



PHOTOS © VICTORIA BAKER



pome update





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Budgeted income 2022–23

Project	\$
General Account Budget (including FFS, Interest, Project Grant Funding)	468,370
Biosecurity Account Budget (FFS, general account transfers & interest)	76,250

Budgeted expenditure general account for 2022–23

Project	\$
Project Manager including expenses SMW	92,555
Quality Testing Project	35,000
Building Business Capacity Program	20,000
Proposed Grower Study Tour	20,000
RIM Disease modelling support system	10,280
WA Apple Forum 2023	20,000
Promotion and Publicity Project – Fresh Finesse including events with BWEB	37,500
Event Sponsorships	6,000
Annual Meetings and Comms Platforms	15,000
Administration including salaries and office costs	198,000
APC charge @11% of FFS budgeted income	46,200
Transfer to Biosecurity Account	35,500
Total	536,035

Budgeted expenditure biosecurity account 2022–23

Project	\$
Codling Moth	35,000
On-Farm Preparedness Workshops	10,000
APC charge @11% of FFS budgeted Income	4,400
Total	49,400

APC fee-for-service charge

POME FRUIT EFFECTIVE FROM 1 JANUARY 2015

Type of fruit	\$/kg
Fresh fruit – apples, pears, Nashi, other	0.015
Processing fruit	0.005
Biosecurity FFS for fresh fruit	0.002
Biosecurity FFS for processing fruit	0.001

Welcome to pome harvest season 2023

While Covid cast labour shortages and lockdowns over our industry in 2022, this year the future is looking ripe with optimism.



BY NARDIA STACY
EXECUTIVE MANAGER,
POMEWEST



This time last year the country was still embroiled in the impact of the pandemic with impending labour shortages and lockdowns affecting our preparation for harvest. This year, however, it's shaping up differently – generally, there is an optimistic view by most.

The growing season started with a wet and cold winter, followed by a damp and mild cool spring that extended into our summer months. This means we experienced a very cold and wet (light showers) pollination period, which caused late flowering and lighter crops throughout. However, many growers are semi-confident there's a good year to come and, coupled with our quality testing program, consumers can look forward to eating some great fruit and, in turn, growers see some favourable returns.

This is in comparison to growers in some areas on the East Coast. Many there are still reeling from the impact of floods, then hail, in the later stages of 2022. However, we weren't completely free from natural disasters ourselves. The recent fires in Donnybrook and surrounding towns did threaten some properties early this year and hail was recorded in late 2022. Both, however, are not predicted to have made much of an impact. We are glad that lives and homes were safe and that there was minimal impact to orchards – a lucky break that was helped by vigilant and well-prepared orchardists.

2023 maturity testing has commenced

It is timely that we again remind producers, wholesalers, market agents, produce buyers and fresh food retailers that the WA apple industry has begun its 2023 maturity for taste quality inspections. Gala, Granny Smith and Pink Lady are all under scrutiny for maturity levels for taste so the WA pome industry can continue to drive consumer taste satisfaction and consumption. As such, we have again committed a page in this section of the magazine as a public notice from the industry to advise of the program. Quality testing results will

continue to be communicated via email to invested producers and stakeholders with details of passes and fails as they occur on a weekly basis.

Labour and attracting workers

From all reports, there is a more transient labour force about in the regions. International backpackers, particularly from Europe, are returning to the holiday-maker program circuit. A positive that came out of the pandemic was that bigger growers are now fully engaged in seasonal worker programs, which has enhanced their business models and made room for the smaller growers to pick up other labour sources. Our take-out from Covid is that it has exposed a real need

public sector employee) as our new Commissioner. Both were appointed by Minister for Agriculture and Food, Forestry and Small Business, the Hon. Jackie Jarvis MLC, in January.

This change marks a new era for the APC in both FFS collection and reporting and service to producers' committees, which will be exciting for everyone. Other positive news is that the APC will be calling for projects from each of the producer committees in the first half of the financial year. If you have a project you wish to put forward, please contact me or our Project Manager Susie to assist in this process. This opportunity will also be communicated to you and our stakeholders via our communication

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... many growers are semi-confident there's a good year to come and, coupled with our quality testing program, consumers can look forward to eating some great fruit.

▶ INTERNATIONAL backpackers, particularly from Europe, are returning to the holiday-maker program circuit.

to promote horticulture as a career of significance, especially as it involves providing locally grown fresh food for the people. Pomewest will be working in collaboration with other horticultural industries and the WA State Government to ensure there is adequate promotion of the sector and providing appropriate skills-based training to encourage interest. Creating access to a career-focused workforce and driving passion to the sector is essential for succession.

APC/Pomewest Committee update

The Agricultural Produce Commission (APC) has made some change-of-guard announcements. We welcome Monica Radomiljac (wine producer and industry identity from Pemberton) as Chair and Mark Sweetingham (former

platforms via E-News, social media and the Pomewest website, along with other news and updates throughout the year.

The Pomewest Committee meets four times a year and addresses timed annual-based criteria at each meeting: in February, we typically review financials, current projects and opportunities for project development; in May, we set and approve budgets; in August, we review the past financial year in conjunction with the Annual Pome Grower Dinner event; and in November, we review key performance indicators against the current strategic plan. If at any stage you, our growers, wish to have a say in how your fee for service money is spent or have any feedback, this is encouraged by contacting your local regional committee member.



Pome-focused events

Growers' FFS dollars are being used to sponsor events to promote the industry in a value-adding and industry-building capacity to coincide with the season launch from March through to May. The first event on the calendar is the WA Apple Variety Innovation Conference (March 28–30).

Through this event we host national and international producers, marketers and stakeholders who will shine a light on the WA apple industry and our Manjimup-based national breeding program. The conference program is varied and celebrates wins in the commercialisation of the ANABP 01[®] variety for the WA industry. It also promotes opportunities, particularly for export. In turn, there is the potential for increased local production to future-proof the industry. Pomewest is a major sponsor of this event with the Fruit West Co-operative, DPIRD and WA Farm Direct.

We will also be involved in the Great Graze, which is held at the Cottesloe Civic Gardens on March 26, and will be at the Donnybrook Easter Festival Street event in Donnybrook on April 8. Both

events support and promote regional growers and assist with new-season fruit promotion.

Pomewest is also proud to be the Gold Sponsor of the 2023 Australian Cider Conference to support processing fruit producers and value-adding activities. This event will be held in the Perth Hills on May 3–5. The conference theme is *The Business of Cider*. Keynote speaker Ryan Burke from the United States will join Australian and international experts to discuss the *hows* and *whys* of running a successful craft-cider business. Both Susie and I will be presenting to promote the activities Pomewest undertakes to demonstrate support and improved engagement with the sector.

Nationally, the event calendar includes: the APAL update in Melbourne and Hort Connections in Adelaide in the first half of the year, and the WA Horticulture Update (WAHU) in the second half of the year. At these events there are great opportunities for producers to learn about new technologies, innovations and initiatives in the pipeline, all designed to improve grower profitability and sustainability.

In this issue

In this section of the autumn issue of *WA Grower*, Susie has written a report on the February 2023 Future Orchard Walk. Held at Santa Rita Orchards on February 6, the walk focused on using block data to lead discussion on targets set for the season. Dario Stefanelli, of DPIRD, has also contributed to this issue with an article that supports findings of a co-funded project that uses innovative technology for apple orchard management, which is based on mapping and monitoring orchard growth using digital imagery.

I would like to finish by again inviting any grower or stakeholder to contact us if you need any assistance with any industry matters. And to remind you to visit our website pomewest.net.au and invite all FFS payers to visit and register for the grower zone for more detailed industry information. Both Susie and I are committed to our service roles for the pome industry and always welcome your engagement and feedback. 🍏

MORE INFORMATION ►

Contact Nardia Stacy, Executive Manager, 0411 138 103 or nardia@pomewest.net.au



fruitwest
Co-operative Ltd.

program

Western Australia
**Apple Variety
& Innovation**
CONFERENCE

RAC Karri Valley, Pemberton, WA
28th to 31st March 2023

WA Farm DIRECT

28TH MARCH 2023
Opening Dinner in Perth

29TH & 30TH MARCH 2023
WA Apple Breeding Program
ANABP 01[®] Grower Session
Grower & Retailer Sessions
Orchard Tours
Lunch and Dinners supplied

31ST MARCH 2023
Travel to Perth

TICKETS: Available in October 2022
ACCOMMODATION: RAC Karri Valley
<https://bit.ly/3bZyi5L>



Pre-harvest Walk 2023

Block data is king when it comes to harvest targets and we have all the tools to help you succeed.



BY SUSIE MURPHY WHITE
WA FRONT LINE
ADVISOR FOR THE APAL
FUTURE ORCHARDS®
PROGRAM

The importance of block data and using that data to achieve harvest targets was the hot topic on APAL's Harvest Series Future Orchards® Walk in WA, which was hosted by Terry, Basil and Mark Martella of Kirup early this year.

A standout was the Santa Rita Orchard team's use of data in near real-time for informed and effective decision-making; desired yields were reached through their use of previous block performance to set targets.

The orchard walk focused on three blocks: Lady in Red, Pink Lady and Bravo. Each of these blocks had different targets and challenges to achieve and overcome. Future Orchards® AgFirst consultant Jonathan Brookes stressed the role of crop load in managing vigour: "Crop is the only tool you get paid for, everything else you pay for."

“The role of crop load in managing vigour? "Crop is the only tool you get paid for, everything else you pay for."

— Future Orchards® AgFirst consultant Jonathan Brookes



Growers were asked to review their block performance against targets set early in the season and think about what, if anything, they might change next season. Tools from the OrchardNet®

Program (profit report, production report and winter pruning report) were used to assess the performance of each block visited. OrchardNet® is available to all growers to help analyse, benchmark and manage productivity analysis, crop estimation, pruning and thinning reports, industry benchmarking, irrigation management and soil and crop nutrition management.

Everyone enjoyed the afternoon, which finished off with a sundowner and a

great opportunity to talk about the upcoming harvest season. Thank you to Mark, Basil and Terry Martella for hosting the Future Orchards® walk. It was great to see APAL's Variety Development Manager Tom Frankcomb and Publications Manager Alison Barber here in WA, and thank you to Jonathan Brookes from Future Orchards® AgFirst team who made his first visit to WA.

Also thank you to everyone who attended the walk. We hope the ideas discussed will help improve orchard productivity and profitability. We look forward to seeing you all at the next Future Orchards® walk in winter 2023. 🍎

MORE INFORMATION ►

Contact Susie Murphy White, Front Line Advisor for APAL's Future Orchards® on 0429 413 420 or susan.murphy-white@dpird.wa.gov.au.



The heat is on



Will robotic cartographers sending heat maps to orchardists be the future of apple orchard management? DPRID thinks it may well be.

► **MEET** the cartographer: a sophisticated camera is attached to a buggy to capture orchard information.



BY DR DARIO STEFANELLI
SENIOR RESEARCH
SCIENTIST, DEPARTMENT
OF PRIMARY INDUSTRIES
AND REGIONAL
DEVELOPMENT

Results of a one-year pilot study in Manjimup to map and monitor orchard growth using new digital imaging technology that delivers information in the form of heat maps have been released.

The study by the Department of Primary Industries and Regional Development (DPIRD), in collaboration with the Agriculture Produce Commission (APC), Pomewest and Aero Vine, was conducted during the 2021–22 season.

The technology is called a 'cartographer', which was developed by Australian company Green Atlas and implemented in Western Australia by Aero Vine. It uses a combination of Light Detection and Ranging (LiDAR) data and digital images captured by a sophisticated camera mounted to a buggy (the cartographer) to capture orchard information.

There is great value in the technology when it comes to growers having the capability to achieve set crop load and fruit size targets when planning and managing orchards. The technology visibly identifies poor block performance allowing orchardists the ability to intervene at the required stages to maximise block performance. The images collected with the cartographer generate heat maps that show abundance of the desired traits. It also produces aerial maps of the orchard, showing spatial variability within the block, allowing for easier block planning and management.

Getting started at bloom

Three bays of 11–13 trees each were selected at bloom, according to their perceived flower density and ranging from high to low for each of the cultivars assessed: ANAPB 01[®] and Rosy Glow. These had the function of calibrating the cartographer for the generation of heat maps. Performance of the tree bays were regularly mapped and monitored at various stages of development throughout the season (see graphs). Data collection started at bloom and continued during the growing season to map and monitor flowering, canopy growth, fruit growth, fruit counts and fruit colour development.

Flowering

The flowering data was used to select the truthing bays. The Rosy Glow block showed light flowering and setting – way below average, according to the grower – which made it more difficult to relate to a full commercial scale. However, it did not reduce the usefulness of the information. The examples and graphs are mostly focused on the ANAPB 01[®] block to show the various information gathered from the monitoring.

Canopy growth

Data comprised of information from the cartographer, via the LiDAR technology, will be useful to growers. Information on canopy height will help to understand and plan pruning, both in winter and

summer, while canopy area – the space used by the trees – is useful to understand gaps or areas of more or less growth. When monitored in time, this would assist in making decisions regarding irrigation and/or fertilisation, as well as pruning.

Canopy density correlates with the amount of leaves on the trees: the more leaf, the higher the density, and leaf area is a combination of canopy area and density, creating information that Agriculture Victoria was able to correlate with light interception, similar to the effective area of shade. This is important information as the ability of canopies to intercept and harvest sunlight is related to the potential to produce abundant high-quality fruit, so the heat maps can give feedback for pruning canopies for even sunlight capture, or may influence thinning targets, or rates of fruit maturation later in the season.

Figure 1 shows the sequence of the leaf area growth in the ANAPB 01[®] block during the growing season, with lighter colours indicating lower leaf area. The variability is maintained between

dates to show the progression of leaf area during the season, which reached the maximum between January and February. The sequence clearly shows that there is an area in the right back corner of sparser canopy (red circle) and an area at the front of higher density (blue circles).

The same areas with similar patterns were noticeable in the heat maps for canopy height, area, density and fruit numbers (data not shown). This will help in designing ad hoc interventions, such as additional pruning in vigorous trees, increased fertilisation in weaker trees, control level of irrigation in specific patches, crop load adjustments and so on, to try to reduce the variability in the block, once identified.

Fruit size

Fruit growth had slightly different behaviour, depending on the cultivar, but there were similar patterns. The bays selected on high-, medium- and low-flower density, as calibration/ground truthing, were used to monitor fruit growth during the season, check

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The technology visibly identifies poor block performance allowing orchardists the ability to intervene at the required stages to maximise block performance.”

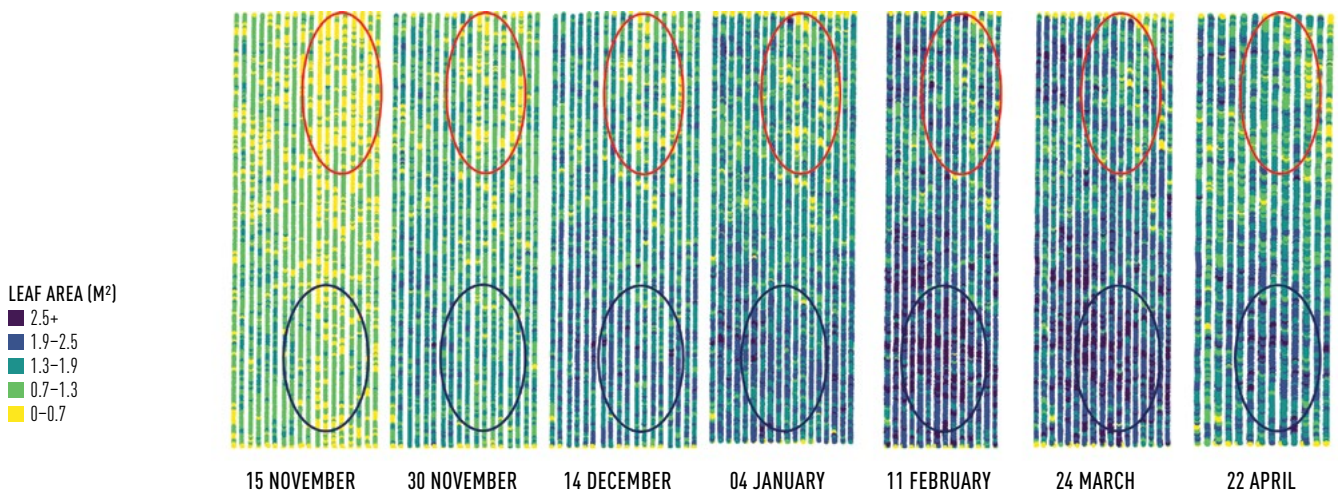


FIGURE 1. HEAT MAP SEQUENCE OF THE RELATIVE ABUNDANCE OF LEAF AREA GROWTH IN THE ‘ANAPB 01[®]’ BLOCK DURING THE 2021–22 GROWING SEASON. Red circles indicate zones with lower leaf area, while blue circles indicate zones with higher leaf area. Scale indicates the relative abundance.

Source: DPIRD

growth patterns and determine eventual differences between areas with higher or lower fruit density. Figure 2 shows fruit size development for ANAPB 01[®] (left) and Rosy Glow (right).

For Rosy Glow, there were no discernible differences between the fruit coming from the three monitoring bays. For ANAPB 01[®], while there were no statistical differences between fruit size coming from the different bays, it was possible to notice a slightly different behaviour with fruit from the bay at low density that were still growing at harvest time while fruit at high density already reached maximum peak. This could help in the logistics of labour if zonal harvests were applied.

Fruit colour

Fruit colour is an important parameter for growers. So much so that actions are regularly performed to improve colour closer to harvest. Understanding the zones in blocks that need additional intervention because of lower colour could be invaluable to growers. Figure 3 shows fruit colour development for ANAPB 01[®] (right) and for Rosy Glow (left) during the season. Heat maps again show abundance of colour within the image and between dates, indicating colour progression during the season.

Colour is measured through a new index that represents the typical natural progression of fruit as it progresses in maturity towards harvest (developed by researchers at Agriculture Victoria). The Colour Development Index (CDI) is on a scale from 0 to 1, from green to red fruit colouration. As fruit ripens, CDI progresses from low numbers near 0 to higher numbers on this scale to a maximum of 1.

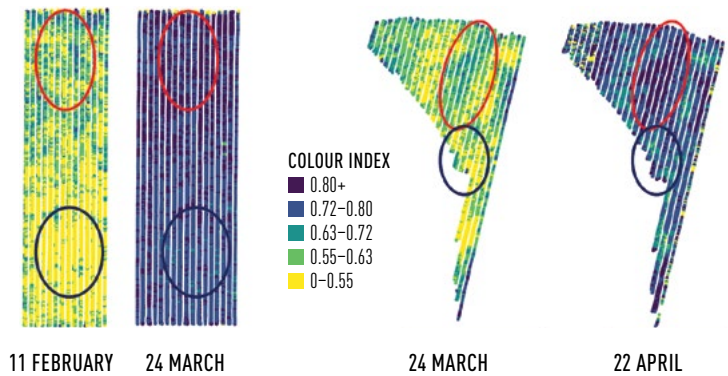
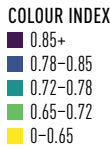
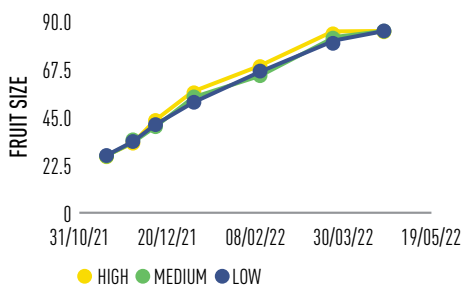


FIGURE 3. HEAT MAP SEQUENCE OF THE RELATIVE ABUNDANCE OF COLOUR, MEASURED AS HUE ANGLE IN ANAPB 01[®] (RIGHT) AND ROSY GLOW (LEFT) BLOCKS DURING THE 2021-22 GROWING SEASON. Red circles indicate zones with redder fruit, while blue circles indicate zones with fruit with less red colour. Scales indicate the relative abundance. Source: DPIRD

In both blocks, it is clearly noticeable that fruit colour is uneven with areas of more or less red fruit. It is also noticeable that the red colour increased between the two dates, however variability was still present. This information could be useful to adjust interventions aimed to improve colour, such as leaf plucking, canopy pruning/opening or usage of reflective matts.

Fruit quality

Fruit coming from the monitoring bays with high-, medium- and low-flower density were collected at harvest and analysed for quality parameters. There were no statistical differences in fruit size, weight, flesh firmness, Brix or starch index. There was a tendency for fruit from the bays with less fruit to

be slightly more sweet and less mature, but not statistically. All fruit was within the commercial parameters for the two cultivars.

Overall, monitoring apple blocks with the cartographer during the growing season delivered highly useful and practical

“ Information on canopy height will help to understand and plan pruning, both in winter and summer, while canopy area ... is useful to understand gaps or areas of more or less growth.

information for growers that could help in achieving the crop load and quality parameters targeted: the heat maps will help growers in understanding the variability in the various blocks and

intervene accordingly; variability prior to harvest will assist in picking logistics and directing labour; sequential monitoring will help in understanding the efficacy and efficiency of the interventions. 🍏

MORE INFORMATION ►

Contact Dario Stefanelli on (08) 9777 0158 or email dario.stefanelli@dpird.wa.gov.au.

THANK YOU ►

The authors would like to thank the apple industry for their support through the APC, Pomewest and Newton Orchards for making available their blocks to run the experiment; and Aaron Rodwell, of Aero Vine, for the time and effort in collecting and elaborating the data.

FIGURE 2. FRUIT SIZE DEVELOPMENT FOR 'ANAPB 01[®]' (LEFT) AND 'ROSY GLOW' (RIGHT). High, medium and low represent the flower and subsequent fruit density after setting of the chosen bays for monitoring/ground truthing. Graphs were elaborated from data obtained by the Cartographer. Source: DPIRD



Cider games

AusCider will tour orchards and cideries throughout the Perth Hills and delve into the science of apple growing as part of its national conference.

AusCider 2023 hits the Perth Hills from May 3–5 with 2.5 days of seminars, networking events, a full-day orchard and cidery tour and the national industry association's Annual General Meeting.

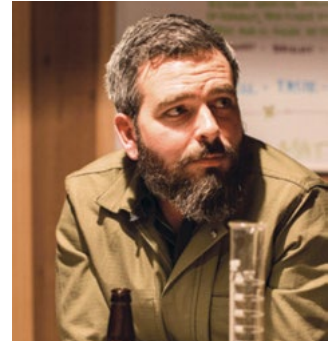
Pomewest will be presenting at the event on the WA apple industry as part of the Production & Growing session of talks, and other experts will present topics such as 'Microbial solutions for no/low-alcohol Cider, Beer and Wine', 'Mobile canning demonstration – quality control, shelf life and micro canning pros and cons' and 'The Australian National Apple Breeding Program – What Does It Take to Create a New Apple Variety?'.

A full day tour on May 5 (9am–4pm) will take in Pickering Brook and Karragullen apple orchards, plus Raeburn and Carmel apple orchards/cideries and cideries throughout the Bickley Valley, such as Naked Apple Cider, Funk 2.0 Henley Brook and Blasta Brewery.

The Bickley Valley is a hotspot for cider as home to cideries owned and operated by local families who work alongside our apple growers and other value-adding businesses. A number of growers have diversified by growing bitter and bittersweet cider apple varieties, which can be crafted into traditional-style ciders. The tour will explore this relationship between cider makers and apple growers, plus delve into the latest developments in production and sustainability.

This event brings together cider producers, fruit growers, researchers and cider industry representatives from across Australia and overseas. President of Cider Australia, Warwick Billings, says the conference will deliver a unique program of technical, sensory, science, production and business-related cider education.

"This year's conference theme is 'The Business of Cider'. Keynote speaker Ryan Burk from the United States will join Australian and international experts to discuss the hows and whys of running successful craft cider businesses. "We are excited about holding our first event in Western Australia as



Meet Ryan Burk

Our keynote speaker is jetting in from New York with his lifetime of apple growing and cider industry experience.

From growing up in the epicenter of New York State apple production to leading some of the United States' most ambitious and industry defining cider programs, Ryan Burk has spent a lifetime with apples and cider. He recently launched his own label, Occam Cider Co., as well as co-founding beverage innovation consultancy Feel Goods Company. Ryan has served on the board of The American Cider Association and is a founding board member of The Cider Institute of America, the US's premier science-based education platform. He has been recognised for his industry advocacy, innovation and collaboration by *Imbibe 75 People to Watch and Wine*.



► **CARME** is a cidery and three-generation orchard in the Perth Hills that will be part of the AusCider tour. Here, farm worker Bonnie picks apples specifically grown for the brand's much-loved cider.

it will allow us to forge stronger linkages with the West Australian cider community and showcase the innovations and developments happening in Western Australia and beyond," says Warwick. 🍏

MORE INFORMATION ►

For full program and ticketing info visit www.cideraustralia.org.au/auscider.



POMEWEST IS THE POME SUBCOMMITTEE OF THE POME, CITRUS AND STONE FRUIT PRODUCERS' COMMITTEE OF THE AGRICULTURAL PRODUCE COMMISSION IN WESTERN AUSTRALIA.



Attention: apple industry

Are you an apple producer, wholesaler, store manager, produce buyer or fresh fruit manager? Know that the 2023 WA Quality Inspections have commenced for Gala, Granny Smith and Pink Lady varieties.



BY NARDIA STACY
EXECUTIVE MANAGER,
POMEWEST

2023 WA Quality Inspections have commenced for Gala, Granny Smith and Pink Lady® apples.

Industry-led testing has begun in the apple industry to ensure that three commodity apple lines – Gala, Granny Smith and Pink Lady® – have met industry-endorsed minimum maturity standards when presented for sale (see standard chart below). Inspections are funded by the Agricultural Produce Commission Fee for Service collection for pome fruit. Testing promotes confidence that these varieties meet consumer taste satisfaction and will encourage repeat sales.

Minimum maturity standards



Firmness (kg-f)	6.5	6.5	6.5
Starch index score (6 point scale)	3	3	3
Total soluble solids (°Brix)	11.8	11	13

The above standards have been endorsed by the WA pome industry as part of industry self-regulation practice and follows the parameters of existing quality programs already running nationally for the table grape and citrus industries.

We invite your participation in the program. It is our intention to report to you test results and work with you to address any fails. Fruit buyer? We encourage you to establish with your suppliers that fruit sold to you has passed these standards.

The end goal is to encourage repeat purchases with great eating experiences for our customers to promote increased consumption, product demand, sales and returns for the entire supply chain. 🍏

MORE INFORMATION ►

Contact Nardia Stacy, executive manager Pomewest on 0411 138 103 or email nardia@pomewest.net.au.

POMEWEST IS COMMITTED TO ENSURING THE APPLE INDUSTRY PROVIDES QUALITY APPLES TO MARKET. POMEWEST IS A POME GROWER SUB-COMMITTEE OF THE AGRICULTURAL PRODUCE COMMISSION THAT SERVES THE WA POME GROWERS.