





www.polygro.com.au







Polygro offers growers a turnkey solution for all your Polytunnel and Netting requirements



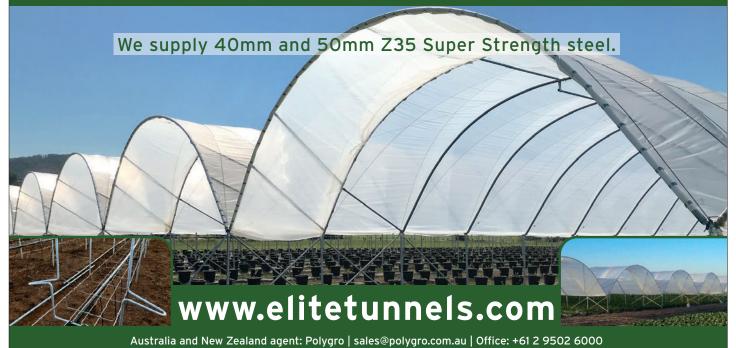
Technical Sales Manager, Nationwide: James Downey | jdowney@polygro.com.au | Mobile: +61 400 893 250 | Office: +61 2 9502 6000

### PARTNERS IN CROP PROTECTION



Growing Solutions Through Experience

Manufacturers & suppliers of field-scale multi-span polytunnels, substrate gutter growing systems and ancillaries.



### contents

#### FRONT COVER

Simon Dornauf, General Manager of Hillwood Berries in northeast Tasmania, reveals plans for the business to expand to Queensland in our profile on page 14.

Photo Melissa Kate Photography.





#### ISSN 2209-3567

#### **DISCLAIMER**

Soilless Australia is published by Protected Cropping Australia Ltd ABN 40 153 372 635

All editorial matter and opinions expressed in this newsletter are those of the author. The PCA does not accept or assume liability or responsibility for any loss or damage resulting from the correctness of such information. The publishing of advertisements does not imply the endorsement of those products or services. All ads must comply with the Trade Practices Act and state regulations.

Any correspondence concerning the magazine should be sent direct to the editor: editor@protectedcropping.net.au

#### **GROWER PROFILE**

Simon Dornauf	, Hillwood Berrie	s, Tasmania1

#### IRRIGATION RESEARCH

There are many benefits to closed irrigation	
recycling in hydroponics	. 18

### **HYDROPONICS**

22
46

#### **ON FARM PROFILE**

Green Camel is showing the way for the future	
of organic farming	26

#### **REGULAR FEATURES**

Welcome	
Board members	!
From the PCA Chair	6
News	8
Calendar	13
Nitty Gritty with Rick Donnan	46
Book review	4
Pest & disease updates	48
Movers & shakers	5
Membership subscriptions	52
Last word	54
Advertisers' index	54

### IRRIGATION SYSTEM CLEANING THE EASY, EFFECTIVE & SAFE WAY FOR YOUR CROPS



**AQUAMAX™** IS AN EASY TO USE, SAFE, NON-TOXIC, NON-CORROSIVE, COMPATIBLE LIQUID THAT....

### **NEW TECHNOLOGY IN IRRIGATION LINE CLEANING, WATER & SOIL CONDITIONING**

- Removes Biofilm (slime) in irrigation system
   lines, nozzles, filters, pumps, lagoons.
- Prevents mineral build-up of iron, calcium, magnesium, sodium.
- Water is enriched with additional dissolved oxygen & soil /mediums aerated.
- Irrigated water distributes more evenly and laterally within the soil /medium profile.
- Proven to increase WUE and yields.





Buy 200L of Aquamax™ & get a **Complimentary**, 3 night Holiday valued over \$900.

\*conditions & taxes (\$33/night) do apply

You can see all details at http://advancednutrients.com.au/holiday

Visit – www.aquamax.farm or call us - 1800 244 009













### Join us in Coffs Harbour for the 2022 PCA Conference

28 - 31 March 2022 Pacific Bay Resort, NSW



**HM.CLAUSE Pacific - T:** 03 8850 5400

E: pacificenquiries@hmclause.com W: www.hmclause.com



### **Board 2022**



Matthew Plunkett
Chair
Ph 0434 147 988
matthew.plunkett@protectedcropping.net.au



Tony Bundock
Deputy Chair
Ph 0409 007 610
tony.bundock@protectedcropping.net.au



Emily Rigby
Medicinal Cannabis Researcher
Ph 0400 008 161
rigby.research@gmail.com



Marcus van Heijst Allied Trade Ph 0415 463 182 marcus.van.heijst@protectedcropping.net.au



Shané Steffen
Agronomist
Ph 0466 976 399
shane.steffen@protectedcropping.net.au



Andrew Potter
Vegetables
Ph 0408 908 030
andrew.potter@protectedcropping.net.au



Michelle Mak
Agricultural Scientist and
University Lecturer
Ph (02) 4570 1376
michelle.mak@protectedcropping.net.au



Neil Miles
Agronomy, Farm Support,
Business Development
Ph 0429 599 977
Neil.miles@protectedcropping.net.au



**Bahram Fayaz Agronomist**Ph 0437 530 726
bahram.fayaz@hmclause.com

### PCA Administration Greg Fraser CEO

Ph 0419 505 315 greg.fraser@protectedcropping.net.au

### **PCA** Office

Ph (03) 8560 4391 admin@protectedcropping.net.au

### welcome

The much-awaited PCA 2022 Conference is finally going ahead this month against the lush green backdrop of Coffs Harbour on the NSW north coast. The conference, which was postponed last year, has an action-packed program. With so many excellent speakers and intriguing topics on the agenda for the concurrent sessions, I am having trouble deciding which presentations to attend. See more about the conference and meet some of the sponsors and exhibitors in our feature (turn to page 33).

#### **Farm Tours**

One of the highlights for many conference goers is the on-farm tour program (there's another decision – berries or vegies!). With COVID-19 restrictions gradually lifting across the country, *Soilless Australia* has been able to do some on-farm tours over summer and in this issue we visit two protected cropping businesses.

I made the journey across the top of Tassie from my home in the north-west to catch up with a leading Tasmanian berry grower, Simon Dornauf of Hillwood Berries. His story and that of his growing family business, which is expanding into Queensland, starts on page 14.

When I arrived at the farm it was buzzing with pickers hard at work and boxes of fresh berries being loaded up. Simon explained that Hillwood is in a very strong position when it comes to labour as they employ their own workers directly through the seasonal worker program (now PALM).

The farm also runs a pick-your-own berry enterprise. One of the surprise benefits of this side of the business was how it linked Hillwood Berries into the local and wider community and particularly to schools and students. Simon explained that it has proved to be a great way to introduce kids to where food comes from.

### **Organic options**

Toni Slater also hit the road, heading to Cobbitty south west of Sydney to find out more about Green Camel, a leading organic farm. She met up with Agronomy Manager, Andrew McIlwain, who showed her around accompanied by farm dog, Marley.

The farm combines growing fish with growing vegies and the two work very well together. So too does the on-farm composting, which uses all the farm's organic waste including rejected vegies and fish waste.

Oh, if you, like me, wondered about the farm's business name, we have the answer (turn to page 28).



One of the popular characters at Green Camel is farm dog, Marley.

I am looking forward to catching up at the end of this month at the PCA 2022 Conference in Coffs Harbour.

#### Jennifer Stackhouse, Editor

Phone: 0488 047 011 • Email: editor@protectedcropping.net.au

### Chair's REPORT

BY MATTHEW PLUNKETT

Although the year seems to have just started, we are moving into autumn already. I hope everyone had a chance to relax and take a well-earned break over the summer period as busy times certainly lie ahead.

Not everyone had a good summer. Many members are still recovering from a series of natural disasters that occurred around the country as well as managing the ongoing challenges with the pandemic. I hope recovery is progressing and some of the labour and supply chain issues that have dogged us will ease in 2022.

### **Future plans**

PCA has an exciting program for members this year starting with our conference in late March, which is nearly upon us. It's not too late to register so please check out the program at pcaconference.net.au/registration and also see our preview in this issue (starting on page 33). Set aside some time to get away to beautiful (and family friendly) Coffs Harbour to reconnect with friends and colleagues. If that's not possible, we will be reporting on the conference in future issues of Soilless Australia.

As well we will be celebrating and recognising our people and achievements with the PCA Awards, which will be presented at the Gala Dinner during the PCA Conference.



In addition plans are underway for a series of regional- and state-based tours and networking events this year. Stay tuned for more details and, if you would like to sponsor one of these events, please reach out for further information.

PCA is hoping to restart the popular regional farm tours during 2022.

Our friends at the Hydroponic Farmers Federation (July 12-14) and Berries Australia (July 25-28) are also running conferences this year, which we will be supporting and promoting. As well there is the AUSVEG-managed Hort Connections coming up in June. I did say busy times lay ahead!

The Membership and Marketing team is working on a plan for a more targeted approach to our publications (*Soilless Australia* and the monthly e-newsletter *Growing Undercover*) and webinar offerings. Part of this work is increasing our reach and more effectively utilising our social media platforms. Feedback is always welcome on how we can improve communication and member services.

The National Map of Protected Cropping project is progressing well and in the coming months PCA will finalise opportunities for members to contribute. PCA is also in discussion with the Australian Government, Hort Innovation and other industry partners about funding to implement the Australian Protected Cropping Strategy (2021-2030) that was announced late last year.

Targeted Research, Development and Extension (RD&E) will be crucial to ensure this strategy can address and prioritise investments that help our industry to grow sustainably.

Investing in our people and encouraging our Next Gen leaders is front and centre in ensuring the success of this strategy long term. Continued investments in monitoring the growth of our industry (its size, scope and value) together with adoption of research are also vital.

Of critical importance to is the profitability of our growers and businesses to enable investment in new markets, people and technologies that are fit for purpose. Promoting horticulture at every level as an exciting, rewarding and dynamic career pathway has never been more important.

PCA will continue to advocate, in partnership with other peak industry bodies and our partners, to assist with removing and/or limiting the impacts of the barriers that are holding our industry back.

In closing, thank you to all our members and corporate partners for your continued support. Please encourage other colleagues and friends to become part of the PCA family.

#### Matthew Plunkett, PCA Chair

Phone: 0434 147 988

matthew.plunkett@protectedcropping.net.au



### **E.E. MUIR & SONS FOR ALL YOUR HYDROPONIC NEEDS**



The Trusted Benchmark in Coir Substrates

Cocogreen® are the only coir substrate brand who have full ownership & control of our vertically integrated supply chain. Providing consistent high quality & an unmatched reliable service.

Our industry leading **Moisture**Control Technology® & Safeguard®
work in combination to provide the biggest returns for growers worldwide.





AUSTRALIAN OWNED • SINCE 1927











### Wholesale Pot Manufacturers & Nursery Suppliers





**AUSTRALIAN MADE POTS** 



**SUBSTRATES & MEDIA** JIFFY & TROPICOIR



PLANT NUTRITION, **HEALTH & PROTECTION** 

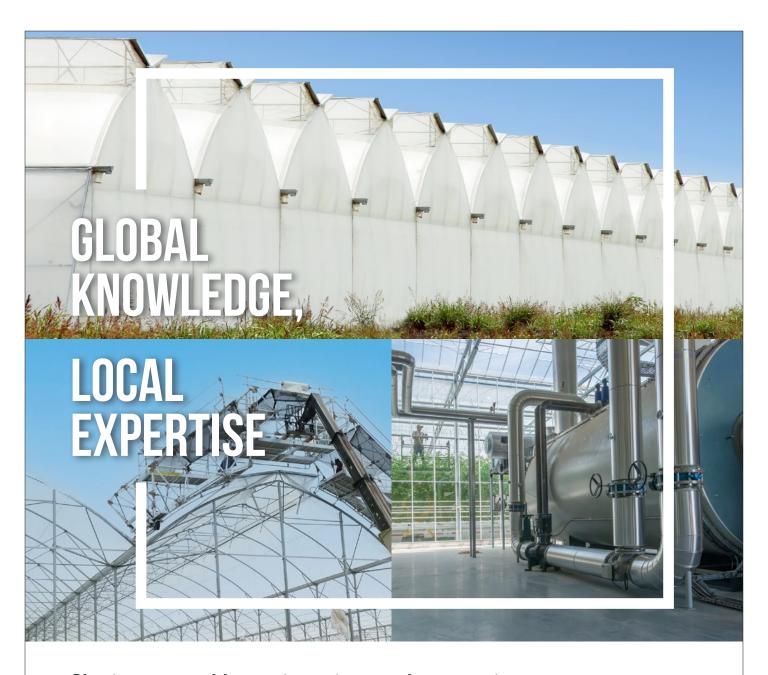




### **Trusted Partners in Horticulture**

Tel: 1300 695 098

www.gardencityplastics.com



### Sharing our world experience in greenhouse projects with Australian growers since 1995.

We design, manufacture and install fully equipped greenhouses for sustainable agriculture with optimal climate control and resource management, respecting people and their environment.



Film and glass greenhouse



Irrigation Systems



Heating system and climate control



Installation and Service

Our new project manager:

Scott Featherston

 $\boxtimes$  scott.featherston\_ext@richel-group.com

% (+61)438431421

@www.richel-group.com



### **Hort Connections growing together in 2022**

Australia's biggest horticultural conference and trade show returns to the Brisbane Convention and Exhibition Centre from June 6-8 with an action-packed program.

Hort Connections conference and trade show is returning to the Brisbane Convention and Exhibition Centre and following a successful COVID-safe delivery of the event in 2021. This year's theme, 'Growing Together', aims to highlight the importance of uniting and supporting each other in building a stronger more resilient food system. AUSVEG, in partnership with Protected Cropping Australia, welcomes all growers to ome along and celebrate the best of Australian horticulture.

With increased pressure on growers for improved water and nutrient use efficiencies, as well uncertainty brought on by a more unpredictable climate, more growers are moving towards protected cropping options. Hort Connections 2022 will be an opportunity to view the latest developments across a broad range of cropping systems.

This year's conference will build on

successful elements of previous years, with on-site improvements making navigation easier. Expect improved registration and check-in facilities, more information desks and a redesigned floor plan to enhance networking spaces and create better access for exhibitors.

Hort Connections provides many opportunities for growers to meet and discuss developments in their industries. These include:

- Welcome Reception on Monday, June 6 at 4:30pm.
- The Women in Horticulture event, including Diversity and Inclusion sessions to be held on Tuesday, June 7.
- A grower-networking event at the Trade Show Happy Hour on Tuesday, June 7.
- The Gala Dinner and National Awards for excellence on Wednesday, June 8.

### Early bird special

The horticulture industry has endured many challenges over the past couple of years. To recognise the tough times faced by growers, Hort Connections is offering growers the opportunity to purchase an all-access pass,

including entry to the Gala Dinner, for only \$500. Early bird specials for both delegates and exhibitors close on Monday, March 21.

### More information

The Hort Connections website has undergone a makeover, complete with interactive web pages and easier-to-access forms for exhibitor and delegate registration. Visit hortconnections.com.au Information is also available by sending an email to info@hortconnections.com.au or phone (03) 9882 0277.

Award nominations for the National Awards for Excellence are now open. You can visit hortconnections.com.au/hort-awards for further details. Nominations close Friday, April 15. This year, exhibitors and delegates are encouraged to use #HortCon22 when following along on social media.

Facebook: @hortconnectionsconference

Twitter: @HortCon\_

LinkedIn: @hortconnectionsconference

Instagram: @hortconnections

Highlights from previous years can be found on YouTube by searching 'Hort Connections'





### The propagation block for optimal steerability and crop control

- · Optimal steerability of water content and EC
- · Strong, controlled plant development
- · Higher yield and better fruit quality

www.grodan.com



AIS-Greenworks www.aisgreenworks.com.au



Part of the ROCKWOOL Group



### **Knowledge grows**

**YaraTera**<sup>™</sup> More crop from every drop

YaraTera FERTICARE is a complete range of crop-specific, water-soluble NPK fertilisers developed especially for fertigation systems. Available for a wide range of crops, including tomatoes, cucumbers, capsicums, lettuce and strawberries, these easy-tomix, free-flowing and dustfree formulations are ideal for concurrent application with YaraTera™ CALCINIT™ for an additional source of fast-acting, plant-available nitrogen and strength-building calcium. Contact Yara and find out how YaraTera FERTICARE can optimise the growth, marketable yield and shelf life of your crop with every drop.

















1800 684 266



au.sales@yara.com



@yara\_australia





### The next-gen Arize® Element L1000: Powerful, scalable, efficient:

Arize<sup>®</sup> Element L1000 new generation is the ideal solution for growers looking to reduce energy consumption and the carbon footprint of their operation, shaving costs and improving profitability without compromising on production outcomes. Offering a true 1:1 replacement for traditional 1000W HPS fixtures, with a PPF output of up to 2350 µmol/s, 0-10V dimming and a choice of eight optimised grow light spectrums, the next-generation Arize<sup>®</sup> Element L1000 is the go-to solution for commercial greenhouse growers who want to maximise productivity whilst optimising cost of ownership.

Discover the possibilities, visit Brinkman Australia - Booth # 40 at The PCA Conference March 28-31st



Contact us at Brinkman Australia 03 9587 2566 info@royalbrinkman.com.au www.royalbrinkman.com/australia

Find us on social media: ARIZE.GROW

- https://twitter.com/ArizeGrow
- f https://www.facebook.com/arize.grow
- in https://www.linkedin.com/showcase/arize.grow
- https://www.instagram.com/arize.grow/







gecurrent.com

### **SOILLESS CALENDAR 2022**

Check the event's website to monitor its current status.

### 2022 **United Nations International Year of Glass**

#### March 8-11

Foodex Japan,

Makuhari Messe, Tokyo, Japan; imexmanagement.com/shows/fooodexjapan-2022

#### March 15

evokeAG.

The Grounds of Alexandria, Sydney, New South Wales: evokeag.com/events/

#### March 28-31

2022 PCA Conference,

Pacific Bay Resort, Coffs Harbour, New South Wales; pcaconference.net.au

#### April 5-6

Sustaining the Nation, 2022 National Conference,

National Farmers Federation, the National Convention Centre, ACT; conlog.eventsair.com/nff2021/

#### April 5-7

Fruit Logistica,

Messe Berlin, Berlin, Germany; fruitlogistica.com/en/

#### May 20-22

United in Compassion's (UIC) fifth Australian Medicinal Cannabis Symposium,

Sunshine Coast, Queensland; unitedincompassion.com.au/2022symposium/

### June 1-2

**Digital Agrifood Summit 2022** online or at Charles Sturt University. Wagga Wagga, New South Wales;

foodagility.com/

#### June 6-8

Hort Connections.

Brisbane Convention Centre. Brisbane, Queensland; hortconnections.com.au



### July 12-14

Hydroponic Farmers Federation Conference (HFF), 'Hydroponics Tomorrow', Atura Dandenong, Victoria; hff.org.au

#### July 25-28

BerryQuest International in 2022, Sea World, Gold Coast, Queensland; berries.net.au

### September 7-9

Asia Fruit Logistica 2022, Hong Kong; asiafruitlogistica.com/en/



### Global specialist in horticulture

Growers want to provide the highest quality vegetables, flowers and plants and there is nothing we enjoy more than helping them to achieve

Royal Brinkman has specialized knowledge about cultivation and business processes and works worldwide on innovations for better and unique products.

We are your reliable partner with quality products and specialists who advise and install.



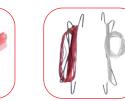
Brinkman Australia Pty Ltd 18-20 Jarrah Drive, Braeside - Victoria 319, T 03 9587 2566, info@royalbrinkman.com.au



































Booth # 40 at the upcoming PCA Conference





"We've gone from me growing it with loose knowledge to a team that has refined everything and is getting on top of managing the crops," Simon explains.

"The tunnels mean we sit at about 90 per cent first grade pack out with only 10 per cent waste for the whole season – rain events for example doesn't worry us."

Hillwood has also invested heavily in IPM.

"Our insect bill is now bigger than our chemical bill," says Simon.

As things are constantly changing and

growing at Hillwood, Simon also sees change in the berry industry.

"It is evolving – there are a lot of old school growers out there who have grown in the soil but they are starting to realise they've got to adapt and make the work more labour friendly – lifting fruit up off the ground to make it easier to harvest.

"The market keeps growing, it's a nice friendly, healthy, fresh product and that holds us in good stead. Strawberries have expanded, blackberries are growing – the future is still bright for berries".

### Tongan community

A few days after I visited Simon Dornauf, the underwater volcanic eruption and resulting tsunami hit Tonga.

Many of Hillwood's workers are from Tonga and Simon sent through this update saying most of his workers are "doing okay".

"There have been no casualties from any families of our workers but there has been damage to some workers' homes. We have two workers who are still yet to have contact with their families as they live on the outer islands where the communication is yet to be reinstated. This island has plenty of high ground so they believe they should be okay.

"We are looking into what form of support or fundraising that we will provide to the workers and how we do this perhaps with an event at the pick your own part of the business."





### **ULTRA VOLET (UV) STERILISATION** SYSTEMS GIVE GREAT RESULTS AND MANY UNITS AUTOMATICALLY ADJUST FLOW RATES DEPENDING ON THE CLARITY OF THE DRAIN WATER.



A Priva Vialux Ultra Violet sterilisation unit that allows sterilisation of collected drain water, which in turn is stored in a 'clean' tank before being recycled to the crop.

As a rough guide, using recycled water and nutrients will reduce an overall fertiliser bill by upwards of 30 per cent so certainly a consideration.

Before you start celebrating these financial savings too hard, bear in mind that this collected drain water may also contain pathogens, which if reapplied to the overall crop could easily re-infect healthy plants.

Some form of sterilisation is highly recommended. Ultra volet (UV) sterilisation systems give great results and many units automatically adjust flow rates depending on the clarity of the drain water. A cloudy water sample requires more exposure to UV radiation to achieve an acceptable sterilisation rate.

Once sterilised, the 'clean' nutrient-rich water is stored in a separate tank and blended back into the irrigation water. Investing in these systems has a financial consideration but is an investment in the business that serves you for a long period of time.

Tony Bundock is Deputy Chair of the PCA Board and Director of Genesis Horticultural Solutions. He is based in Victoria and can be reached on 0409 007 610.

He will be a speaker that the PCA 2022 Conferene with a paper titled 'The Beginner's Guide to Irrigation Scheduling & Basic Climate Control in Hydroponics'.

### Stoller Solutions will help your crops reach their full potential.











### When you are investing in your crop it's important to think about:

- Root development.
- Plant health throughout the growing cycle.
- Managing stress and stressful conditions.
- Maximising crop yield and return on investment.





Contact Stoller on FREECALL 1800 337 845 or info@stoller.com.au

### ...GREEN CAMEL IS SHAPING THE FUTURE OF ORGANIC FARMING.

aquaculture and the university provided the land. Green Camel still operates its self-sustaining, commercially viable production on the University of Sydney's site at Cobbitty in Sydney's south west.

### Leading the way

Green Camel's recirculating aquaculture system is conventional in many ways, but it is with the bio-filtration process and mineralisation strategy that the magic begins. This is where Green Camel is shaping the future of organic farming.

Nothing is lost in the system, there is never waste. But is zero waste really possible? The answer says Andrew is almost or as close to 100 per cent as you can possibly get. This is because waste is a valuable resource at Green Camel where the focus is on capturing and reintroducing standard waste back into the system, primarily through composting and soil improvement.

Everything has its place and purpose in an intricate cycle of life. Aquaculture water is filtered, re-oxygenated and re-circulated back

into the fish tanks while maintaining efficient growth rates and fish health. Concentrated fish waste is biologically treated, changing this ammonium-rich bi-product into nitrite and finally into nitrates suitable for supplementing soil nutrients for vegetable growing.

Fish mortality rates are low, hovering around 10 percent, which is significantly below the industry standard. Even dead fish are valued as a protein source for on-site composting. Leaf prunings and spent crops at the end of the harvest are also collected and



Wastewater is filtered and re-oxygenated before being re-circulated into the fish tanks.



for a regular focus on glasshouse labour both quality and quantity. Farm hands are guided by visual cues on signs around the glasshouses for correct techniques and workers will only stay in specific sheds to limit movement and potential spread of pest or disease outbreak. The produce is healthy, really healthy, and there is no soil borne disease, largely due to the high number of beneficial bacteria present in the irrigation, each irrigation is considered an inoculation. It's believed that the good bacteria ultimately outnumbers the bad ones and keep the soil healthy and the crops disease free. Even the produce 'seconds' are comparatively high quality.



Fresh tomato harvest.

#### Seed to harvest

Their own seedling nursery provides quality control from seed through to harvest. Tomatoes are seeded, grafted and hardened off on site to give plants the vigour needed to endure 42 weeks of intensive growth and harvest, ending in a 16m-long vine at season's end. Hybrid varieties are chosen for their reliability over time, form, size and transportability.

Organic production calls for the use of IPM on a range of pests in the glasshouses. Yellow sticky tape monitors their presence and predatory insects are released often as a preemptive strike to stay on top of outbreaks. Only approved contact pesticides are allowed so control is sometimes needed with the use of soaps, oils and beneficial fungi or bacteria.

Again, just like their aquaculture system, maintaining hygiene standards in the glasshouse and prevention is key to success.

When asked about the impact this new mega farm has on traditional organic farming, Andrew is philosophical, saying that large-scale organic production is inevitable and Green Camel has developed the system to supply high quality organic produce year round to major retailers.

With a sustainable, zero waste healthy approach to food production, it may well be the better choice.

SA



### What's in the name?

So what's with the name, Green Camel?

Agronomy Manager, Andrew McIlwain explains:

"Like a camel we use water wisely, stick our necks out to do things differently and realise a sustainable journey is fundamental."



### Premium Perlite and Premium Vermiculite Protected Cropping Substrates

Premium Substrate for Leafy Greens, Herbs, Vine Crops, Berries & Floriculture

Crop Specific Grades • Consistent Particle Sizing • Optimum Air Porosity Optimum Water & Nutrient Retention • Sterile, Inert and pH Neutral Does not Break Down • Economically Positive









Phone: (03) 9706 6049 Email: sales@exfoliators.com.au www.exfoliators.com.au BERRIES AUSTRALIA

### BerryQuest International 25-28 July 2022

Sea World Resort & Conference Centre Gold Coast, Queensland

Boatshed Bar & Grill BBQ

Welcome Reception





Queensland's stunning Gold Coast will welcome an influx of berry growers, associated businesses, and industry experts from Australia and abroad in July 2022 when the much-anticipated national conference for the Australian berry industry is held again for the first time in over 4 years.

BerryQuest International will run this year from 25 to 28 July at Sea World Resort and Conference Centre, with two days of speaker presentations and a trade exhibition, followed by a day of farm tours and plenty of other activities including networking and social functions.

### WHAT TO EXPECT - CONFERENCE PROGRAM at a glance

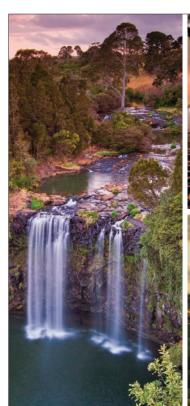
Plenary Sessions  Plenary Sessions  PM  PM  PM  PM		Plenary & Breakout Sessions	Plenary & Breakout Sessions	
AM AM AM Shark Bay Tour & Breakfast Plenary Sessions Plenary Sessions Plenary Sessions	Registration Opens	in Exhibition Hall	in Exhibition Hall	Farm Tours / Activities
AM AM AM AM Shark Bay Tour & Breakfast Farm Tours / Activities	PM	PM	PM	PM
MONDAY 25 TUESDAY 26 WEDNESDAY 27 THURSDAY 28		Conference Opening	Shark Bay Tour & Breakfast	<b>AM</b> Farm Tours / Activities
	MONDAY 25	TUESDAY 26	WEDNESDAY 27	THURSDAY 28



Sea World Plaza

Conference Dinner

FIND OUT MORE & REGISTER NOW AT berries.net.au/bqi2022











meetinnsw.com.au -



### Speaker highlights

This year's PCA conference has an exciting lineup of speakers covering a broad range of industry topics. The conference is being held at the Pacific Bay Resort, Coffs Harbour, New South Wales from March 28–31. Lectures and sessions are run over two days from March 29–30.

### **Tristan Kitchener**

Keynote speaker

Future state of retailing and opportunities for growers

Tristan Kitchener has previously held senior positions with Sainsbury's (UK) and Coles Supermarkets where he was Group Merchandise

Manager, Fresh Produce. Now a management consultant providing advice and support along the grocery value chain, Tristan assists businesses understand the implications of the changing retail and consumer environment and helps identify solutions to key business challenges. He is a strong advocate for supply chain members collaborating more closely to better understand and meet the needs of the consumer. He also manages and operates the Harmonised Australian Retailer Produce Scheme (HARPS) on behalf of the major grocery retailers in Australia (ALDI, Coles, Costco, Harris Farms, Metcash (IGA) and Woolworths) and Hello Fresh and McDonalds. HARPS is a retailer-led scheme designed to assist with compliance to food safety, legal and trade requirements for suppliers of fresh produce.



#### Julian Cribb AM

**De-toxing our Poisoned Planet** 

Julian Cribb AM is an Australian author and science communicator. He is principal of Julian Cribb & Associates, who provide international consultancy in the communication of science, agriculture, food, mining, energy and the environment.

mining, energy and the environment.

He is a Fellow of the UK Royal Society for the Arts, the Australian Academy of Technology and Engineering (ATSE) and the Australian National University Emeritus Faculty. He is a Member of the Order of Australia (AM).















**COCOPEAT GROW BAGS, BULK BALES, COMPRESSED BLOCKS, LOOSE COIR, WEED MATS & SPACERS** 



### **ECOMIX AUSTRALIA**

P: 0402 648 607, 03 9437 9497 e: sales@ecomix.com.com.au

www.ecomix.com.au

ecomix newzealand • ecomix america • ecomix europe • ecomix china





### New high grade, low sodium fertilisers for healthier crops



### **Haifa Cal** Prime

Ca	23.5%	
N	17.0%	
N-NH4	0.3%	



Haifa Multi-K Reci

N	13.0%
K	38.8%



**Haifa SOP** Prime

S	18.0%
K	44.2%

### Unique tools to help you grow better



### **NutriNet**<sup>Th</sup>

- · Enjoy a rich and updated online database about the crops you grow
- Incorporates local climate data, soil analysis, irrigation water quality and more
- Design customised Nutrigation<sup>™</sup> programs



### FoliMatcl

YOUR PERSONAL ASSISTANT FOR FOLIAR SPRAYING

In three easy steps, FoliMatch™ generates accurate fertiliser recommendations based on local conditions and specific crop growth stages .... and you can share it!



**Haifa Australia** (03) 9583 4691 australia@haifa-group.com www.haifa-group.com

See you at PCA Conference Coffs Harbour March 28-31 – booths 13 & 16

### Katja Hogendoorn

'Does opening nets above rows improve bee pollination and fruit quality?'

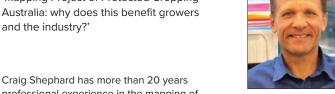
Dr Katja Hogendoorn is a senior researcher of bees and crop pollination at the University of Adelaide. Her research focuses on bees as pollinators of crops and native plants, and



investigating the management decisions that improve bee health, biodiversity and crop pollination services, outside and in protected cropping. This involves improving the understanding of the factors that influence bee foraging and nesting behaviour so their natural requirements can be better met. In addition, she translates this information for beekeepers, growers of pollination-dependent crops and restoration and land care managers, to achieve better outcomes for crop pollination and biodiversity.

### Craig Shephard

'Mapping Project of Protected Cropping Australia: why does this benefit growers and the industry?'

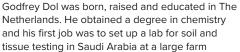


professional experience in the mapping of

landscape attributes – particularly land cover and land use. Craig holds a Bachelor of Science majoring in Environmental Science and Geography from Macquarie University, and is particularly focused on the application of web-based Geographic Information System (GIS) technology. Location is the common framework for integrating data to inform decision-making at multiple scales.

### **Godfrey Dol**

'Will Artificial Intelligence take over from growers?'





that included glasshouses. After solving the farm's nutritional problems, he was offered a job as a grower. Some 38 years later he has grown tomatoes in nine different countries in very high-tech glasshouses in extreme climates. In 2013 Godfrey was recognised for his work with the Costa Group by being awarded Farmer of the Year. In 2020 he advised the winning team of the Artificial Intelligence contest organised by the Wageningen University. In 2021 he published How to Grow in a ModulAir Glasshouse.

#### **Neena Mitter**

'Next generation RNA based bio pesticides'

Prof. Neena Mitter is the Director of the Centre for Horticultural Science, Queensland Alliance of Agriculture and Food Innovation, the University of Queensland. She is also the Director of the Australian Research Council Industrial



Transformation Research Hub for Sustainable Crop protection. She is globally renowned for her leadership of innovative platforms namely 'Environmentally sustainable BioClay platform for crop protection' and 'Clonal propagation of avocado using plant stem cells'. These are groundbreaking platform technologies influencing agricultural production, environmental sustainability and socio-economic dynamics of farming community.







### Smart Solutions for Protected Cropping

w: tapexgroup.com.au/tapex-horticulture-group | p: +61 2 9502 6000

- Tapex Horticulture Group provides innovative product solutions to the Australasian horticulture industry through its trading companies of Polygro (Australia) and GreenLife Structures (GLS)
- Trusted global brand partners for over 20 years in horticulture sector
- Australian engineered and manufactured, greenhouse and netting structures
- Australian owned and operated company





- National supplier
- Extensive product range
- Non-chemical protective cropping solutions

e: sales@polygro.com.au w: polygro.com.au p: +61 2 9502 6000





Greenhouses - Shadehouses - Protective Netting

- Premium greenhouse and netting structures
- Australian-engineered design and certified
- · Professional skilled workforce

e: sales@greenlifestructures.com.au w: greenlifestructures.com.au p: + 61 2 6686 7321



### **Register now**

Are you a grower or levy payer? PCA has the ability to financially subsidise up to half the cost of a full registration for growers or levy payers attending the 2022 national conference at Coffs Harbour (March 28-31, 2022).

This year there are two types of registration on offer: Face-to-face full registration; Face-to-face full registration or Face-to-face single day registration. To apply for a discounted rate as a grower or levy payer, follow the prompts on the online registration page at www.pcaconference.net.au/registration.

### How to register

To register visit www.pcaconference.com.au and follow the prompts.

For details of farm tours, which should be booked at registration, see

www.pcaconference.net.au/farm-tours

### **FACE-TO-FACE FULL REGISTRATION**

- · Access to all sessions.
- A ticket to the Welcome Function and Conference Dinner.
- All morning/afternoon teas and lunches during the program.
- Certificate of attendance post conference.
- Registration fee covers and includes all Australian Government taxes.

From **\$750** 

### **FACE-TO-FACE SINGLE DAY REGISTRATION**

- · Access to all sessions on your nominated day of attendance.
- Catering during the breaks on your nominated day of attendance.
- Certificate of attendance post conference.
- Registration fee covers and includes all Australian Government taxes.

From **\$570** 



Coffs Harbour offers a tranquil coastal retreat. Photo Adobe Stock Photos



### WHAT'S THE ADVANTAGE?

As growers like you, we're always asking – how can we best anticipate the challenges of unpredictable climates, complex and demanding markets and a rapidly evolving industry?

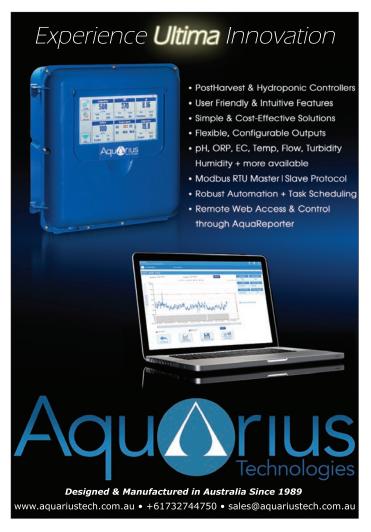
Haygrove EZvent has been specifically engineered with tomorrow in mind. Strength, ease of management and a superior agronomic environment allow growers to reduce labour requirements, extend cropping seasons and optimise yield and quality.

EZvent tunnels provide mechanised venting with field-scale simplicity to give exceptional return on investment.

WWW.HAYGROVE.COM









Trials have yielded impressive results in Australia.

Well adapted to handling extreme conditions and harsh climates, it produces high yields of quality truss tomatoes.

### **Key features**

- High quality and high yield
- Strong well balanced plant
- Sets well under hot and cool conditions
- Improved mildew resistance

This variety has a strong reputation for its balanced plant habit, improved flavour and high quality fruit.

It consistently performs under the tough and variable Australian conditions.

### **Key features**

- Market leading variety
- · Good presentation and shelf life
- Open and balanced crop
- Exceptional setting ability

For more information contact your technical representative

### Rijk Zwaan Australia Pty Ltd

PO Box 284 Daylesford, Victoria 3460 | Australia T (03) 5348 9000 | www.rijkzwaan.com.au



### **MADEC Labour Hire**

MADEC offers Labour Hire services in industries such as horticulture, wineries, viticulture, labouring, retail, food and meat processing, hospitality, construction, and tourism. We take care of administration, recruitment, selection, payment of wages including superannuation, work cover, penalty rates, award allowances, payroll tax and GST, as well as providing personal protective equipment.

MADEC is also an approved employer under The Seasonal Worker Programme (SWP) that provides employers in agriculture and horticulture access to reliable, returning workers from Pacific Island countries and Timor-Leste. As an approved employer of the SWP, MADEC can source, employ and manage people to work on your farm under the program, We comply with all the requirements of being an approved employer including providing all pastoral care.

https://www.madec.edu.au/Labour-Hire/





## Stoller Solutions will help your crops reach their full potential





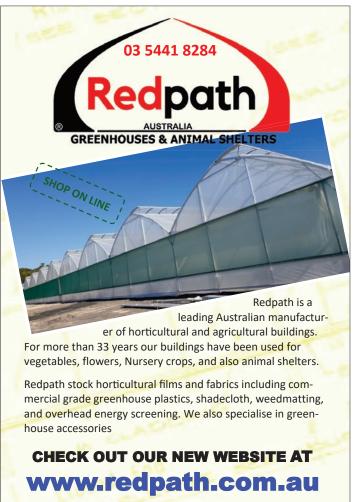




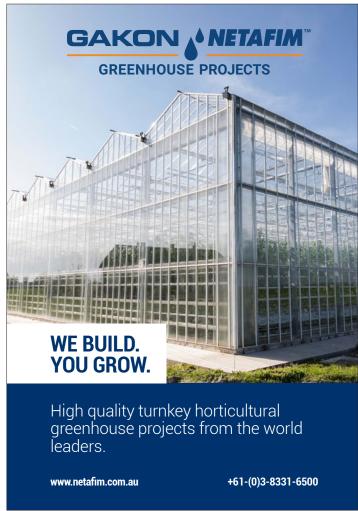
Ask us how today.

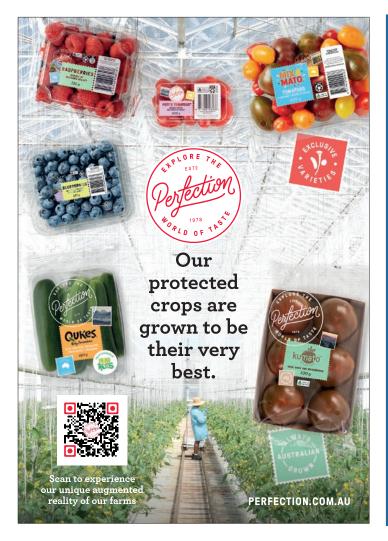
Contact Stoller on FREECALL 1800 337 845 or info@stoller.com.au











Looking forward to seeing you at the PCA 2022 conference with thanks to all our sponsors!



www.protectedcropping.net.au

### **PARTNERS**

### PREMIUM CONFERENCE PARTNERS











### **CONFERENCE PARTNERS**





















CONFERENCE DINNER PARTNER



WELCOME RECEPTION PARTNER



COFFEE CART PARTNERS





FARM TOURS PARTNER



DELEGATE GIFT PARTNER

WIFI PARTNER STUDENT SESSION PARTNERS

STRATEGIC SPONSOR















Commercial producers of biological control agents for Integrated Pest Management (IPM) programs.

#### **KEY PESTS** BIOCONTROL SOLUTION



TWO SPOTTED MITE



**PERSIMILIS** 



CALIFORNICUS



**OCCIDENTALIS** 



WHITEFLY



LAILAE



**NESIDIOCORIS** 



**ENCARSIA** 



**ERETMOCERUS** 



DIAMONDBACK MOTH



**DIADEGMA** 



**FUNGUS GNAT / THRIPS** 







HYPOASPIS 'A



**THRIPS** 



LAILAE



**CUCUMERIS** 



ORIUS



**THRIPOBIUS** 



**RED SCALE** 



**APHYTIS** 



LINDORUS



**APHIDS** 



APHIDIUS 'E'



**APHELINUS** 



APHIDIUS 'C'



**TRANSVERSALIS** 



Phone: 08 8584 6977 | Email: info@biologicalservices.com.au | www.biologicalservices.com.au

### pests & diseases update

### Do you subscribe to Infopest?

Infopest is the number one Agvet chemical database in Australia to feature all chemicals registered and approved by the Australian Pesticides and Veterinary Medicines Authority (APVMA). It is easy to navigate and available simply by registering. Infopest will become your most valued tool as a grower. It is owned and managed by Growcom.

To subscribe for just \$55 a year, and receive a regular newsletter, visit infopest.com.au



### APPLES UNDER COVER

Organic growers in the Midwest of the US are being advised to grow apples in plastic-covered high tunnels (unheated greenhouses) to reduce diseases encouraged by spring and summer rains.

Growers Two Onion Farm at Belmont recently received a grant from the US Department of Agriculture-Sustainable Agriculture Research and Education Farmer-Rancher to experiment with dwarf apples under cover. Currently farmer, Chris McGuire grows organic apples and other fruit outdoors and keeps diseases in check by growing disease resistant varieties, pruning and approved organic sprays.

He said the trial showed that to recoup the cost of constructing the tunnels it would be necessary to plant high-yielding, heat-tolerant varieties.

### **Funding for AUSPestCheck**

Minister for Agriculture and Northern Australia David Littleproud has announced government funding of \$601,500 for the AUSPestCheck plant pest surveillance virtual coordination centre. AUSPestCheck was initially developed to collect and display national plant pest surveillance data and now being expanded for national animal disease surveillance. It is being developed by Plant Health Australia.

Minister Littleproud said the investment would secure the centre's future and was just one example of the Commonwealth's commitment to our national biosecurity system.

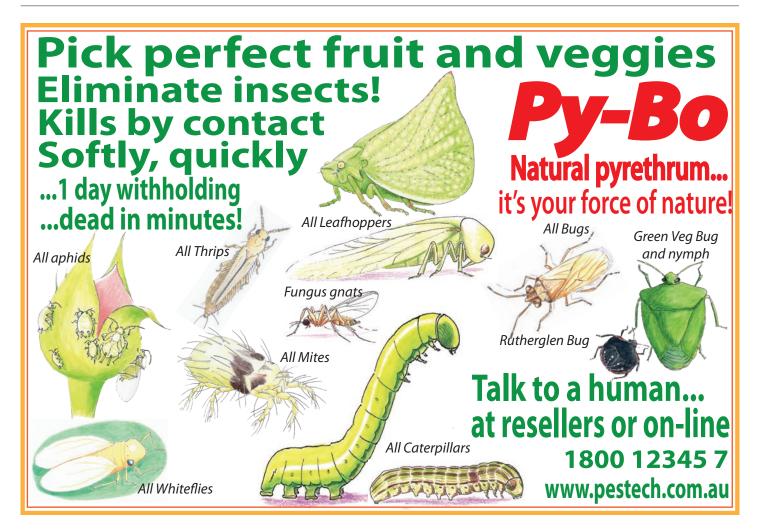
"This funding guarantees enhancements to the database to meet growing national and international demand for plant pest and animal disease surveillance," Minister Littleproud said. "Protecting Australian agriculture and our environment against pests and diseases is a shared responsibility that requires the collaboration of industry, research and government.

"Our farming production, set for a record gross forecast of \$78 billion, depends on keeping plant pests and animal diseases in check.

"This cloud database provides information on pest and diseases numbers, and location and spread Australia wide.

"It alerts when target pests and diseases increase above a threshold or move into a new area. Since its initial trial, the database has collated over 3 million surveillance data records.

"This innovative tool has been collating data from the National Plant Health Surveillance Program, the National Bee Pest Surveillance Program and other sources."



### Ethical AI attracts research funding

Wageningen University & Research (WUR) in The Netherlands has announced funding from the Dutch Research Council to examine Artificial Intelligence (AI) for sustainable food systems.

The project will be lead by Dr Vincent Blok, who is Associate Professor in Philosophy Technology, and Simone van der Burg, Senior Researcher in Ethics and Responsible Research and Innovation at Wageningen Economic Research.

Simone outlines says Al robots will take over jobs of humans and are expected to profoundly change the labour market in the agri-food sectors. Her concerns lie around identifying threats for human labourers as well as opportunities robots offer to create better and more meaningful work .

"A WEEDING ROBOT CAN
ACCIDENTALLY TAKE OUT THE
CROPS INSTEAD OF THE WEEDS,
THUS DESTROYING THE HARVEST,"
SHE EXPLAINS. "WHO CAN BE HELD
RESPONSIBLE FOR THAT AND WHO
MUST PAY FOR THE DAMAGE?

"An algorithm is trained to seek the best investments for a large agri company, which leads to enhanced profits. However, the algorithm eventually commits fraud. The definition of 'fraud' presupposes a human criminal.

"Can we blame the algorithm?" she asks.

Other issues revolve around data protection and developing ethical guidelines. In a media release, WUR notes the research team will design a methodology including tools, ethical and legal guidelines and engagement strategies around the use of AI in the agri-food sector and conduct six case studies where ELSA (ethical, legal, societal analysis) aspects will be integrated in AI design.





Bayer headquarters. Photo Adobe Stock Photos

### Bayer research grant winners announced

Bayer has announced 21 winners of its highly sought research program titled Grants4Ag. Among the winners are two Australian researchers.

Phil Brewer from the University of Adelaide hopes to unlock the secrets of plant hormones and how they influence plant growth and development to help farmers achieve more sustainable crop growth and better resilience against climate change.

One aspect of his research is the effect of nitrogen fertiliser on branching responses versus crop production specifically in grains.

"Grants4Ag will be important to help us unlock new ways of reducing nitrogen branching responses so that more nitrogen goes into grains," said Phiil in his successful application. "Thus, we may achieve the same yield with much less fertiliser and thus reduce environmental and economic costs."

Prof. Michelle Dunstone from Monash University in Melbourne is studying biopesticides with her successful grant. Biopesticides are gaining increasing attention as sustainable alternatives to traditional pesticides. Prof. Dunstone is particularly interested in pore-forming proteins, which she describes as 'hole-punching proteins'.

"These are water-soluble monomers that, when they find the right target cell, come together in a ring-shape and punch into the cell surface. A bit like a molecular hole-puncher" she explains. "This hole can act to either kill the cell or allow toxic agents to enter the cell. These hole-punching proteins are used by our immune system to defend against bacteria and by bacteria to cause disease. Bacteria also use these proteins to kill insect larvae that digest bacteria".

### FOR SALE OR LEASE HYDROPONIC FARM

Successfully operating for more than 20 years, our hydroponic farm is for sale or lease. here in the coffs harbour area, in an enviably beautiful setting, we grow lettuce and herb varieties, the majority under greenhouse.

All chemicals used are organically approved. a new computerised fertigation system joins one installed.

Included assets are approx. \$400,000. despite covid, continuous production is grossing approx. \$200kpa. significant expansion plans are available.

Please call 0414 389 905 or email rhodc@bigpond.net.au for confidential discussion.

# Last word with Greg Fraser

Greg Fraser became the CEO of Protected Cropping Australia in October 2021 while much of the country was still in lockdown. With borders reopened he is looking forward to meeting as many PCA members as he can at the upcoming 2022 PCA Conference at Coffs Harbour in NSW. Here he has news of some special opportunities for growers in the form of workshops and free access to the conference Trade Show.

Have you booked registered for our upcoming conference in Coffs Harbour or are you still juggling your day-to-day work and finding that you feel you are too busy to take time off? The PCA Board is well aware of what might be going through the minds of our growers and has developed some special training passes to help fit this event into a grower's busy schedule.

On the Monday afternoon of conference week, March 28, we are offering 40 Grower Training Passes, giving access to attendance at two special training workshops as well as the Welcome function on Monday night. Registration is required. It's a first in, best-dressed opportunity, so don't delay.

The offer combines an opportunity to gain new knowledge with a social event to catch up with colleagues in a relaxed environment. You'll also be able to inspect the Trade Show component of the conference that night.

The Training Workshop for Growers kicks off at 1pm with a two-hour introduction

to 'Irrigation Fundamentals in Protected Cropping' delivered by Tony Bundock and Levi Nupponen, funded by the Vegetable Levy and funds from the Australian Government

After a half hour afternoon tea break, a second workshop starts at 3.30pm. Stuart Doyle and Melinda Simpson from the NSW Department of Primary Industries will present an 'Integrated Pest Management' workshop, which runs through until 5pm. The Welcome function runs from 6pm.

### Trade show access only

We also recognise that some of our members may just want to visit the Trade Show and not attend either the conference lectures or social events, so we are also offering 100 Grower Exhibition Passes for the Trade Show, which is being staged in the exhibition area at the Pacific Bay Resort. The Grower Exhibition Passes are available for either Tuesday March 29 or Wednesday March 30. To assist with



Greg Fraser became the CEO of Protected Cropping Australia in October 2021

catering, you will need to register for these passes.

There is no charge for either the workshop activities on Monday or the Grower Exhibition Passes for Tuesday or Wednesday but we will asked those participating to complete a survey after the event.

This will be my first PCA conference so I am very much looking forward to meeting our PCA members face to face whether it is over a drink at the Welcome function or over a cup of coffee in the trade show so I hope that you will either register for the PCA conference or take advantage of one of our Grower Passes. If you are interested in these opportunities – and the number of passes available is limited – then register as soon as you can on the 2022 PCA Conference website at www.pcaconference.com.au.

THIS WILL BE MY FIRST PCA CONFERENCE SO I AM VERY MUCH LOOKING FORWARD TO MEETING OUR PCA MEMBERS FACE TO FACE WHETHER IT IS OVER A DRINK AT THE WELCOME FUNCTION OR OVER A CUP OF COFFEE IN THE TRADE SHOW

### **ADVERTISERS' INDEX**

ADVERTISER	PAGE
Advanced Nutrients	3
AIS Greenworks	10, 17
Apex Greenhouses	56
Aquarius Technologies	40
Berries Australia	31
Biological Services	49
Bugs for Bugs	55
Canna	40
EE Muir	6
Elite Tunnels/Polygro	2
Enza Zaden	36
Exfoliator	29
Fluence	21

Galuku37	
Garden City Plastics7	
Haifa35	
Haygrove Tunnels38	
HM Clause Pacific4	
Madec Australia42	
Netafim44	
NSW Tourism32	
Organic Crop Protectants 42	
Perfection Fresh Australia 44	
Pest Tech50	
Powerplants27	
Prodoz34	

Protected Cropping Australia44, 45, 52
Australia44, 45, 52
Redpath Greenhouses42
Richel Group9
Rijk Zwaan40
Royal Brinkman Australia 12, 13
Signify Australia40
Stoller25, 42
Tapex37
Western Sydney University 44
Yara Crop Nutrition11

Soilless Australia

**Editor – Jennifer Stackhouse** editor@protectedcropping.net.au 0488 047 011

Advertising and PCA Membership

– Michelle Harris-Spencer
business@protectedcropping.net.au
(03) 8560 4391

Design – Richard Deverell, Dev Design & Creative www.devdesign.com.au

PCA administration admin@protectedcropping.net.au (03) 8560 4391

# Producing medical cannabis?

You'll need the help of natural enemies to tackle pests

**Bugs for Bugs** has you covered with biocontrol agents, sticky traps and expert IPM advice

"At Green Farmers we deploy over 1.2 million beneficial insects and mites each week. They work hard to keep the crop clean and allow us to produce the highest quality medicinal cannabis without harmful pesticides. We've worked with Bugs for Bugs from the outset and the results are excellent."



Wesley Coleman-Bayley Production Manager, Green Farmers

Contact me, your Cannabis IPM Specialist



**Angelica Cameron** 

angelica@bugsforbugs.com.au 0466 112 343

www.bugsforbugs.com.au

























### LOCAL KNOWLEDGE

We know Australia! Local knowledge plays a vital role in getting you the right design for your region.



### **HIGHER YIELDS**

Our high quality designs and construction methods result in increased crop consistency and yields.



### **INNOVATIVE DESIGN**

Our team of expert in-house CAD designers continually produce innovative custom designs & methods.



### **FUTURE PROOF**

Our Future Proof designs, constructed in either glass or plastic, enable you to expand or modify easily.









CALL US ON: 1800 132 237