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The state of medicinal cannabis in Australia

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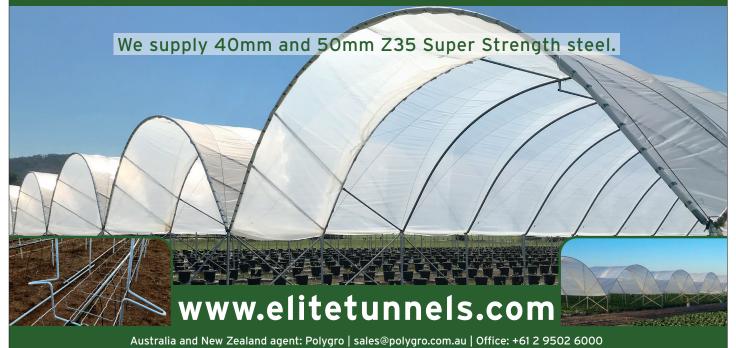
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FRONT COVER

Medicinal cannabis industry update with Emily Rigby (pictured). Read her full story on page 26 and attend the PCA 2022 Conference in March 2022 to hear more from the experts.





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welcome

Those growing capsicums and chillies in their greenhouses need to look up. High above you – 420km above to be precise – astronauts aboard the International Space Station (ISS) are growing a crop that's taking protected cropping to its limits.

As NASA prepares for long-duration missions, astronauts will need to grow fresh food. Leafy crops including lettuce have already been trialled but now fruit is on the menu in the Advanced Plant Habitat (as the grow area is known) with a crop of chilli peppers flowering and setting fruit.

This crop was chosen as it is rich in vitamin C and self-pollinating. To achieve pollination a gentle breeze was wafted across the plants — no mean feat in zero gravity. The chillies were grown from seed sown in July and took around four months from planting to harvest.

On October 12 Astronaut Megan McArthur tweeted that the crew was just a few weeks off harvesting their first peppers and asked the Twittersphere for advice on whether to eat them fresh or cooked (with their very limited cooking options). More recently came the news the peppers had been harvested and Megan had made Friday night tacos for the ISS crew (reserving some to be brought back to Earth for further study).

Have a look at the growing set up on the ISS on the regular weekly 'Space to Ground' report from NASA on YouTube.

Who'd have thought that horticultural skills would be needed on an astronaut's CV?



Encouraging horticulture

Adding an out-of-this-world spin to horticulture is one way to get people thinking about a career growing plants. Young horticulturist Olivia De La Mare, who I interviewed for this issue (see her profile on page 24), is keen to see more and younger people exposed to horticulture and its value as a career.

She says it is vital that more people recognise the value of horticulture as a career and try to encourage young people to explore the opportunities.

"I would like to see growers being proactive by talking to students at local schools, taking part in local agricultural shows and explaining whenever there's the opportunity what horticulture has to offer as a career," says Olivia. Perhaps space chillies could be a conversation starter that could lead a student quite literally down the 'garden' path.

Also adding inspiration and information to your horticultural world in this issue is Rick Donnan with great information on water quality for hydroponics (page 35), Emily Rigby with a medicinal cannabis update (page 26) and details from a recently released report on how to reduce nitrogen run-off from hothouses (page 20). We also meet PCA's new CEO, Greg Fraser (page 16) and discover who's talking at the PCA 2022 Conference in March (our preview starts on page 28).

Jennifer Stackhouse, Editor

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

Chair's REPORT

BY MATTHEW PLUNKETT

Welcome to the summer issue of *Soilless Australia*. As state and international borders open, I am hopeful some labour shortages and logistical challenges will ease.

After such a difficult year, the weather has made things worse for some growers. Considerable damage to structures, crops and buildings has occurred after storm events swept across the country in late October. Growers have reported damage in Virginia, South Australia (see page 8 for more on this), as well as in Coffs Harbour on the New South Wales North Coast, and in parts of Victoria. Our thoughts are with those affected growers.

PCA has started discussions with various peak industry bodies about what can be done to provide adequate insurance options for growers as well as canvassing the need for horticultural buildings to be classified in the National Construction Code. It is critical that this schedule of works is brought forward from 2025. Be assured, PCA will focus more on this issue in the new year.

I recently visited the team at the National Vegetable Protected Cropping Centre at Richmond (see aerial photo below). Significant investment in this facility is underway and a new protected cropping research hub has been launched that includes a six-hectare glasshouse precinct to provide further opportunities for innovative research in our sector.



Aerial view of the National Vegetable Protected Cropping Centre at Richmond, NSW. Note the Smart Glass Film on the structures.

Photo courtesy Western Sydney University

New board positions

This is my first report as Chair and I would like to thank my fellow Directors for their support. It is very humbling to serve our members and drive our industry forward with such a wonderful team. I would also like to thank departing Chair, Nicky Mann, for her outstanding contribution to PCA over many years. Nicky has been a great leader and is a passionate advocate for our industry. Nicky will continue to contribute to our industry and leaves this organisation in great shape (see her thoughts in 'Last Word' on page 42). We wish Nicky, Wade and family the absolute best for the future.

Congratulations to Tony Bundock, who is our newly elected Deputy Chair, and to Bahram Fayez, who replaces Nicky as an elected Director. PCA also welcomes Greg Fraser as our Chief Executive Officer. The PCA Board looks forward to working with Greg to implement our strategy. Meet Greg in more detail on page 16.

Thank you to all our growers and members who have participated in our industry survey so we can hear what matters most to you. PCA will review this information to ensure we continue to deliver member services that are valued.

The newly formed Industry Advisory Council had its second meeting recently. The IAC is an important way to connect on the ground with our diverse membership around the country.

Our conference is coming up in March 2022 in Coffs Harbour and PCA's conference committee is working hard to create a rewarding experience. It is exciting to anticipate getting together and learning, networking and visiting farms in the region. See more about the conference in the preview that starts on page 28.

Most of the exhibitor spaces are taken and the program is nearly finalised. Thank you to all our corporate partners/sponsors and to all who have registered. Please encourage your friends and colleagues to register at pcaconference.net.au/registration. If you are a levy paying grower, PCA can subsidise up to half the full conference registration costs to attend.

To all our members, allied trade and corporate partners and supporters thank you for your support this year. On behalf of the PCA team, wishing you and yours a very Merry Christmas with the hope that 2022 brings renewed optimism, fair prices and good health.

Matthew Plunkett, PCA Chair

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Cindy also told the audience that marketing and information sources about food had changed dramatically especially since the pandemic.

"Apps have replaced 'Mom' telling you what is healthy and sustainable to buy and eat," she said. "Consumers are also interested in the true cost of production such as hidden costs to the environment and these will become increasingly important in the future."

A study in the US indicates that consumers are paying less than a third of the true costs of food production.

Another issue for berry growers is packaging, which is not straightforward as it seems as

there are hidden costs in switching from plastic to what appear as more sustainable forms of packaging such as cardboard.

The current options for berry packaging are plastic, which can be recycled, versus cardboard punnets, which can be replanted but neither options are really satisfactory for consumers or growers. At the moment the future of packaging says Cindy lies in reducing the amount of plastics and concentrating on the use of recyclable raw materials.

Overall she concluded there are interesting and uncertain times ahead so berry companies need financial robustness and to find efficiencies as overall prices go down.

Berry snapshot

Globally both production and trade is growing for berries (strawberries, blueberries, blackberries and raspberries).

12.1 million tonnes produced in 2019

2.1 million tonnes traded in 2020

17 per cent of berries are traded globally

World's third most valuable fruit crop traded

Figures: World Bank, Global Berry Congress 2021



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2022

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January 18-19

PrecisionAg Vision Conference,

Renaissance Phoenix Glendale Hotel & Spa, Glendale, Arizona, US; thevisionconference.com/agenda-2022/

January 25-28

IPM ESSEN, Convention Centre, Essen, Germany; ipm-essen.de

February 1

Churchill Fellowship,

applications open for 2022; churchhilltrust.com.au

March 28-31

2022 PCA Conference,

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

March 28-31, 2022

Protected Cropping Australia Conference

Pacific Bay Resort, Coffs Harbour, NSW; pcaconference.net.au

The 2022 PCA Conference will be held in March in Coffs Harbour at the Pacific Bay Resort.



May 20-22

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

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

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

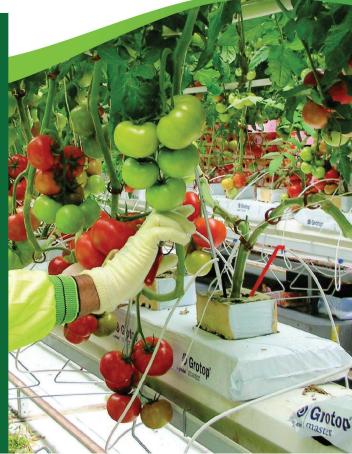
BerryQuest International in 2022,

Sea World, Gold Coast, Queensland; berries.net.au.

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Meet Greg Fraser PCA's new CEO

Greg Fraser has taken on the role of CEO for Protected Cropping Australia. Jennifer Stackhouse caught up with him on his farm in country New South Wales.

Greg Fraser BScAg, MMgt, FAICD, FAIA picked up the PCA reins as Australia started to lift lockdowns and with PCA's 2021 AGM on the horizon. It has been a whirlwind start.

He was just in time to bid farewell to the dynamic Nicky Mann, who stepped down as PCA Chair in October, and to welcome new Chair Matthew Plunkett and Deputy Chair Tony Bundock.

After spending two and half months locked down on the farm, Greg, who lives and works between his small farm at Wee Jasper and his home in Canberra, is keen to get out and about to visit PCA members and take the pulse of Australia's fastest growing horticulture sector.

"Now we can travel I want to get out among our growers and also catch up with corporate members," says Greg, who adds that he likes face-to-face contact.

"I would like to engage in the innovative things that are happening but also communicate what I find to government and industry."

He has already had meetings in Canberra with the federal Department of Agriculture, Water and the Environment (DAWE) and with the Australian Building Codes Board.

"Because of the structure of PCA, which has Directors from all states of Australia, who are reasonably active across their regions we have a good knowledge of what's happening around the country."

He is also looking forward to PCA's 2022 conference at Coffs Harbour on the north coast of New South Wales.

"The conference planning is well advanced with a good offering of topics and speakers," he says. "It will be a great opportunity to catch up with PCA members and the wider industry."

"PCA HAS THE OPPORTUNITY TO BECOME AN EVEN STRONGER VOICE FOR GROWERS..."

- Greg Fraser, CEO, PCA



Greg Fraser has been appointed as CEO for PCA.

Background in agriculture and management

Greg comes to PCA with an agriculture and management background and most recently as Executive Director and CEO for Plant Health Australia (PHA).

He has also served on many agriculture-related boards within Australia and in New Zealand including Chairman of the Plant Biosecurity Research Initiative and Chairman of the AGSOC Cross Sectoral Plant Biosecurity RD&E Implementation Committee.

It was through his role at PHA that he says he became aware of the scope and scale of protected cropping in Australia and how quickly more crops and new growers were moving into protected cropping.

"When I was managing PHA, PCA came in as associate member," recalls Greg. "I had a look at a number of protected cropping facilities including Costa's tomato facilities on the Atherton Tablelands, the very high-tech Sundrop in South Australia, and several growers in the Northern Territory, who were less high tech but fascinating.

"At that stage I was looking at the range of protected cropping systems, how they managed their biosecurity and how pest and diseases differ under cover and in the field."

Greg sees a very strong future for protect cropping in all parts of Australia, which has seen dramatic technical changes over the past 30 or so years since the PCA came into being as the Australian Hydroponic Association.

"PCA has the opportunity to become an even stronger voice for growers," says Greg whose networks and board and governance experience will help the organisation move forward.



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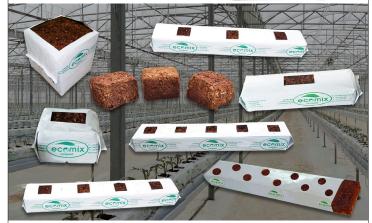












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He is also keen to strengthen what PCA can offer members and to build on communication both within the organisation and between PCA, government and other peak industry bodies.

"We don't have a lot of staff, so we need to use a range of communication skills to reach our members," says Greg.

He also keen to communicate the pluses to be gained from protected cropping for consumers. "Consumers' requirements are changing and they have issues about how food is grown," he explains. "We can use biological controls, we don't have weeds, we can control water and nutrients and as growers we can promote these benefits to better position the food we are producing."



PCA's new CEO, Greg Fraser, will work between his farm in southern NSW and the nation's capital, Canberra, where he hopes to lobby government and peak industry bodies on behalf of protected cropping. Photo Adobe Photo Stock

Another focus for Greg will be R&D projects that relate to protected cropping. "We know there's a lot going on round Australia and I am keen to tap into what's happening but also to look at where research and new ideas are needed for the betterment of our growers," he explains.

He also has his sights set on training and educational courses on offer for the next generation of protected croppers to develop new skills.

"The protected cropping industry will be utilising more and costly technology so we will need a more skilled labour force than is needed by general horticulture or agriculture," he explains. "There's a real opportunity for PCA to assist in the development of those skills and we do have a program starting to work on those at the moment to up-skill longer term employees."

CONTACT GREG

Greg can be reached at email greg.fraser@protectedcropping.net.au or by phone on 0419 503 315.



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Q. How have you coped with any changes due to COVID-19?

As Green Camel already had a focus on biosecurity we were well placed to step up to the extra challenges COVID brought to the work place. It really drilled into everybody just how important it is to follow the biosecurity requirements as we saw how easily things were spreading in the wider community.

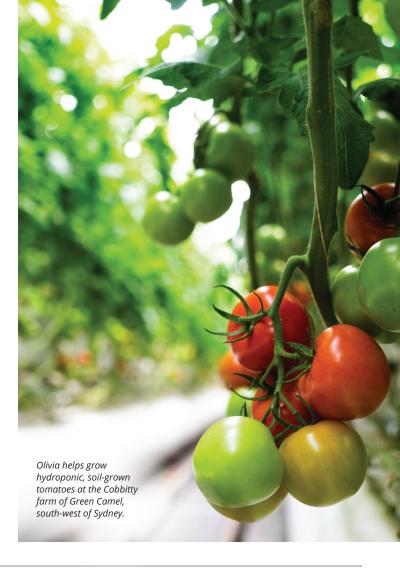
Q. What would you say to others contemplating a career in horticulture?

This is a great industry with so much to offer. There are so many different jobs and pathways and they are not commonly known outside the industry. I would say to anyone looking at career options to just try horticulture. I had no idea about the work that was available so coming here really opened my eyes and I saw the incredible opportunities that are available.

Q. What concerns do you have for the future of this industry?

My overwhelming concern is that we have a growing population and a growing demand for food but the industry needs to work with the environment to grow. We need to be thinking about sustainability in everything we do and this will change the industry. It is also vital that more people recognise the value of horticulture as a career and try to encourage young people to explore the opportunities. I would like to see growers being proactive by talking to students at local schools, taking part in local agricultural shows and explaining whenever there's the opportunity what horticulture has to offer as a career.

If you know a student, graduate or trainee who would like to share their journey into the world of protected cropping, contact Jennifer Stackhouse at editor@protectedcropping.net.au or call 0488 047 011.



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Cannabis stream at PCA conference

To be competitive, Australia needs to arm itself with the latest research, innovation and technology in protected cropping and cannabis production. What better place to learn what's new in protected cropping and

cannabis than at the PCA 2022 Conference? The PCA bi-annual conference is being held in Coffs Harbour and has been rescheduled to March 28-31, 2022 with a dedicated medical cannabis stream on day one of the speaker program.

Come along to hear from leaders in the Australian medical cannabis industry on topics relating to cannabis genetics, cultivation, IPM, new technology and more. Check out the program here pcaconference. net.au/program and see more in our preview (pages 28-34).

The cannabis industry, like most of us, has not been able to meet in person for more than 18 months with many events in 2020 and 2021 postponed, cancelled or moved online. I can't wait to meet you all at PCA2022 in March and if your thirst for in-person cannabis education continues meet me again at United in Compassion's (UIC) fifth Medicinal Cannabis Symposium on the Sunshine Coast in May 20-22, 2022 (see unitedincompassion. com.au/2022-symposium/).



It is amazing to reflect back and see how far the industry has come since legislative changes came into effect in 2016.

I look forward to looking back in another five years.

Emily Rigby, Rigby Research (rigby.research@gmail.com) is a Cannabis Consultant, Director, PCA and Director, Australian Medicinal Cannabis Association. She is PCA 2022 Conference Chair and will be a speaker and panellist at the PCA 2022 conference (see page 28 for the full conference program).





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PCA 2022 Conference preview - PROGRAM

Conference program at a glance

Start your four-day conference experience at Coffs Harbour, New South Wales, on the afternoon of Monday, March 28 followed by two full days of lectures on March 29 and 30 with ample opportunity to view stands in the exhibition area. The popular farm tours run on March 31 with one tour to berry growers and the other to local vegetable and herb growers.

To register for the conference and tours, visit www.pcaconference.net.au where all conference options are outlined. For more on registration options, including online and grower and levy payer discounts, see page 33.

Monday, March 28, 2022

9:00am-1:00pm Exhibition set up

2:00pm

Registration and exhibition area open

Training workshop for growers

Welcome function in exhibition area Sponsored by Haifa



Tuesday, March 29, 2022*

8:15am Welcome to Country and Opening Address

8:30am Julian Cribb AM: Keynote Speaker

9:00am Tristan Kitchener: 'What do supermarkets want?'

Student R&D projects 9:30am

10:30am Morning tea and exhibition

11:15am Concurrent sessions

MEDICAL	CANNABIS	POLLINA	TION		JCTION TO
11:15am	Emily Rigby	11:15am	Sophie Parks	HYDROPONICS	
11:35am	Daniel Saunders	11:35am	Katja Hogendoorn	11:15am	Rick Donnan
11:55am	David Franklin	11:55am	Onyeka Nzie	11:35am	Tony Bundock
12:15pm	Andrew Olley	12:15pm	Sunayana Sajith	11:55am	Nicky Mann
12:35pm	Andre DeVorss	12:35pm	Mandeesh Dhaliwal		Levi Nupponen
				12:35pm	Melinda Simpson

12:55pm Lunch and exhibition viewing

2:00pm Concurrent sessions

MEDICAL CANNABIS				NUTRITION/ IRRIGATION	
2:00pm	Matthew Hayes	TECHNOI		2:00pm	David Cavallaro
2:20pm	Nathaniel Jones			2:20pm	Ton Habraken
2:40pm	Angelica Cameron	2:20pm	Ron Geritz	2:40pm	Jeremy Evans
3:00pm	Thomas Forrest	2:40pm	John Norwood	3:00pm	Stefan Vogrincic
·		3:00pm	Marcus van Heijst	•	· ·

3:20pm Afternoon tea and exhibition viewing

4:05pm Concurrent sessions

CANNABIS FORUM AND GROWER WORKSHOP LAND USE/ PLANNING PANEL SESSION 4:05pm Elio Jovicich 4:05pm Levi Nupponen 4:05pm Emily Rigby and Panel: 4:25pm Julie Dart 4:25pm Neil Miles Industry challenges and the 4:45pm Shane White 4:45pm **Andrew Potter** future potential of cannabis 5:05pm Cheyne Clark production in Australia 5:25pm Wade Mann

7:00pm **Conference Dinner - Festival Under the Stars. Sponsored by Perfection Fresh**

Wednesday, March 30, 2022*

8:30am	Nancy Schellhorn 'Data driven businesses: the way of the future'
9:00am	Elio Jovicich 'Pulling together the RD & E Strategy for protected cropping: what did we learn about the PC industry in Australia?'
9:30am	Craig Shephard 'Mapping Project of Protected Cropping Australia: why does this benefit growers and the industry?'
10:00am	Godfrey Dol 'The Glasshouse Autonomous Challenge: lessons for

growers around the globe' 10:30am Morning tea and exhibition viewing

11·15am	Concurrent sessions

PEOPLE A	AND SKILLS	IPDM		NEW RESEARCH IN PC	
11:15am	Tony Bundock	11:15am	Reyhaneh Pordel	11:15am	Chelsea Maier
11:35am	Nicky Mann	11:35am	Cherie Gambley	11:35am	Mohammad Babla
11:55am	Adam Forbes	11:55am	Jonathan Eccles	11:55am	Giao Nguyen
12:15pm	Michelle Mak	12:15pm	SJ Steffen	12:15pm	Priti Krishna
12:35pm	Craig Owen	12:35pm	Shannon Mulholland	12:35pm	Phil Thomas

12:55pm Lunch and exhibition area

2:15pm	Concurrent sessions				
ROOTZONE/ SUBSTRATES		INNOVATION AND		THE BERRY SECTOR	
2:15pm	Ben Nikaj	NEWTEC	CHNOLOGY	2:15pm	Rachel Mackenzie
2:35pm	Israel Holby	2:15pm	Jonathan Morgan	2:35pm	Sophie Parks
2:55pm	Elliott Olumuyiwa	2:35pm	Elio Jovicich	2:55pm	SP Singh
3:15pm	Jessica Colussi	2:55pm	Mursleen Yasin	3:15pm	Ed George
		3:15pm	Neena Mitter		

Afternoon tea and exhibition 3:35pm

4:30pm Outcomes of COVID-19 panel discussion 5:30pm-5:45pm Conference Awards and closing address

^{*}The speaker program is subject to change so please check the confrence website on pcaconference.net.au for updates.











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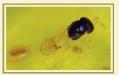
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Reducing Na levels

Unfortunately there is no way of removing only sodium ions from a solution. If the level of Na in your raw water is too high for the crop you are growing then, if you have a recirculating system, your only choice is to install reverse osmosis (RO).

Reverse osmosis equipment mainly consists of tubular cells made of semi-permeable membrane. When pressurised these allow water to pass through, but block the passage of all dissolved ions including Na and Cl, as well as all nutrient ions. The result is chemically (and biologically) clean water. This is perfect for use in recirculating systems, and especially for salt-sensitive crops.

One aspect of installing RO equipment is that you need to be able to handle the waste (brine) stream from the unit, which contains all the incoming salts. For example, say you have a unit that recovers 50 per cent of the input as pure water. The brine stream will be the other 50 per cent of the input, but contains all the salts, hence it will be twice as strong as the initial input water supply.

Another aspect of RO to watch is that a major operating cost is the replacement of the expensive membranes. Ensure that you purchase your unit from someone experienced, because proper pre-treatment of your raw water is essential to prolong the life of the membranes.

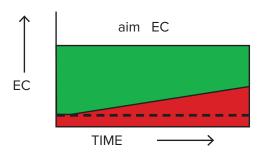


Figure 1: Build-up of non-essential ions at constant EC.

Build-up of sodium

Most recirculating systems are managed on the basis of maintaining constant EC (electrical conductivity – a measure of solution strength) of the recirculating solution. However, EC tells you nothing about the individual ions that make up that solution. Unfortunately, when non-essential ions, such as Na, are added in with the raw water at strengths higher than the plants take up, then their concentration will rise. This is shown in Figure 1, which indicates their increase with time.

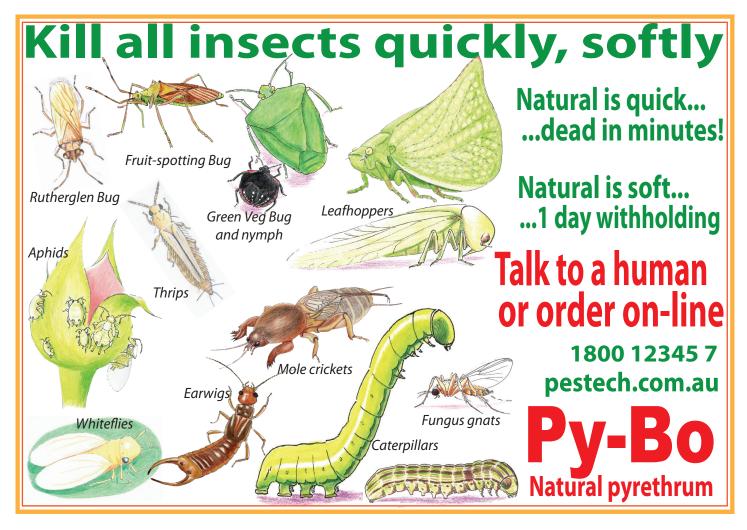
When this happens there is a double whammy. The non-essential ions, such as Na, are increasing towards toxic levels. At the same time the effective nutrient content of the solution is shrinking. That is, the plants are heading towards a mixture of being both poisoned and starved. Not a good combination.

Maximum Na level in recirculating solutions

Recommended maximum levels of sodium in recirculating solutions for different hydroponic crops, shown in Table 2, is based on information in *Bemestingsadviestbasis Substraten*, published by Proefstation voor Bloemisterij en Glasgroente, The Netherlands.

The original information is given in molar units (millimole/litre). A mole is the molecular weight of a molecule expressed as gram/litre. For an atom such as Na, molecular weight is the same as atomic weight, which for Na is 23. Because ppm (parts per million, also expressed as milligram/litre) is the unit commonly used in Australia and some other countries, I have also converted the molar units to ppm.

Rick Donnan was the reader inquiry columnist for *Practical Hydroponics and Greenhouses* magazine for 27 years until it ceased publication in 2018. If you have a question for Rick to tackle in our next issue, email it to editor@protectedcropping.net.au



Keep up to date with what's happening in the protected cropping industry.

Minimising energy usage in high-tech green houses

The team at Hawkesbury Institute for the Environment, Western Sydney University, has been investigating ways to reduce energy consumption in its hi-tech greenhouse, The National Vegetable Protected Cropping Centre, at Richmond, New South Wales.

Regulating the settings/opening and closing of vents or curtains and shade screens during the day based on daily changes in air temperature and energy consumption resulted in estimated savings of 1.83 kWh per 1°C cooling between the optimal (vents open/curtains closed) and least optimal (vents closed/curtains open) combinations.

This vent and curtain combination has potential for significant energy savings at 494 kWh per °C over a crop cycle of nine months in warm weather conditions.

The optimal vent-curtain combination reduced energy load at the rooftop, allowing for a maintained optimal plant canopy temperature profile and reduced cooling energy. Daily energy consumption was lowest for vents open/curtains closed (70.5 kWh) and highest for vents closed/curtains open (121 kWh).

It was also found that delaying the operation of opening and closing of vents and curtains until the plant canopy temperature reached $25^{\circ}\mathrm{C}$ reduced cooling energy consumption and decreased heating energy consumption in the morning (for example 08:00 to 10:00). Importantly, selection of the optimal cooling strategy utilising control of vents and curtains must also account for the impact from other greenhouse environmental factors, including light, humidity, and CO_2 concentration, which may be crop specific.

WSU Research team: Premaratne Samaranayake, Chelsea Maier, Sachin Chavan, Weiguang Liang, Zhong-Hua Chen, David Tissue and Yi-Chen Lan.



Curtains and vents will reduce energy use in the new WSU's greenhouse at The National Vegetable Protected Cropping Centre at Richmond.

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Certified Practising Agriculturist (CPAg), Accredited member of: Australian Institute of Agricultural Science and Technology & Australian Association of Agricultural Consultants.



New director joins PCA Board

Agronomist and Business Development Manager at HM Clause Pacific, Bahram Fayaz, has been elected to the PCA Board. He fills the vacancy created by the departure of Nicky Mann, who stepped down as Chair in October.

Bahram was already serving on the PCA's Industry Advisory Council (IAC). He says he is looking

forward to bringing his knowledge and experience to the Board.

"I am proud to be the voice of the growers in meetings and to solve their challenges and dramas that the industry is now facing," said Bahram. "Farming is getting difficult considering low margins, global warming, weather events and new pest and diseases."

Bahram is based in Melbourne and can be reached on 0437 530 726.

Scott Featherston joins Richel Group

Scott Featherston has been appointed as Richel Group's new Sales and Project Manager. In a profile published in *Hort Daily* in November, Scott commented on changes he has observed in the Australian horticulture industry over his 20 year involvement.



Bahram Fayaz

has joined the

from HM Clause

PCA Board as an

elected Director.

Scott Featherston

"Over the years, many of the small, low-tech growers have disappeared or gone into niche products, whereas some of the established growers have expanded to enormous farms."

He pointed to growth in tomatoes, particularly new snack varieties, berries, leafy greens, herbs and the emerging cannabis industry, which he says hasn't grown as quickly in Australia as it has overseas.

"I feel that with the added GMP regulations with cannabis it is crucial to get the climate and conditions correct to allow for medical-grade flower," he says. "Richel has also been very involved with medicinal cannabis facilities throughout the world and has some very good knowledge and projects. I have also enjoyed being involved in the industry here and learning more about the requirements for the crop."

Scott is based in Sydney can be reached on 0438 431 421.

Cannabis industry award

PCA Director, Emily Rigby, has been recognised for her active leadership in the cannabis industry and community in the Australian Cannabis Awards winning 2021 Woman of Weed award.



Emily is an expert on medicinal cannabis.

Emily has played an integral role in establishing the blooming Australian medical cannabis industry. Including establishing a licenced medical cannabis cultivation and research facility and releasing Australian-grown cannabis medicine into the Australian and export markets.



Woman of Weed award has been presented to Emily Rigby.

Emily is a Director of PCA and recently joined the Board of the Australian Medicinal Cannabis Association (AMCA).

Emily is a passionate advocate for medical cannabis – promoting education, patient access, research, and regulatory reform and is dedicated to removing the stigma surrounding the cannabis plant and facilitating the Australian medical cannabis industry.

Contact Emily at rigby.research@gmail.com.

=



Updated app for growers

Graeme Smith Consulting has announced that an update to the Greenhouse Growers Toolbox App is available to download in both IOS and Android versions.

This updated app is intended to be an industry resource to meet the needs of growers, researchers, hobbyists, trainers, retailers, suppliers and advisers in the wider area of protected cropping (greenhouses, vertical farms, aquaponics, hydroponics and soilless culture).

This is the third release of this app from Graeme Smith Consulting. It is planned to continue to make available additional calculators in the future. The Greenhouse Growers Toolbox was developed for commercial and hobby greenhouse and hydroponic growers for everyday system design or management use.

The complete Greenhouse Growers
Toolbox App is a suite of 15 calculators
that include: Greenhouse Acid or
Product Dosing to calculate treatment
PPM or volume (litres) of various
products/acids when added to
water; Greenhouse Area & Volume
to calculate area (m²) or volume
(m³) of greenhouse structures; and
Greenhouse Boiler Fuel Cost to
calculate and compare costs of various
common greenhouse boiler fuels.

Contact Graeme Smith at graeme@graemesmithconsulting. com.au

Maximise yield even through summer stress

A range of stress events throughout summer including excessive heat, wind and not enough water can have a huge impact on crops, reducing yield. One of the biggest factors limiting crop growth and yield through this stress is nutrition.

Plants only need small amounts of trace elements but they have a huge influence on plant growth and productivity. Trace elements are vital because they:

- Promote healthy root growth and support major plant processes like photosynthesis; and
- Help plants use macronutrients like nitrogen more effectively – even if high levels of nitrogen are applied, it can't be utilised well without a good balance of trace elements.

Although trace elements are in the soil, they can be unavailable to plants. Trace element deficiencies are often difficult to diagnose unless tested. Often yield potential is already lost once symptoms appear in the crop. From day one you need fertilisers that are plant-available and cost-effective. Stoller Australia delivers a full range of chelated trace elements that are made using a specific process unique to Stoller.

Stoller Australia's program to support your crop against stress includes Bio-Forge, Foli-Zyme, and Rootfeed. Bio-Forge is a unique combination of key nutrients that can improve early plant growth, root development, nutrient uptake and stress tolerance. It helps increase crop vigour and maximise yield potential. Applying Stoller's Bio-Forge before a stress event or immediately after helps to maintain or restore normal growth patterns.

"Stoller's program for stress has demonstrated again and again the improvement that it can have on yield across a variety of crops, which is really exciting. This is helping farmers across the country to get the most out of their crop's genetic potential," explains Domenic Cavallaro, Technical Manager, Stoller Australia.

Foli-Zyme enhances healthy growth and can assist in maximising yield potential through helping crops to keep growing even through stress conditions. The nutrients in Foli-Zyme help bud fruitfulness and new root growth in stress situations. RootFeed directly feeds the roots of the plant and supplies essential nutrients that enable stronger root growth and maintain plant health. This increases the plant's tolerance to stress and creates controlled, uniform growth.

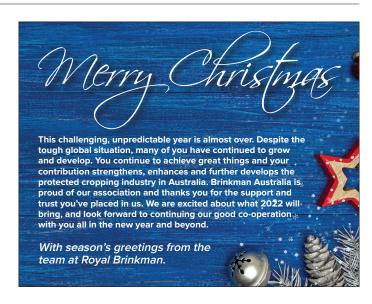
Producing favourable results across field, greenhouse and tree and vine, Stoller's nutrient solutions are proving to reduce effects of stress on a large range of crops. Using Bio-Forge, Foli-Zyme and Rootfeed in conjunction with an optimum nutritionally based program assists in maximising the genetic potential of the crop, resulting in increased yield and profit.

For more information on Stoller's nutrient solutions contact Stoller Australia at info@stoller.com.au or FREECALL 1800 337 845.



BIO-FORGE





Last word with Nicky Mann

As Nicky Mann steps down from her role as Chair of PCA she recalls the association she joined almost 20 years ago and looks to its future.

When my husband Wade and I migrated to Australia in late 2002 we quickly joined the national representative body for greenhouses and hydroponics, which was the AGHA. We have attended every conference since.

We have been so blessed by this industry and have literally lived, breathed, slept and eaten it since we started growing roses back in Zimbabwe in 1994. We have been fortunate to experience most types and forms of hydroponic and protected cropping production from gum pole structures covered in plastic, to Richel multi-spans, twin-skin Croft multi-spans, tunnel production and now high-tech, high-wire Venlo glasshouse structures.

We've grown a multitude of crops from roses to berries and mini-snack cucumbers along with dragon fruit, fig, ginger and turmeric. We've been large-scale exporters of roses, 'Mom & Pop' operators, retailers (we owned three florist shops), consultants and are now into corporate horticulture.

Through this all it's always been about the people whether staff, colleagues, competitors, customers, suppliers, researchers and all those associated with our industry. The people we've met have made the journey so much sweeter and more valuable. It has been incredible to learn, share and experience our protected cropping industry around the world with incredible people.

I am honestly thrilled and excited for the opportunities that lie ahead for PCA as there is a solid foundation in place to allow growth to happen. There is a clear strategic plan with membership, financial and industry goals laid out and an experienced team of Directors. We have a professional Secretariat team in place and a brand new Chief Executive Officer (CEO), Greg Fraser, who has the skills, experience and connections to get the job.

PCA is now operating with robust committees in place for Membership & Marketing; Finance, Audit & Risk; and Education & Training with a Conference and Industry Advisory Council. Vision, Mission and Culture Statements are in place; there is a governance manual and various mechanisms working to make PCA a professionally run industry body.

My advice to growers, allied trade and the Nextgen is this: please lean in and take a seat at the table. Make sure you are heard and you contribute to the conversation that



Nicky Mann, who has stood down as PCA Chair, urges everyone to get involved with all the protected cropping industry has to offer.

relates to your industry. Remember, you are the expert and you know your business better than anyone else, so speak up and get involved! Attend field days, workshops, industry meetings and the PCA conference. Complete surveys and connect with other growers and members of the industry. Always listen and learn but share your knowledge and opinions. If something is worrying you let PCA's CEO and Directors know.

Lastly, empower and up-skill members of our industry as much as you can because we truly need to nurture and encourage the future leaders of our industry, so the momentum created is carried forward with great success.

SA

MY ADVICE TO GROWERS, ALLIED TRADE AND THE NEXTGEN IS THIS: PLEASE LEAN IN AND TAKE A SEAT AT THE TABLE. MAKE SURE YOU ARE HEARD AND YOU CONTRIBUTE TO THE CONVERSATION THAT RELATES TO YOUR INDUSTRY.

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