids. Interestingly, the plant density was 20,000 plants per ha on 6-foot beds.

Tulare lakes

We visited a rare occurrence in California, when we drove the levy banks of the Tulare Lake system. The massive modular flood lake system covers 120,000 acres of land, which prior to the high rainfall and snow melt in the months preceding our tour, was home to dairy farms, pistachios, almonds, cropping and chook farms. The last time this lake flooded to the same extent was back in 1983, so it was a rare and unique opportunity for the group.



Friday 4th August

Wolf Farm Tour Highlights

Farming Manager Chris Quaylo and Sustainability Director Daniel Hartwig showed us around the 2nd generation family farming enterprise. Wolf farm boasts excellent water and soil quality, with 32 wells on the property supporting around 25,000 acres (10,100 ha), of production, of which 4,300 acres (1740 ha) is dedicated to tomato cultivation.

Chris discussed many of their farming practices with the group, notably including the use of Metham Potassium via drip for disease and via knife weed control, how they conduct vine training and trimming routinely and how they've delved into their Agave production (for Tequila), which uses about 5 inches of water per year (125 mm).

Crop rotation is an integral part of the farm's practices, typically following a 1 in 4 rotation pattern of tomato - cotton - wheat - garlic - tomato.

Tomato water consumption averages 20 inches (500mm) on early crops and 30 inches (750mm) on later



crops, with deficit irrigation used for brix control. The 17 CTM Commander harvesters are capable of harvesting annually about 1 million tons. Over 34 different varieties of tomatoes are grown; key ones including Seminis 9023 and 9016, as well as H 1996 & HM 7103.

Daniel showed us around their water treatment pondage and water re-use dams, where water from the tomato processing facility is treated with surfactants, coagulants, and flocculants

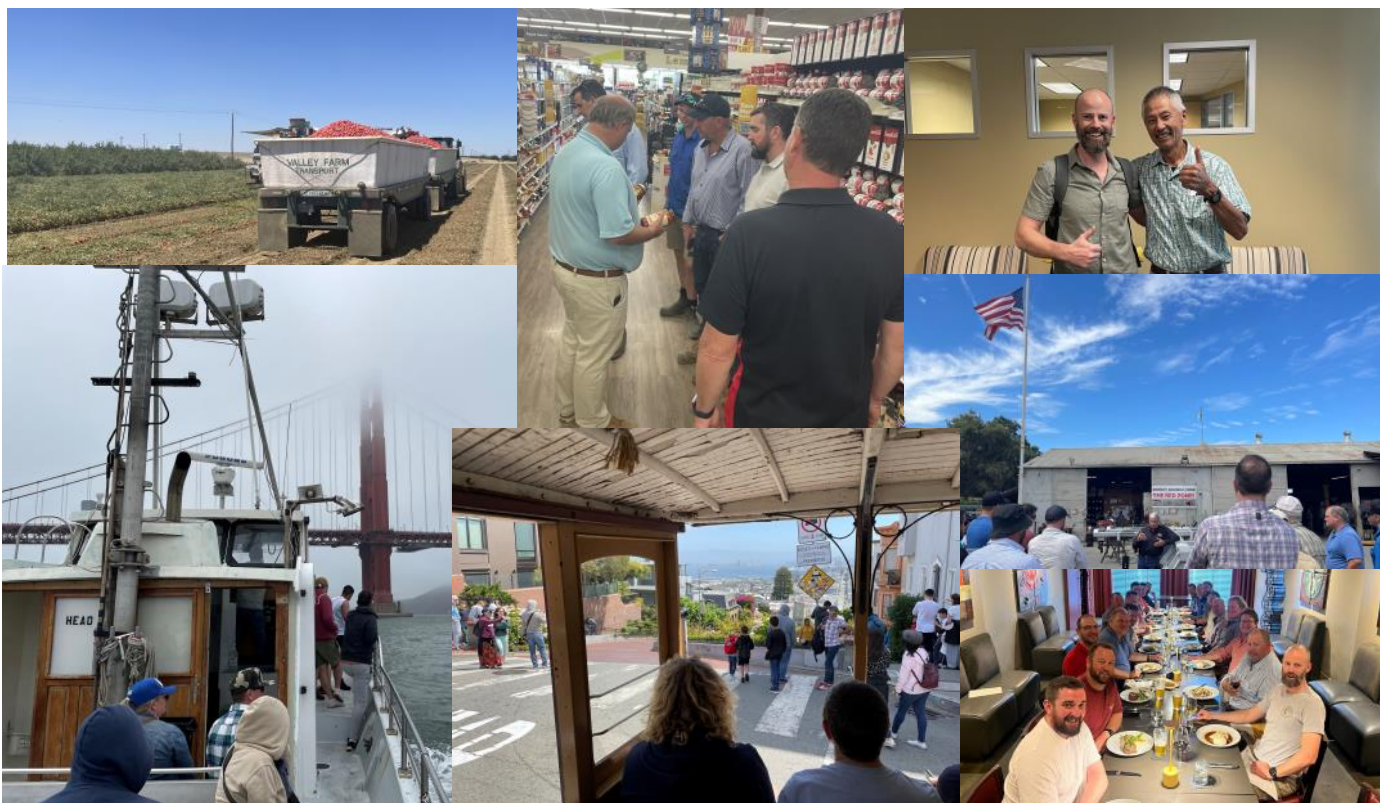
to separate solids and nutrients, resulting in cleaner water before it's recycled.

The farm also participates in a groundwater replenishment program, where around 90% credit is received for the volume of water pumped into the recharge system, providing future water allocation security.

Wrap-up

The trip to California helped strengthen and established bonds with industry peers, expand our professional network, brought forth new experiences and allowed hands-on learning opportunities.

We're extremely grateful to our hosts Mike Montna and Zach Bagley, who put so much time and effort into helping us organise the agenda and visits. Not only that, they spent a full week away from their families to personally chaperone us every step of the way and we were very grateful to have their undivided attention for this time to answer questions, show us where we were going and where to find some of the best steaks in America! To the growers, farm managers and equipment manufacturers we visited, we are truly thankful for the time you gave us and for being so open about your enterprises. We hope to maintain these relationships and help our processing tomato industries continue to excel.

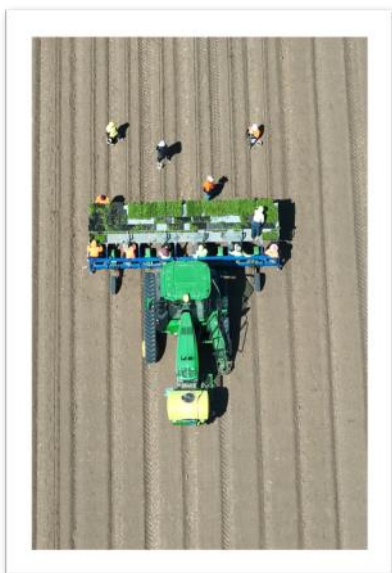


2023/24 Cultivar Trials

After a very difficult 22/23 season, we are hoping for better fortunes this time, with ten new cultivars included in the trial program, as well as 22 cultivars for ongoing evaluation. At this stage, the establishment phase of the early season program has been completed, with three screening and three machine harvest trials successfully planted after some rescheduling due to wet weather.

For the mid-season program, there are three screening trials, as well as eight transplant and three direct-seeded machine harvest trials planned.

Unfortunately, some additional cultivars are still in transit, but it is hoped they will be available for next season’s trial program.



Early	
Seed Supplier	Cultivar
Heinz	H1015
	H1301
HM Clause	HM Enotrio
Seminis	SVTM 9018
	SVTM 9027 *
	SVTM 9032*
	SVTM 9033*
	SVTM 9300 (Incipit)
	SVTM9000
Syngenta	BQ403
Lefroy Valley	TOP 96876*
	TOP 96879*

Mid Season	
Seed Supplier	Cultivar
Heinz	H3406
	H3402
	H1311
	H1884
HM Clause	HM 58811
	HM 58841
	HM 6856 (Adenda)
	HM Nava
Syngenta	Waller*
	Firmus*
	Ifox*
Seminis	SVTM 9023
	SVTM 9024
	SVTM 9025
	SVTM 9034
	SVTM 9037
	SVTM 9334 (Barrick)
Lefroy Valley	TOP 96877*
	TOP 96878*

* Cultivars new to the trial program

Climate Outlook

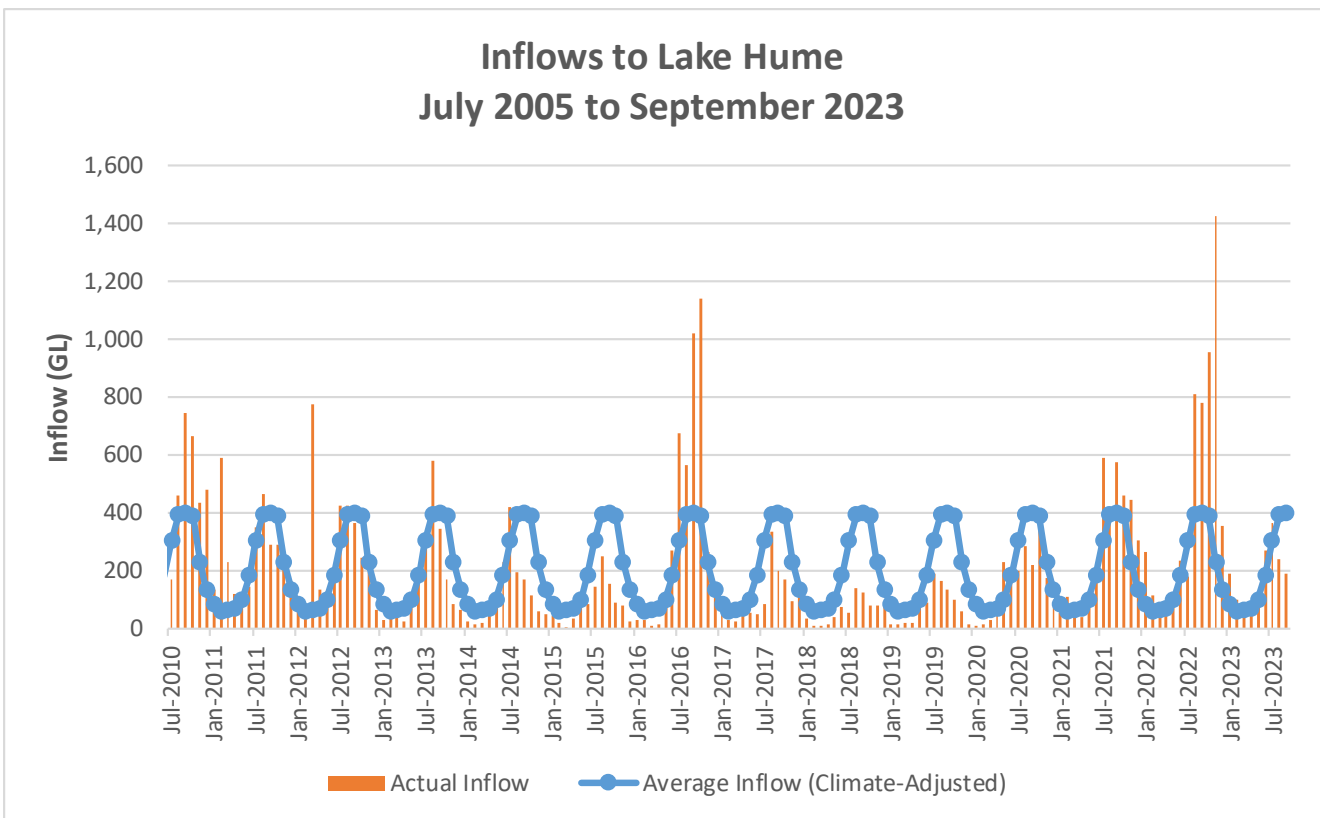
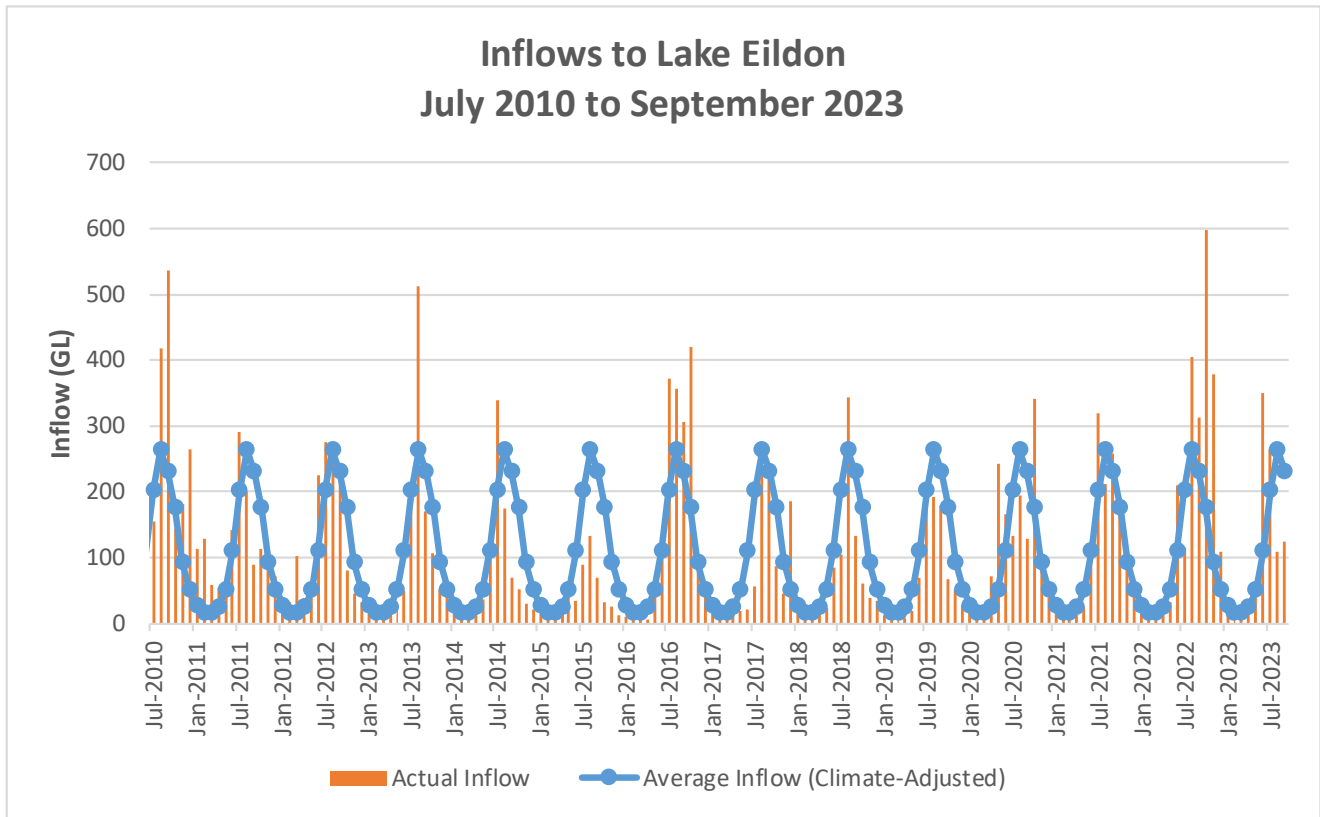
All the boxes have finally been ticked and climate models are now in furious agreement that we are moving into an El Niño weather event which is likely to persist until at least February next year.

Oceanic indicators strongly exhibit an El Niño state, and models indicate further warming of the central to eastern Pacific is likely. There are also signs that the atmosphere is responding to the warm sea surface temperatures. The coupling of these factors is a characteristic of an El Niño event and can sustain it for an extended period. A positive Indian Ocean Dipole (IOD) is also underway and likely to persist for at least the next six weeks.

An El Niño event typically leads to warmer and drier conditions across south-eastern Australia during spring and early summer. A positive IOD produces similar effects, and when the two occur together their drying effect is typically stronger and more widespread across Australia.

Water storage levels (Supplied by Goulburn-Murray Water)

Note: both reservoirs are 95-100% full as at Oct 16th.



The following articles were sourced from Tomato News

California Tomato Harvest Update: looking at 12.9 Million Tons.

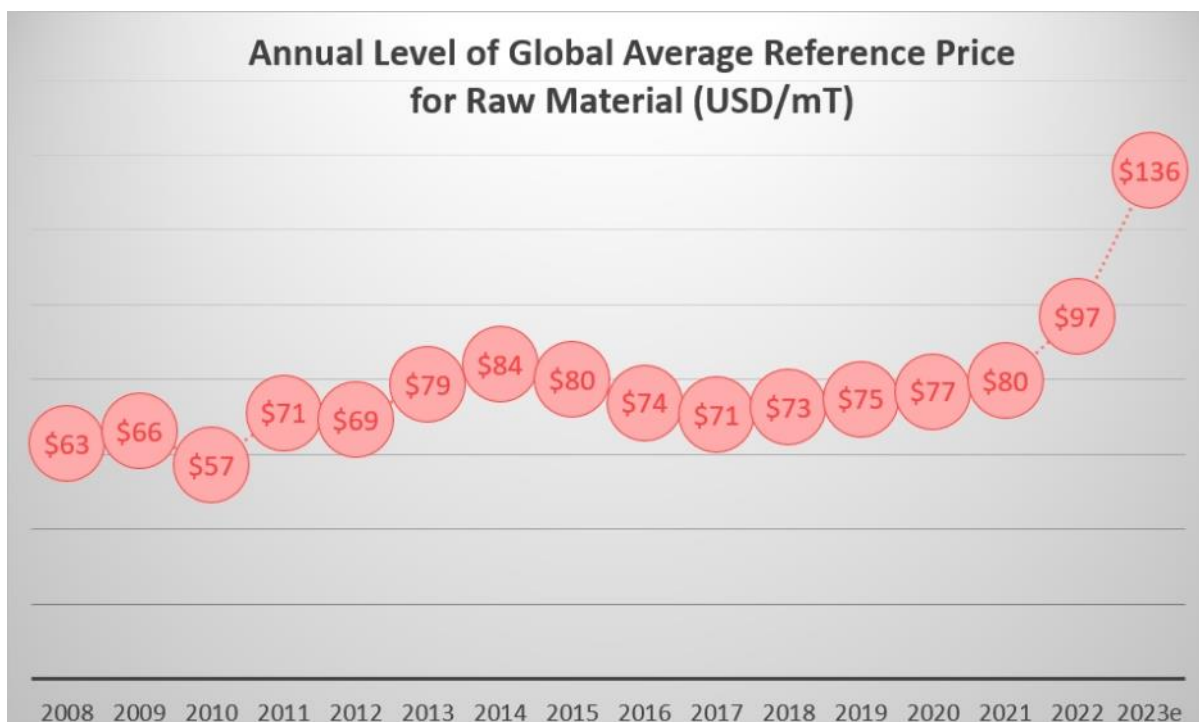
Despite a slow start, the California processing tomato industry is making strides toward its harvest goal, showing promise for bolstering inventories and ensuring a reliable supply for domestic and global markets.

The new USDA California Tomato Processing report released on August 30th, increased paid tonnage to 12.9 million tons (11.7 million metric Tonnes), 4% higher than the January estimate. This update is a result of a net yield increase on 254,000 acres (102,800 ha), and an average yield of 50.8 tons per acre (125 t/ha or 113.9 T/ha). Through September 2nd, 5.5 million tons have been harvested.

To meet the 12.9 million ton estimate, 4.2 million tons will need to be harvested in September at full capacity, with another three plus weeks of full capacity through October. Historically, by the end of August, 58 to 71% of the crop has been harvested. This year, the figure is at a record low 43%.

Processing tomato prices rise by 40% above 2022 values

For the second year running, reference prices negotiated between growers and processors have soared to unprecedented levels.



According to information collected by the WPTC from national operators of the sector for the 2023 season, the worldwide average field-gate value of a metric tonne of tomatoes (estimated as of June 2) is around USD 136, up 40% on last year's (already record) level, and 60% higher than the overall average

This value represents the weighted price (excluding various premiums and incentives) for the quantities scheduled in the main processing basins, in Argentina, California, Chile, China, Egypt, France, Greece, Hungary, northern Italy, Portugal, Spain and Turkey for tomatoes intended for the production of concentrated purées, i.e. around 31 million mT or 73% of the quantities expected for the coming season. As it stands, the total value of the projected harvest worldwide is around USD 5.8 billion (Euro 6.2 billion).

Mutation resistant to blossom-end-rot

*Tomatoes are often at risk from blossom-end rot (BER), but a new study has found that a mutation discovered in the 1950s, *adpressa*, actually makes these mutated tomatoes resistant to the rot without substantially reducing their growth,*

The tomato mutation *adpressa* was discovered as early as the 1950s. However, it is only now that researchers, in a study published in the *Journal of Experimental Botany*, are discovering how its mutants are different from other tomatoes. *Adpressa* means that tomatoes grow closer to the ground, and is caused by a mutation in a gene that abolishes starch synthesis, which in turn causes major transcriptional and metabolic remodeling. One of the major changes this provokes is an increase in soluble sugars during fruit growth, as well as enhancing the growth itself.



Another major benefit of the mutation is that it makes the tomato completely resistant to BER. BER is a rot caused by lack of calcium in the fruit, rather than any interference by pests. It is usually indicated by greenish brown or black blotches at the end of the fruit where the flower was (the 'blossom end'). *"Our findings with the *adpressa* mutant are quite promising"* said Phillippe Nicolas, one of the researchers. *"Contrary to what was previously thought, the lack of starch did not alter fruit development and ripening. In fact, *adpressa* fruits were slightly larger and accumulated more sugars during growth. The most remarkable discovery is the resistance to blossom-end rot. These findings open new avenues for improving fruit yield and quality, especially under stressful environmental conditions."*

High-resistance ToBRFV trait developed

Companies NRGene and PhiloSeed have announced major progress towards the widespread commercialization of a ToBRFV (Tomato Brown Rugose Fruit Virus) high resistance trait in tomatoes. Tests on the ToBRFV-resistant tomato plants have been completed by several seed companies that licensed the high-resistant lines. Early adopters, both in Europe and the USA, observed high levels of virus resistance in plants infected with local variants. Furthermore, NRGene's DNA markers (PCR-based) showed excellent correlation with the resistance trait, making them ideal for developing resistant tomato varieties. Based on the company's experience, it is estimated that the implementation phase of the high-resistance trait

Besides Europe, the highly contagious ToBRFV disease is spreading rapidly in Asia, Africa, parts of Mexico, and the United States, endangering the tomato industry worldwide. It's a threat we need to keep a close watch on (see symptoms below).



In the Study Tour article, the cost of growing in the USA was referenced. For an in-depth look into this analysis, please visit the recent Tomato News Article, with additional links to the full study.

[California: a study on costs for processing tomato growers](#)



ifarmwell is a free online tool kit to help farmers cope effectively with life's challenges and get the most out of every day, regardless of the circumstances they face. <https://ifarmwell.com.au/register>

UPCOMING EVENTS

Boort and Boga Region Field Day; followed by dinner at the Mystic Park Hotel

When: Wednesday December 20th : Details to be advised

Netafim Field Day, followed by a family dinner at the Greens Pavilion, Moama Bowling Club

When: Friday January 19th

The Netafim Field Day will be preceded by Training for Farm Managers, Agronomists and Advisors on Irrigation Systems and Maintenance from 8.30am –12.30pm (run by Nick O'Halloran from AgVic and Peter Henry from Netafim)

Where: Echuca Workers' Function Room

NOTE: The website for the 15th World Processing Tomato Congress & 17th ISHS Symposium on Processing Tomato in Budapest 2024 is now live at www.worldtomatocongress.com

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