



PHOTOS: VICTORIA BAKER PHOTOGRAPHER



# pome update





# contacts

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### Budgeted income 2021–22

Project	\$
General Account Budget (including FFS, interest Project Grant Funding APAL, Hort Innovation and DPIRD)	482,780
Biosecurity Account Budget (FFS and interest)	61,245

### Budgeted expenditure general account for 2021–22

Project	\$
Project Manager including operating expenses — Susie Murphy White	96,000
Quality Testing Project — Maturity and Retail	36,000
Building Horticulture Business Capacity Program	20,000
Medfly Surveillance Trapping Network Kim James	12,500
Systems Approach Low Pest prevalence for Market Access	40,000
Promotion & Publicity Local Project — Fresh Finesse including events with Buy West Eat Best	37,500
Annual Meetings and Communication including publications	15,000
Industry Sponsorships and Association Memberships	6,000
Study Tour COVID-19 permitting	20,000
Producing Sustainable Crop Load Project — DPIRD	30,000
Platform Project	40,000
Administration including salary and office costs	192,000
APC charge @10% of FFS income	42,000
<b>Total</b>	<b>587,000</b>

### Budgeted expenditure biosecurity account 2021–22

Project	\$
Codling Moth (DPIRD)	35,500
APC charge @10% of FFS income	6,000
<b>Total</b>	<b>41,500</b>

### 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

# From the Pomewest Executive Manager

## Season update



BY NARDIA STACY  
EXECUTIVE MANAGER,  
POMEWEST

“A comely sight indeed it is to see, a world of blossoms on an apple tree.”

John Bunyan

Spring adds new life and new beauty to all that is. Celebrating the first bud burst this year, the significant rainfall and chill hours recorded so far means we should have a solid start in the development of new season’s fruit.

In looking over my report the same time last year, it is concerning that COVID-19 is still dominating world news. The Delta variant is currently wreaking havoc with outbreaks, and persisting snap lockdowns across the country. In turn, the ongoing labour implications with closed international borders continue. In the meantime, we all manage the best we can under the circumstances, but you have to wonder, will I be writing about the same scenario again in a years’ time? — let’s hope not.

In mid-July we sent out, via grower newsletter, the 2021-22 budget projects for income and expenditure for our general and biosecurity accounts. These will also be published to the left of this article in each edition of the 21–22 year. This demonstrates transparency in our communications directly with growers and announces the priority projects and activities for the new financial year.

Congratulations to Susie! This year we are proud to announce that our Project Manager Susie Murphy White is now 50 per cent externally funded for projects including PIPS 3 Soil Health trial site, APAL Tree Census and APAL Future Orchards. She continues to demonstrate that the quality of her work and in-turn the successful results, are being widely recognised by the industry’s national funding stakeholders.

It is our intention to continue to build leveraging external funding for industry benefit from your grower FFS contributions.

### Labour

Securing workers for our spring preparation and summer harvest is still on the agenda. Across the board WA generally is living with serious labour crisis as the pandemic continues. Department of Primary



► **BRYN Edwards** (vegetablesWA) is the project leader of the Building Horticulture Business Capacity program and will be working with the expertise of Planfarm consultants such as Paul Omodei.

### Building Horticulture Business Capacity program is underway

The BHBC program is a collaborative project, with the Agricultural Produce Commission, vegetablesWA, Planfarm, DPIRD, and Hort Innovation — designed to improve business capacity for horticulture in WA. Pomewest have committed \$60,000 of FFS funds within our budget over the next three years so that our growers can take part. Our seed funding will be significantly leveraged by the funding partners.

We invite and encourage our FFS paying growers to be part of this new project which is designed to you gain a clearer understanding of the profit levers inside the cost structure of your businesses.

In addition, provide our industry with measurable benchmarking data to prioritise areas for future funding support. If you see the value and would like to be involved, we can absolutely guarantee your business confidentiality, make sure the information collection process is as uncomplicated as possible and the process of the program is managed carefully.

The team has already met with several growers in the South West who have already expressed keen interest in being involved. Many have embraced the opportunity for a 'fresh eyes' approach to assist them to find innovative ways to improve efficiencies and potentially lift returns. We intend to meet with pome growers in the Hills region soon. It is hoped that in the near future other WA horticultural sectors will join in to build the program.

We celebrate Ben Darbyshire in his retirement as Chairman of the Fruit West Co-operative.

### WA Horticulture Update event — November 2021

Pomewest is currently involved in organising a whole of Horticulture WA Hort Update (WAHU) to celebrate the International Year of Fruit and Vegetables. We will actively be promoting the event over the next few months, so our growers can be involved in this great opportunity to celebrate our value to the community, share valuable insights and information, and have the opportunity to network with growers collectively across the horticultural sector.

### Farewell and thanks to Paul Good — WA APAL Director

This November, Paul Good finishes his tenure after six years as WA Director of APAL. We thank Paul for his service on behalf of the WA apple and pear growers over the years, and look forward to announcing his replacement after the selection process for a new appointee has been completed. We wish Paul all the best in his future enterprises.

### This edition

We celebrate Ben Darbyshire in his retirement as Chairman of the Fruit West Co-operative and in so doing acknowledge his service to industry over many years. Chris Hall from Total Quality Assurance Systems gives us an insight on the outcomes of the last three year's quality testing in wholesale and retail markets,

and Susie contributes an article from the Biosecurity Horticulture Liaison Officer project depicting information on Endemic Pests (established pome pests in Australia but not present in WA).

In closing, I would like to take this opportunity to invite any of our growers to contact both Susie and myself if you need any assistance with any matters. Our committee, in turn, are also available to discuss issues and are willing to bring any formal matters for consideration at our quarterly Committee meetings the last meeting for the year will be held in mid — late November. 🍎

### MORE INFORMATION ►

Contact Nardia Stacy, Executive Manager, 0411 138 103 or [nardia@pomewest.net.au](mailto:nardia@pomewest.net.au)

Industries and Regional Development (DPIRD) are assisting the Hort industry by funding Kit Sainsbury as a Labour Scheme Facilitator to assist growers to access seasonal workers. As such, Kit has now moved under the management of DPIRD to continue this role. This is fast becoming the only real solution to the labour shortage, as the backpacker numbers nationally continue to decrease. Flight and quarantine programs are in place and I encourage growers who need to secure workers for the upcoming season should get involved either as an approved employer or access via labour hire companies.

### Netting update

We are all aware that netting is a high priority for the WA pome industry. Pomewest have been working with DPIRD to access funds allocated in the National Netting Scheme. Of the allocation it is believed that only half of the funding has been accessed so far. In Mid-August Growers were invited to an on-line workshop section to flesh out the details and criteria for application. Additional funding to the scheme was also announced.

# A tribute to Ben Darbyshire *on his retirement*

► BEN Darbyshire and Marcel Veens at the Manjimup Horticulture Research Institute 2018.

Ben has played a critical role in the apple industry for more than 20 years.



**BY NARDIA STACY**  
EXECUTIVE MANAGER,  
POMEWEST

**I**n this spring edition, I have the honour of writing a tribute to Ben Darbyshire following his recent retirement as Chairman of the Board of Fruit West Co-operative Limited.

Ben has played a critical role in the apple industry for more than 20 years, including 9 years at the helm of Fruit West. I would like to acknowledge and thank him for his service and guidance by reminiscing and mentioning some of his achievements over the years. In doing so, I hope to encourage him to remain connected as a valued member of the fruit growing family. His experience and wealth of knowledge is unsurpassed, as he remains a treasured and well-respected asset of the sector.

Orcharding was always in his blood, with Ben spending the first 10 years of his life on a Balingup orchard established by his father.

A fascination with apples motivated him to pursue tertiary education at The University of WA (UWA) and later at the University of Tasmania, where he studied the physiological and pathological aspects of apple trees and was awarded a PhD in perennial plant physiology from the Agriculture Faculty. From there he worked in NSW with the CSIRO as a Principal Research Scientist in the Division of Irrigation Research for plants. He then returned to UWA with his wife Geraldine to care for students and teach science and its communication. As well as being Warden of St George's College at UWA for 26 years, Ben also took on other roles, including Director and Consultative Director of the Perth Convention Bureau for 10 years.

In 1990 Ben and Geraldine established their Newlands property to fulfil their passion for the science of orcharding. They planted a 10-hectare orchard. It was then that Ben started his tenure with the WA Pome Industry.

That tenure began with the position of Chair of the Apple and Pear Council of the former WA Fruit Growers' Association (WAFGA). In his own words "farming presents so many challenges in production, marketing and social issues, which are enormous to navigate". The industry was fortunate that Ben cared enough to stand up as a leader and direct the fruit industry to grow and prosper despite those challenges.

In 2009, WAFGA was dissolved. The Pome, Citrus and Stonefruit Committee of the Agricultural Produce Commission was established in its place and operated under the banner "Fruitwest".



**Ben was appointed as the Inaugural Chair of Fruitwest and served until it was decommissioned in 2014. It was then that the committee was split into the various commodity subcommittees we now know — Pomewest, WA Citrus and WA Stonefruit.**

Ben was the Inaugural Chairman of Fruit West Co-operative Ltd (Fruit West) when it was registered as a growers' co-operative in 2012. He retired from that role on 30 July. As Chairman, Ben was responsible for the mammoth task of commercialising the new Western Australian apple variety ANABP 01<sup>®</sup> and introducing it to the world.

### The ANABP 01<sup>®</sup> story

Ben was part of a select group who first discovered the ANABP 01<sup>®</sup> variety at an industry evaluation of new cultivars in 2010 at the breeding program facility at DAFWA's Manjimup Horticultural Research Institute.

In the process of reviewing the selections, they all noticed the ANABP 01<sup>®</sup> variety as a standout. First, it was the unique colour that first captured their attention, but it was the bonus of an all-round taste profile and 'wow' factor that further excited this band of growers. Many dared to think "we could be in the presence of another 'strike of gold' for the industry" mirroring the Pink Lady<sup>®</sup> model set years before.

► **IN July 2014 announcement of the Commercialisation with the then DAFWA Director General Rob Delane, Ben Darbyshire and the then Minister of Agriculture The Hon Ken Baston MLC.**

In 2012 to capture this opportunity, under Ben's guidance, the industry decided to support the establishment of Fruit West as a vehicle to manage the commercialisation of the ANABP 01<sup>®</sup> variety for the benefit of WA fruit growers.

The WA Apple and Pear industry invested a significant amount of seed capital to fund the formation of the entity. Fruit West was appointed by the WA Agriculture Authority in 2014 as the exclusive licensee in Australia for the commercialisation of the ANABP 01<sup>®</sup> variety.



The Bravo™  
success story.

From its inception, Fruit West has grown significantly and now has 92 registered growers across mainland Australia, seven licensed nurseries, 15 licensed pack-houses and a licensed marketer. Each one plays a vital role in delivering premium quality Bravo™ apples to the Australian and overseas markets. It's a great success story, with plenty of scope and room left in the tank to become even more influential as production increases and future opportunities present themselves.

**There's been a few ups and downs along the way, as there are with all great stories, but essentially the prophecy of the founding grower group has been realised.**

This is thanks to Ben, the Fruit West Board of Directors and many others involved on the journey. It must be said that it was because of Ben's personal commitment to realise the vision of the original group every step of the way, that it has ultimately come to fruition.

On hearing of his retirement, many individuals have expressed their gratitude and have acknowledged the contribution Ben has made to the industry as a whole, and to the ANABP 01<sup>®</sup> variety in particular. This may be well over due for many of us but important to say!

## Thank you Ben!

Ben, you are a true gentleman and legend of the fruit growing fraternity. Personally, I thank you for your mentoring, giving me much advice and support in my various roles in the fruit industry. I value our friendship, and mutual love of all things apples. I hope you can enjoy some well-deserved time with Geraldine and have some peace away from the constant and sometime loud voice of industry.

**Nardia Stacy** | Executive Manager,  
Pomewest

Dr Ben Darbyshire's leadership and contribution to the Australian Pome fruit industry has been extensive and significant, and always with the goals of achieving sustainable profitability for growers and a reliable eating experience for consumers.

Ben's vision, determination and many hours of hard work resulted in WA growers forming the Fruit West Co-operative, which now manages the commercialisation of the new apple variety ANABP 01<sup>®</sup> in Australia. Managing and marketing a variety primarily for the benefit of growers is a first in the Australian Pome industry.

Ben has shared his knowledge and experience so generously. The Australian Pome industry is in his debt. Ben, the Board and members of Fruit West wish you and Geraldine a very well-earned rest, and good health and happiness in your retirement.

**Ann Lyster** | Interim Chairman Fruit West

Ben has been loyal, diligent & tenacious in serving the WA fruit industry for many years. His selflessness & ability to have foresight for many issues has been a real asset to all WA growers. The enormous work behind the scenes is not missed by me so it's with some sadness that he is retiring but also happiness that Ben & Geraldine can enjoy whatever they pursue. I personally thank and wish Ben all the best for the future.

**Terry Martella** | B Martella & Sons

I first met Ben as he marched commandingly into our office searching for a solution to what became the first of many solutions that were subsequently required and consistently found. Many ups, many downs but each time the issue was met head-on and addressed. I learnt this to be Ben's essence — identify, resolve and manage — always with the grower uppermost in mind. The WA industry has undoubtedly been lucky to have Ben on its side — the debt is un-repayable.

**Ingrid Behr** | CEO, APC

I was very fortunate to spend time with Ben while I was a committee member of Fruitwest representing Citrus. At the time the fruit industry was confronted with some quite challenging issues. Having Ben as Chair provided the industry with an experienced and steady hand at the wheel. The committee gained greatly from Ben's experience with board governance and procedure and was much appreciated. Ben has dedicated a huge amount of time to the Pome and fruit industry, always worked for the good of the growers and never shied away from tough decisions in its pursuit. The industry has been very privileged. Wishing you all the best Ben and Geraldine in all things you may choose to do.

**Shane Kay** | Northern Valley Packers,  
Bindoon

I would like to thank Ben for his tireless contribution to the WA Pome industry and for being the driving force behind the establishment of the ANABP 01<sup>®</sup> variety into the Australian Apple Industry. The initial success of ANABP 01<sup>®</sup> and Bravo™ apples is a result of Ben's vision, leadership and passion for our industry. Ben and I have shared a common obsession for ensuring the ANABP 01<sup>®</sup> variety reach it's deserved potential and I am appreciative for all the knowledge I have gained from working closely with Ben for many years. I also thank Geraldine for all your background support and involvement. I know by supporting Ben's dedication, your contribution to industry has also been invaluable to everything Ben has achieved. Thank you Ben and Geraldine.

**Steele Jacob** | DPIRD

Ben is an absolute stalwart of the WA pome industry. On behalf of myself and everyone at Newtons I'd like to thank Ben for his huge contribution to the pome fruit industry — particularly his work with the APC and tireless ongoing efforts to establish Bravo over many years. Ben has shown an immense level of perseverance, diplomacy and dedicated altruism to keep working on behalf of the greater good that you don't see very often in any industry. We wish him and Geraldine all the very best for the next chapter.

**Harvey Giblett** | Newton Orchards  
Manjimup



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1 & 2. Establishment of the Fruit West Co-operative in 2012.  
 3. Team Bravo — grower visits South Australia, Jenny Mercer, Ben Darbyshire, Colin Griffen, Steele Jacob and Nardia Stacy, 2017.  
 4. Assessing the ANABP trees at MHRI 2015.  
 5. First fruit packed for market as the Bravo™ brand in 2016 — growers celebrate the milestone.  
 6. Growers at MHRI ANABP 01 Workshop 2015.



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There are now 92 registered Bravo™ apple growers across mainland Australia.



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# Pome pests we don't have in WA, but are established in other Australian States



► QUEENSLAND fruit fly.

By using early detection and reporting systems we can protect our pome industry.



PHOTOS © DPIRD

BY SUSIE MURPHY WHITE  
PROJECT MANAGER,  
POMEWEST

There are a number of plant pests and disease of quarantine concern for the West Australian pome fruit industry that are present in other Australian states and are absent in WA at present (see Table 1). They are listed as prohibited organisms for Western Australia under section 12 of the *Biosecurity and Agriculture Management Act, 2007*. It is extremely important to keep our West Australian industry free of these pests and diseases to protect our industry.

Specific surveys for early detection have been occurring for codling moth and Queensland fruit fly over many decades. While other pests are part of the day-to-day surveillance activities of industry, government and the community.

DPIRD's MyPestGuide app facilitates industry and community into reporting unusual pests that are identified and mapped.

The pests and diseases listed have the potential to cause serious crop losses to the pome industry in WA. By using early detection and reporting systems we can protect our pome industry. If you see something unusual report it immediately to the Pest and Disease Information Service either by phone or through the MyPestGuide Reporter app on your phone.

TABLE 1. KEY POME PESTS AND DISEASES ESTABLISHED IN AUSTRALIA BUT NOT PRESENT IN WA.

Common name	Scientific name
Black vine beetle	<i>Coleoptera: Curculionidae</i>
Citrophilus mealybug	<i>Pseudococcus calceolarie</i>
Codling moth	<i>Cydia pomonella</i>
Oriental fruit moth	<i>Grapholita (Aspila) molesta</i>
Oystershell scale	<i>Diaspidiotus ostreaeformis</i>
Pear leaf blister mite	<i>Epitrimerus pyri</i>
Painted apple moth	<i>Orgyia anartoides</i>
Queensland fruit fly	<i>Bactocera tryoni</i>
White peach scale	<i>Pseudaulacaspis pentagona</i>





CODLING moth larvae



CODLING moth adult



### Queensland fruit fly

*Bactrocera tryoni* (fly)

Queensland fruit fly (Qfly) is endemic to the Northern Territory, Queensland, parts of NSW and north east Victoria. Female fruit flies follow the scent of ripening fruit and lay their eggs. Female fruit flies can lay 500–800 eggs during their 6-month life. When the ovipositor is inserted in the fruit it results in a distinctive sting on the fruit surface. In warm weather eggs hatch in 2–4 days. Maggots take 6–8 days to develop. Infested fruit often drop to the

The larvae of codling moth damage fruit by tunnelling into the fruit.

ground. Mature maggots chew their way out of the fruit and burrow into the soil.

The larva becomes inactive in the soil and develops into an oval brown pupa from which the adult fly develops.

### Codling moth

*Cydia pomonella* (moth)

Codling moth (*Cydia pomonella*) is a serious pest of apples and other pome fruit and has the potential to cause severe crop losses. This is the most significant pest of apples in the Eastern States of Australia. The damage is caused by the larvae which tunnel

► CODLING moth infested Granny Smith apples.

into fruit. During winter, mature larvae enter diapause in rough silken cocoons in sheltered sites near where they emerged from the fruit.

Pupation and adult emergence occurs in spring. After mating, female moths lay eggs singly on leaves near developing fruit. The eggs take three to 15 days to hatch. The newly-emerged larvae move to the fruit and tunnel into the apple. The larva feeds on the flesh and seeds. Development takes 15–30 days inside the fruit.

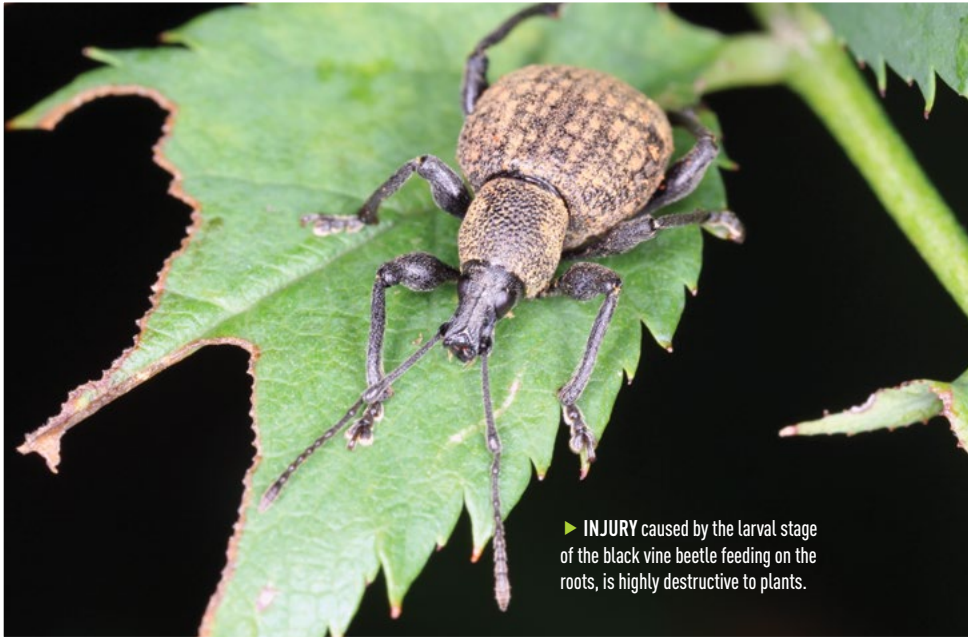


Pest and Disease  
Information Service  
(08) 9368 3080

► CITROPHILUS mealybug.



► PEAR leaf blister mite or *Eriophyes pyri* on pear leaf.



► INJURY caused by the larval stage of the black vine beetle feeding on the roots, is highly destructive to plants.

## Painted apple moth

### *Teia anaretooides* (moth)

Painted Apple Moth is native to south-eastern Australia (from southern Queensland to Victoria), S-E South Australia and Tasmania where it is a common pest on urban garden plants. It is generally relatively rare. PAM has a wide range of hosts in Australia but especially wattle (*Acacia*) species. Other common hosts are in the Myrtaceae, Fabaceae, Santalaceae and Solanaceae. Numerous introduced and cultivated plants are also attacked, such as pome fruit and a number of ornamental plants.

## Citrophilus mealybug

### *Pseudococcus calceolaria* (insect)

Citrophilus mealybug is an exotic pest to Western Australia. It is a serious pest of many horticultural industries that can downgrade fruit quality and affect fruit production. Citrophilus mealybug extract plant sap, reducing tree vigour and production, and secrete large amounts of honeydew — an exudate high in sugar that encourages development of sooty mould. Mealybugs are soft, oval, flat, distinctly segmented, and covered with a white, mealy wax that extends into spines (filaments) along the body margin and the posterior end.

These pests and diseases have the potential to cause serious crop losses to the pome industry in WA.

## Pear leaf blister mite

### *Epitrimerus pyri* (mite)

Pear rust mite was probably brought to the United States from Europe in the 19th century with trees or scion cuttings. It is a common pest throughout the Pacific Northwest and can cause serious fruit damage if untreated. While several predators feed on the pear rust mite, none controls it well enough to prevent commercial damage. As pear rust mite starts feeding within the developing fruit clusters, it can damage fruit very early in the season. The feeding causes light russeting that can cover the entire surface of the fruit. Often, however, only the calyx end of the fruit is russeted. The russet is most obvious on clear-skinned pears such as Bartlett, Anjou and Comice. Naturally russeted cultivars, such as Bosc, and red-skinned

varieties seem more tolerant of rust mite damage.

The pear rust mite also feeds on young leaves which, if heavily attacked, turn bronze in colour. Heavy feeding can cause defoliation and reduced shoot growth. Although pear rust mite may persist on both fruit and foliage throughout the season, it causes the most severe damage in the early spring.

## Oriental fruit moth

### *Cydia molesta* Busck (moth)

The oriental fruit moth has been a serious pest in canning peach orchards of the Goulburn Valley in Victoria since the early 1930s, and now also infests Nashi and some other pome fruit.

The larva or caterpillar of the moth bores into the tip growth of quinces, peaches, nectarines, apricots, plums, and, occasionally, into some other fruits such as apples and pears. Later generations bore into the fruit as well.

Four to six generations of oriental fruit moth occur each year in the Goulburn

Valley, with varying proportions of the last three generations entering the overwintering state to give rise to the emergence of adults in the following spring.

## White peach scale

### *Pseudaulacaspis pentagona* (scale)

White peach scale is believed to have originated in Japan or China, although one report places the point of origin in Italy where it was first described in 1886 by Targioni. This insect is an important economic pest of peach trees as well as woody ornamentals in the south-eastern United States. White peach scale is found not only in the United States, but is known throughout the world. The white peach scale inhabits up to 121 host plants in Florida and can cause major economic damage.

Thousands of dollars are spent each year on the control of this pest as infestation can become significant. The white peach scale will infest the bark, fruit and leaves of plants, thus making it a 'triple threat' to growers.

## Black vine beetle

### *Otiorhynchus sulcatus* (weevil)

The black vine beetle is a serious pest in nurseries and established landscape plantings. A native of Europe, this species was first reported in the US in 1910. This key pest is the most destructive and widely distributed species of root weevils in the genus *Otiorhynchus*. Injury caused by the larval stage feeding on the roots is highly destructive to plants.

## Oystershell scale

### *Lepidosaphes ulmi* (insect)

The oystershell scale, *Lepidosaphes ulmi*, is the most damaging scale insect present in Colorado. It develops on the bark of trunks and limbs of a wide range of commonly grown deciduous trees and shrubs. Developing oystershell scales feed by sucking the fluids of cells underlying the bark, often killing the cells at the feeding site. In high populations, oystershell scales may cause limb dieback and, during heavy outbreaks, plant death can occur from outbreaks of oystershell scale. 🍏

## FOUND A PEST OR DISEASE? ►

If you find any suspicious pests or diseases, or something you are unsure about, report it immediately to the Pest and Disease Information Service either by phone or through the MyPestGuide Reporter app on your phone. This is a free service and you will receive a timely response with identification information and management options.

Pest and Disease Information Service  
(08) 9368 3080 padis@dpird.wa.gov.au



## Report your observations!



MyPestGuide™ Reporter  
via online or app  
mypestguide.agric.wa.gov.au



Pest and Disease Information Service  
(08) 9368 3080  
padis@dpird.wa.gov.au

# Core strengths of WA apples

## Pomewest Quality Project update



► **GENERALLY**, overall compliance to the specifications has been very good this season Year to Date.



**BY CHRIS HALL**  
TOTAL QUALITY ASSURANCE SYSTEMS PTY LTD

**I**n 2019, Pomewest re-commenced funding their program of seasonal apple maturity testing for selected varieties of apples, being Gala, Granny Smith and Pink Lady®.

This program is leading the charge to identify core strengths for improving the eating experience and consumer satisfaction when purchasing WA grown apples. These services were again provided by Total Quality Assurance Systems Pty Ltd with regular reporting of results to Pomewest, which are passed onto the apple industry.

Wholesale fruit samples are collected from agents at Market City, Canning Vale and other intermediaries. Retail samples are purchased at various retail outlets under a selective mystery shopper program.

This retail sampling includes all of the major supermarket chains operating in WA as well as independent outlets.

This provides a good cross section of the fruit available for purchase by the public.

Opportunity was also provided to orchardists for pre-harvest testing of apple samples.

### So how is the industry stacking up to the standards set by Pomewest?

It is important to understand that in order to achieve an overall pass, all three components — sugar (Brix), pressure (Kgf) and starch (6-point scale) must meet the Pomewest specifications for each variety (as shown in Table 1).

This retail sampling includes all of the major supermarket chains.

Generally, overall compliance to the specifications has been very good this season Year to Date (to 30 June 2021) (see Table 2) with a noticeably increased number of tested fruit

this season, which meets these three specifications when compared to prior seasons, in particular the Gala varieties. So far in 2021, retail sampling numbers have been higher than in previous years due, in part, to last year's COVID-19 restrictions at retail and also as a result of changed program sampling intensity directions with more emphasis on testing of apples at the point of sale to consumers.

**TABLE 1. MINIMUM MATURITY STANDARDS.**

Standard	Gala	Granny Smith	Pink Lady®
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

**TABLE 2. SAMPLES MEETING ALL THREE POMEWEST STANDARDS.**

Performance	Season 2019			Season 2020			Season 2021		
	Samples	Pass	%	Samples	Pass	%	Samples	Pass	%
Gala varieties	151	116	76.8	160	125	78.1	97	84	86.5
Granny Smith	77	64	83.1	138	128	92.7	69	64	92.7
Pink Lady® varieties	93	89	95.6	156	154	98.7	83	82	98.7
<b>Total</b>	<b>321</b>	<b>269</b>	<b>83.8</b>	<b>454</b>	<b>407</b>	<b>89.6</b>	<b>249</b>	<b>230</b>	<b>92.3</b>

**Brix (TSS) testing: (measures immaturity)**

Brix	Season 2019			Season 2020			Season 2021		
	Samples	Pass	%	Samples	Pass	%	Samples	Pass	%
Gala varieties	151	146	94.8	160	125	78.1	97	94	96.9
Granny Smith	77	76	98.7	138	137	99.2	69	64	92.7
Pink Lady® varieties	93	92	98.9	156	156	100	83	83	100
<b>Total</b>	<b>321</b>	<b>31</b>	<b>97.8</b>	<b>454</b>	<b>418</b>	<b>92</b>	<b>249</b>	<b>241</b>	<b>96.8</b>

During the 2019 and 2020 seasons, low Brix results were encountered in Gala variety samples. These were mostly identified in samples which were being sold early in the season. Fewer low Brix results have been sighted so far in the 2021 season.

**Starch testing: (measures immaturity — early season)**

Starch	Season 2019			Season 2020			Season 2021		
	Samples	Pass	%	Samples	Pass	%	Samples	Pass	%
Gala varieties	91	82	90.1	91	88	96.7	91	82	90.1
Granny Smith	65	56	86.1	76	71	93.4	59	56	94.9
Pink Lady® varieties	51	49	96.1	81	81	100	64	63	93.9
<b>Total</b>	<b>207</b>	<b>187</b>	<b>90.3</b>	<b>248</b>	<b>240</b>	<b>96.8</b>	<b>214</b>	<b>201</b>	<b>93.9</b>

Apples are tested for starch content in the early weeks of each season to identify immature fruit being offered for sale. Samples of Gala and Granny Smith varieties with high starch values have been found at the start of each season.

**Pressure testing (measures over maturity/softness)**

Pressure	Season 2019			Season 2020			Season 2021		
	Samples	Pass	%	Samples	Pass	%	Samples	Pass	%
Gala varieties	151	127	84.1	160	114	71.2	97	94	96.9
Granny Smith	77	73	94.8	138	136	98.5	69	68	98.5
Pink Lady® varieties	93	92	98.9	156	155	99.3	83	83	100
<b>Total</b>	<b>321</b>	<b>292</b>	<b>90.9</b>	<b>454</b>	<b>405</b>	<b>89.2</b>	<b>249</b>	<b>245</b>	<b>98.4</b>

Softness became a noticeable problem in Gala varieties in 2019 and 2020 with low pressures being evident in many samples early in the season and continuing to be found throughout the year. This problem has not been so prevalent in samples tested so far in 2021 but may again become evident in stored fruit being offered for sale later in the year.

**Retail vs wholesale testing: (samples meeting all three Pomewest standards by industry sector)**

Point of sale	Season 2019			Season 2020			Season 2021		
	Samples	Pass	%	Samples	Pass	%	Samples	Pass	%
Wholesale	123	99	80.5	185	168	90.8	122	106	86.9
Retail	198	170	85.8	269	242	89.9	127	124	97.6
<b>Total</b>	<b>321</b>	<b>269</b>	<b>90.9</b>	<b>454</b>	<b>407</b>	<b>89.2</b>	<b>249</b>	<b>230</b>	<b>92.4</b>



► **STARCH testing for immature fruit.** If the pre-harvest samples have not met the minimum maturity standards repeat the test again in a few days until the tests show the optimum maturity.

### Fruit maturity

Fruit maturity is the single biggest challenge for the WA Apple industry in providing the best consumer purchasing and eating experience throughout the entire season.

Factors including — suitability for harvest; post-harvest treatments; and storage patterns can dramatically impact upon the internal quality of apples being sold in shops.

These effects can be identified in the types of testing which is being performed.

### Conclusions

Overall, there has not been a large difference in the totals when comparing retail and wholesale testing. The program has identified that the majority of non-compliant fruit found is due to immature Gala varieties at the beginning of each season. Soft (low pressure) fruit tend to be more prevalent in the second half of the year at both retail and wholesale. Pink Lady® (and variants) tend to be the most consistently compliant of the three varieties in the program throughout the year.



Measuring flesh firmness with a digital penetrometer.

### Core activities

The Pomewest Maturity Testing program for apples enables measuring the improvements which are being implemented in the WA Apple industry. Advances in orchard management, harvesting, post-harvest handling and treatment methods are bringing about improvements to the condition and eating qualities of apples being sold to consumers.

Meeting the required maturity standards is essential for maximising consumer satisfaction with buying apples in stores. Attention to cool chain management, storage duration and volumes are also critical to maintaining the best possible outturns for consumers.

### MORE INFORMATION ►

The Pomewest Maturity Testing program for apples is funded from industry funds collected under the Agricultural Produce Commission working in partnership with industry stakeholders.

Pre-harvest testing which is fully subsidised by Pomewest is available to orchardists who wish to determine the acceptability of their fruit prior to picking. Pomewest will continue the Apple Maturity Testing Program to secure valuable feedback about the performance of apples, which are being offered for sale in WA.

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