

TOMATO TOPICS

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**PROCESSING
TOMATO FUND**



**NEWS and INFORMATION
FOR THE PROCESSING TOMATO INDUSTRY**

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World Congress and ISHS Symposium successfully delivered online!

The 14th World Processing Tomato Congress & 16th ISHS Symposium on the Processing Tomato, which were originally set to take place in San Juan, Argentina in March 2020 have successfully been delivered; albeit online and 2 full years later than planned! The congress and symposium were split over 2 consecutive weeks, running for 4 hours every day from March 21st until April 1st.

Southern hemisphere & Asia processing tomato production (Members WPTC) - 2022

Water: the key factor in a drip irrigated production system

An industry wide approach to lifting productivity in the Australian Processing Tomato Industry: 2019 to 2021

Increasing productivity

Research: Varieties adapt to climatic adversities

- Increase and new pests and diseases
- Flooding problems for early transplant
- Water scarcity, incorrect water needs estimation
- Salinity

Research:

- Precision irrigation
- Drip irrigation
- Irrigation strategies

APTRC Industry Development

Industry outcomes

References

A number of industry members participated on-line in much of the congress; including industry presentations delivered by Jason Fritsch and research and development presentations delivered by Sam North NSW DPI and Matt Stewart on behalf of the APTRC. The industry poster submitted by APTRC can be found [here](#), and Sam's recorded presentation will soon be loaded online for easy viewing.

The congress had excellent participation globally and there is some cross continental collaboration already taking place with industries who are conducting research to tackle issues which are very close to our own.

The APTRC will keep industry abreast of any developments in this area and any technologies or innovations that are relevant to our growers and processors.

Budapest to host the next World Processing Tomato Congress

With the dust barely settled on this year's World Processing Tomato Congress, held as a "virtual" event (due to Covid concerns) based in San Juan, Argentina, The WPTC has just announced Budapest, Hungary as the venue for the next Congress, to be convened in June 2024.

Source: Tomato News

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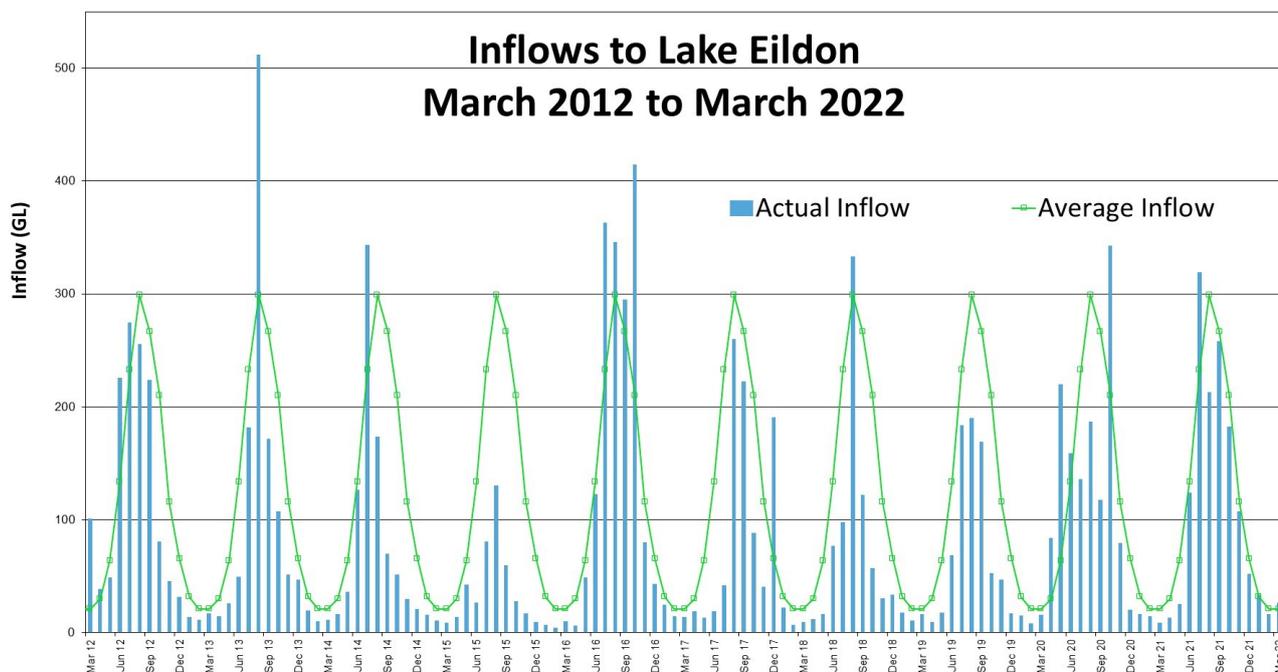
Climate Outlook

Autumn often marks a change in weather patterns across Australia making extended predictions difficult. The current La Niña weather event, which tends to produce cooler and wetter conditions across south-eastern Australia, is widely predicted to break down over the coming weeks, leading to more neutral conditions.

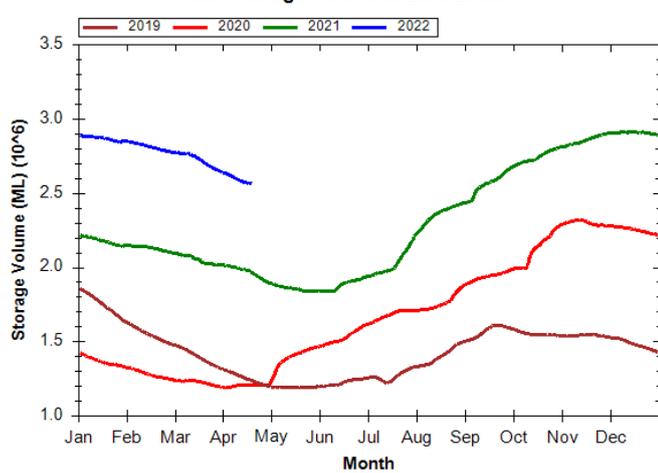
Several climate drivers remain supportive of La Niña however, including a positive Southern Oscillation Index (SOI) and cool sea surface temperatures about the equator. While La Niña may be weakening its influence persists, with April-June rainfall still predicted to be around or above average for much of eastern Australia.

Maximum and minimum temperatures are likely to be above median levels however, except along parts of the east coast, where conditions may be cooler. *(Source; Bureau of Meteorology)*

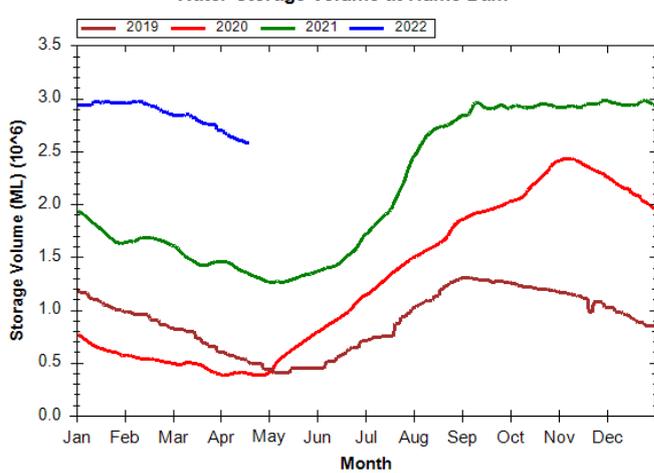
Inflows to Lake Eildon March 2012 to March 2022



Water Storage Volume at Lake Eildon



Water Storage Volume at Hume Dam



Management Styles and Plant Trials – The Rochester/Echuca Farm Tour

The Rochester/Echuca farm tour was held on the 20th of January 2022, where 41 industry members visited 3 unique properties in the region.

Afterwards, industry members and their families (31 in total, including 15 children) gathered at the Moama Bowling Club ‘Greens’ venue to enjoy dinner, drinks and some barefoot bowls action.

The field day again focussed on specific themes, which were “different management styles and plant trials”; with a Q&A session to kick off each of the conversations.



The tour began at Kagome’s Wilson Rd block near Rochester, where transplant rate trials were examined. The group then moved on to Weeks’ farm to discuss new tomato ground and to see the APTRC cultivar trials, before finishing at Kagome’s Lockington farm, where the unique 2m bed spacings were discussed in depth.



Kagome – Wilson Rd

How is installation of new tape performing?

At Kagome’s Wilson Rd site, discussion centred around the new tape installation and if this was providing a boost to production. Although the tape and block were performing well, unfortunately this block was laser levelled many years back and there were now a few issues with un-even ground presenting, making spraying and trafficability difficult in some areas. This highlighted the need for re-surveying and potentially re-lasering paddocks prior to new tape installations in the future.



How is the NEC System progressing?

To manage irrigation, Kagome are still trialling the NEC system, which utilises crop models from satellite imagery and soil moisture probes for irrigation and nitrogen scheduling. The biggest challenge so far is when the moisture probes cannot be representative of the whole field, due to soil variation. Consequently, managers still need to physically check the crop, which they do using a 1-5 (Dry-Wet) scoring system.

Discuss the implementation of transplant rate trials this season.

The transplant rate trials were planted using the Ferrari automated transplanter (in fact they likely weren't feasible to implement without it!). Thanks to Mick Hogg's patience in the driver's seat and some meticulous forward planning from Ann Morrison, the trials were planted successfully, and rates modified using the electronically controlled spacing adjustment. The populations in trial are 15, 18, 21, 24, 27 and 30 thousand plants per hectare (the current industry standard is approximately 17-19 thousand/ha). Results will be outlined in APTRC publications later in the year.



Weeks' Farm

This is a new block – can you run us through the setup process?

The crop rotation has been tomatoes and wheat and the winter wheat stubble is mulched and disced soon after harvest to prevent mouse damage. The rows are 460 m long, 1.1 L/hr emitters at 0.4m spacing (in line) using heavy wall tape. The aim is to get 5 tomato crops in 10 years before considering system replacement.

Interestingly, Bruce Weeks outlined that the tape is only buried 15cm (6") below natural soil level, which Boort grower Graeme Lawrence commented is half as deep as their 30 cm (12") deep tape. This is due to differences in soil types and ability of most Boort soils to sub easier (water movement laterally and vertically).

This line of enquiry led to further in-paddock discussions about the management of transplanted vs seeded crops and the potential feasibility of utilising one or the other crop establishment practice on different soil types in future.



Kagome 2 m beds

What is your experience with 2m beds?

Manager Gus Tall took us through the ins and outs of the 2m bed system. Notably, Gus outlined how the system is based on '8 foot' (2.4m) beds, seen in California, which are typically used with direct seeded, double row crops. However, due to crusting/emergence issues and difficulties watering up, Gus has gone away from direct seeding. Currently, Kagome are planting twin row transplants at 20,000 plants/ha, with 45cm between rows & 50cm between plants.



Some major lessons learnt along the way include, moving rows further apart to reduce competition and prevent excessive upright growth, which caused canopy to fall into the gutters and working the beds in sets of 3 (not 5) to give better machine stability and control.

Negatives are that the 3-row working system loses some efficiencies and due to the format of the planting, the crop is slow to plant, and Gus can't take advantage of the new Ferrari planter option.

Andrew Pollard – Market Development Manager – Netafim

Where is the industry heading with SSDI (sub surface drip irrigation)?



Andrew outlined that the industry is going two ways, either with permanent SSDI or a shallow low flow, 2-year tape system. Permanent SSDI needs more flushing and monitoring than shallow 2-year tape, but tape is less susceptible to insect damage.

Shallow, 2-year tape, with lower emitter rates, can give better lateral movement but can't catch up easily if behind in watering, so managers need to watch soil moisture levels to control root intrusion and can't let the soil dry out.

Guests from the country's capital

Although not formally presenting on the day, guests Vivienne Wells and Rebecca Craine from ANU's (Australian National University) Centre for Entrepreneurial Agri-Technology (CEAT) division in Canberra took an active part in the day by interacting with growers and industry personnel. They were observed on many occasions throughout the day and night explaining their complex areas of study to industry members in a context that we could all better understand and relate to. CEAT is currently involved in a research project, investigating gasification of post-harvest tomato vines to create synthesis gas for green hydrogen, fuel, or ammonia production. The outcome of this work will be of great interest to industry so watch for an update report in our 2022 grower magazine.



Meet Hanyue Feng—PhD Student at Melbourne University

Integrated disease management of poor root growth of processing tomato plants

Processing tomato production in Australia suffers from a persistent yield decline which in part is caused by a complex of pathogens. In a previous PhD study at the University of Melbourne, Dr Sophia Callaghan identified *Fusarium oxysporum* and 11 *Pythium* species associated with poor plant growth. This new PhD project will further study the role of the important *Fusarium* pathogen on yield decline in processing tomatoes and develop strategies to mitigate the risk.

The aims of this project are to:

Characterise the disease cycle and pathogenicity of the new crown and root rot *F. oxysporum* pathogen.

Identify processing tomato cultivars that have resistance to *F. oxysporum*.

Determine the resistance of rotation crops to *F. oxysporum* to minimise soil inoculum build-up.

The research will involve glasshouse studies to accurately measure the impact of the pathogen on plant growth and development. Field trials in the 2022/23 season will monitor the epidemiology of the disease from seedling to mature plants.

Hanyue Feng is the PhD student involved in this project and is no stranger to working on pathogens of processing tomatoes. In 2019, Hanyue completed her Bachelor of Agriculture with First class Honours at the University of Melbourne. In her Honours project Hanyue studied the efficacy of a plant bio stimulant to control *F. oxysporum* and *Pythium irregulare* in processing tomato plants. Hanyue's PhD will be supervised by Assoc Prof Sigfredo Fuentes and Prof Paul Taylor from the University of Melbourne.



2023 NUFFIELD SCHOLARSHIPS NOW OPEN

Applications are now open for 2023 Nuffield Scholarships.

Nuffield Australia will award up to 20 scholarships this year, with opportunities available in the vegetable, avocado, onion, melon and nursery industries.

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To find out more, [visit the application page](#).

Processing Tomato Advisory Board

Top 25 varieties based on loads delivered between 20/6/2021 - 20/11/2021

| COMPANY | Variety | Use | Attributes | #Loads | Mold | Green | MOT | Color | LU | Solids | pH | APTRC Assessed |
|---------------------|------------------|--------------|----------------|---------------|------------|------------|------------|-------------|------------|-------------|-------------|----------------|
| NUNHEMS | N 6428 | Inter | F3, EFH | 32,234 | 2.7 | 3.6 | 1.4 | 21.8 | 1.9 | 4.88 | 4.47 | - |
| HEINZ | H 1662 | Thick | F3, Lv | 24,180 | 2.2 | 4.7 | 1.3 | 22 | 1.4 | 5.1 | 4.45 | - |
| HARRIS MORAN | HM 58841 | Inter | EFH | 16,795 | 1.2 | 1.7 | 0.7 | 21.2 | 0.7 | 5.23 | 4.38 | Y |
| HEINZ | H 4707 | Thick | EFS™ | 14,842 | 1.3 | 3.1 | 1.2 | 22.7 | 0.9 | 4.98 | 4.42 | - |
| WOODBIDGE | BQ 273 | Early | - | 13,317 | 0.6 | 1.9 | 0.6 | 20.9 | 1.5 | 5.22 | 4.39 | - |
| SEMINIS | SVTM 9014 | Inter | F3 | 13,135 | 2.2 | 2.5 | 0.9 | 20.3 | 1.1 | 5.39 | 4.42 | - |
| ORSETTI | BOS 811 | Thick | EFH | 12,601 | 1.7 | 2.4 | 0.5 | 20.3 | 0.7 | 5.13 | 4.39 | - |
| SEMINIS | SVTM 9013 | Inter | F3 | 12,371 | 2 | 2.9 | 0.9 | 20.4 | 1.3 | 5.3 | 4.43 | - |
| WOODBIDGE | BQ 400 | Early | - | 12,159 | 0.6 | 1.8 | 0.8 | 19.8 | 1.5 | 5.27 | 4.51 | - |
| HARRIS MORAN | HM 4521 | Inter | EFH | 11,545 | 1.1 | 2 | 0.6 | 21.2 | 0.5 | 5.41 | 4.38 | - |
| WOODBIDGE | BQ 403 | Early | - | 11,366 | 0.3 | 1.3 | 0.5 | 21.1 | 1.8 | 5.42 | 4.34 | - |
| SEMINIS | SVTM 9024 | Thick | F3, EFH | 11,210 | 1.6 | 2.6 | 0.8 | 21.2 | 0.6 | 5.07 | 4.32 | Y |
| HEINZ | H 5608 | Thick | - | 10,892 | 1.6 | 1.7 | 0.5 | 20 | 1 | 5.23 | 4.46 | Y |
| SEMINIS | SVTM 9016 | Thick | F3, EFH | 10,410 | 2.6 | 3.2 | 0.9 | 22 | 0.5 | 4.98 | 4.36 | Y |
| SEMINIS | DRI 319 | Thin | - | 9,227 | 1.3 | 1 | 0.5 | 21.3 | 2.2 | 5.68 | 4.38 | - |
| HEINZ | H 1428 | Thick | EFS™ | 9,137 | 1.7 | 4 | 1.3 | 21.4 | 0.9 | 5.04 | 4.45 | Y |
| SEMINIS | SVTM 9011 | Thin | F3 | 8,852 | 2 | 1.7 | 0.5 | 20.3 | 1.8 | 5.89 | 4.41 | - |
| HARRIS MORAN | HM 5522 | Inter | Fr | 8,703 | 1 | 1.1 | 0.4 | 20.1 | 0.7 | 5.72 | 4.36 | - |
| BHN SEEDS | BP 43 | Thin | F3, EFH | 8,579 | 2.1 | 1.9 | 0.5 | 21 | 1.2 | 5.42 | 4.46 | - |
| SEMINIS | SVTM 9008 | Thick | EFH | 8,199 | 2.3 | 3.1 | 0.4 | 21.2 | 0.5 | 5.28 | 4.34 | Y |
| SEMINIS | SVTM 1082 | Thin | F3 | 7,914 | 1.2 | 2.1 | 0.7 | 21.1 | 1.7 | 5.68 | 4.36 | - |
| HARRIS MORAN | HM 5235 | Inter | F3 | 7,010 | 2.1 | 2.6 | 0.8 | 20.3 | 2.1 | 5.28 | 4.43 | - |
| SEMINIS | SVTM 9023 | Thick | F3, EFH | 6,667 | 2.1 | 2.4 | 0.9 | 21.8 | 1.1 | 5.17 | 4.39 | Y |
| HARRIS MORAN | HM 8163 | Pear | - | 6,578 | 1.3 | 1 | 0.7 | 19.7 | 1.7 | 5.92 | 4.48 | - |
| NUNHEMS | N 6402 | Thin | - | 6,347 | 0.9 | 1.3 | 0.5 | 19.9 | 1.7 | 5.86 | 4.48 | - |

Source: <http://www.ptab.org/>

PTAB: The Processing Tomato Advisory Board (PTAB) is a quasi-governmental organization whose primary function is managing processing tomato inspection in California.

APTRC assessed varieties indicate which of the top 25 Californian varieties have been or are currently being assessed in the APTRC trial program.

Australian Agriculture Visa

The Department of Foreign Affairs and Trade (DFAT) has released an updated factsheet about the Australian Agriculture Visa (Ag Visa). Furthermore, it has just been announced that Vietnam has entered a bi-lateral agreement with the Australian Government to opt-in to the Ag Visa, meaning workers from the south-east Asian country will be able to utilise the visa to work on Australian farms and provide growers with critical workers that will address the horticulture industry's labour shortages in the medium- and long-term.

The Ag Visa is moving ahead with a phased approach with a select number of Approved Employers. The first phase will focus on low-skilled workers and act as a trial for the visa program before the fully operational Australian Agriculture Visa.

The updated DFAT Ag Visa factsheet can be found [here](#).
Information on becoming a Temporary Activity Sponsor (TAS) can be found [here](#).

Recording: Advancements in biopesticides for profitable veg production

Biopesticides are a diverse group of pest control products based on naturally occurring biochemicals, minerals and microbes. They generally have very low toxicity to humans and are sustainable with minimal environmental impacts.

Many can be used in an integrated pest management (IPM) approach. Watch this Soil Wealth ICP [webinar recording](#) to hear more about biopesticides and their application, how to maximise their success, emerging trends and future research innovations.

Posters: Cover crop herbicide guide & termination guide

A new set of Soil Wealth ICP posters has been released to assist vegetable growers in using cover crops. This [herbicide guide](#) provides suggestions on how cover crops can suppress weeds through quick establishment and/or dense canopies.

Once their job is done, make sure your cover crop is terminated before seed to prevent it from becoming a weed – you can find out more in this [termination guide](#).

Fall armyworm management for vegetable crops

Fall armyworm (FAW) is a significant threat to horticultural production globally and is now posing a risk to Australian horticulture.

A management guide for fall armyworm has recently been developed by AUSVEG, with assistance from the Department of Agriculture and Fisheries, Queensland. The guide is now available to growers and industry in an online and hard copy format.



[READ MORE](#)

Source: AusVeg

AMITOM anticipates a smaller crop for 2022

The 2022 forecast for the AMITOM countries currently stands at 16.8 million tonnes (including 500000 tonnes in Ukraine), a reduction of 11% compared with the 19 million tonnes processed in 2021.

Source: Tomato News

Drought promoted by viral infection in tomato plants

A growing body of scientific evidence suggests some positive interactions between viruses and plants – particularly relating to their tolerance of environmental stresses. In a recent study, tomato yellow curl virus (TYLCV) was shown to protect tomato host plants against extreme drought. For the virus to show this protective capacity in agriculture, TYLCV-resistant tomato lines have to be infected before planting. Such virus-resistant tomato plants contain virus amounts that do not cause disease symptoms, growth inhibition, or yield loss, but are sufficient to modify the metabolism of the plant, resulting in improved tolerance to drought. This phenomenon is based on the TYLCV-dependent stabilization of amounts of key osmoprotectants induced by drought (soluble sugars, amino acids, and proteins). The study found that stress-protective soluble sugars and amino acids in the leaves of uninfected, and especially in virus-infected tomatoes, resulted in the development of a buffering state, which protected plants against drought over a prolonged period.

In effect, the virus is able to modify its host to survive severe stresses, thus ensuring that the virus can also survive and replicate.

This approach is being developed and tested for application in arid production areas, but water shortages elsewhere may see its wider use.

Source: Tomato News

Using dye to show water movement below drip irrigation

Water movement patterns on the soil surface may not be a good guide to what is happening below the surface and can lead to inefficient irrigation.

Excess irrigation leads to water moving beyond the root zone, wasting water and leaching nutrients away from where they are needed.

The volume of water reaching various depths can be determined using soil moisture monitoring equipment or by adding dye to the water being delivered through the drippers to reveal exactly how far the water is reaching.

To find out exactly how to do this on your property, click [here](#) for more information.



Source: Dept. Primary Industries & Regional Development WA

UPCOMING EVENTS—SAVE THE DATE!!

APTRC Annual Forum and Dinner 2022 — Thursday May 26th 2022

Moama Bowling Club “The Venue”

(Invites will be circulated once speakers and agenda are confirmed)

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