Haifa

DownUnder

SPECIAL BULLETIN FROM HAIFA AUSTRALIA

EDITION 22 SEPTEMBER 2021

Haifa investing in young greenhouse knowledge

ON-THE-JOB training for young professionals in the horticulture industry has been a challenge amid COVID restrictions and has prompted Haifa Australia to invest in local expertise to ensure the continued development of new staff.

Emily Corbett joined the company as an Agronomist based in Victoria earlier this year and has recently been expanding her knowledge alongside greenhouse and hydroponic systems specialist, Tony Bundock.

Tony was earlier the Controlled Environment Horticulture Leader at the Chisholm Institute of TAFE before assisting the industry as a trainer for Powerplants Australia's greenhouse climate and irrigation control systems.

Today he continues to operate his consultancy, Genesis Horticultural Solutions, while assisting students in a part-time role at Community College Gippsland (CCG).

Emily said Tony's support had been a major plus for assisting her understanding and to

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Pictured in the greenhouse at Community College Gippsland in Victoria, Haifa Agronomist Emily Corbett has been building her greenhouse and hydroponic systems knowledge from industry specialist Tony Bundock, who assists students at the college in a part-time role and also continues to operate his consultancy, Genesis Horticultural Solutions.

ALSO IN THIS EDITION

Unique tools to help grow better crops

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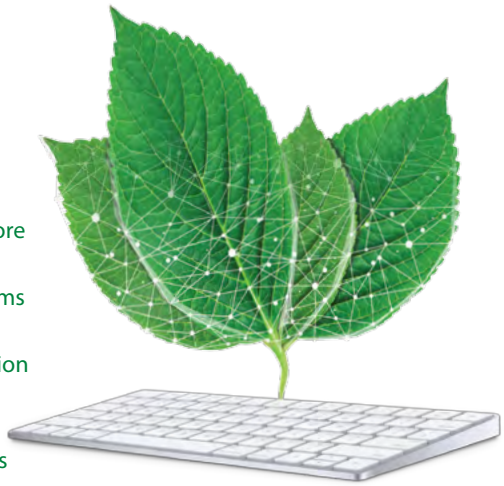

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In three easy steps, **FoliMatch™** generates accurate fertiliser recommendations based on local conditions and specific crop growth stages .... and you can share it!

New low sodium fertilisers for healthier crops

Innovations keep on coming

By Trevor Dennis
Managing Director, Haifa Australia

FOR more than 15 years, Haifa has been producing this newsletter to help keep growers and the supply chain abreast of our latest developments.

Reflecting over this time, it has been a period of great innovation and business change at Haifa, continuing to put the company at the forefront of specialty fertiliser supply in Australia

In this edition, we have some messages from our CEO, Motti Levin. Under his leadership, various innovative systems have been adopted, like our bulk bag recycling. Haifa was the first specialty fertiliser supplier to sign up to the industry stewardship program for bulk bag collection, helping to reduce the number of bags finishing up in landfill and impacting the environment.

Haifa also leads the globe in sustainability pathways. We are the only fertiliser company recognised by the United Nations for working on the 17 Sustainable Development Goals (SDG) as part of the Global Compact initiative, the world's most important initiative for responsible and sustainable corporate governance.

Haifa is always seeking new and innovative ways to provide the nutrients crops need, something we call 'Pioneering the Future', and we have a sharp focus on "sharing the knowledge" with all of our customers.

As growers and our retail partners continue to watch Haifa, you will start to see our new range of biological products – again, innovative advancements to match crop requirements.

Life may be different with COVID, but at Haifa we continue to move forward. Don't hesitate to contact our Australian team for any support with our products and nutrition tools.

Haifa

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1 Haifa Australia Queensland Sales Agronomist Peter Anderson with Nutrien Ag Solutions Key Account Manager Tania McAnaney.

2 Peter with Sue Hilliar, Lindsay Rural Coffs Harbour.

3 Peter with Coffs Harbour grower Dominic Hilliar.

On show at Hort Connections, Brisbane

Greenhouse knowledge

(cont. from page 1)

gain experience with greenhouse and hydroponic systems.

This included different irrigation systems, use of soil and soilless media and different growing practices.

Working with the Priva system for automatic fertigation of greenhouse crops, including visits to a number of hydroponic system set-ups, also had been a highlight.

Emily is putting the new knowledge into practice at CCG using fertilisers donated by Haifa Australia.

"I have certainly gained a lot from the training and am looking forward to using that knowledge," she said.

Tony said Emily was eager to learn, running from the theory perspective out to the on-site hydroponic operations and Priva systems.

"She is like the classic star student, hanging on every word," he said.

A large portion of Tony's consultancy work also continues to focus on support for operating the Priva systems, particularly in protected cropping areas of New South Wales. This has included a range of commercial enterprises growing berries and various vegetable crops. He also has assisted local land services in the State.

Growing forward

with Motti Levin CEO, Haifa Group

ONE of Haifa's core values is 'Farmer's Mind', and to think like a farmer, you must be acquainted with farmers' reality. Haifa's sales offices worldwide, staffed mainly by local teams, maintain close relations with farmers and address the local characteristics of the market and farming practices. In addition, the local presence allows for maximum efficiency and flexibility of logistics and supply.

Haifa has 16 subsidiaries, enabling us to serve more than 100 countries around the world. We started our activity in Australia more than 30 years ago. The opening of a subsidiary in Australia in 2009 reflects the organisation's understanding that a dedicated presence is indispensable to meet the rising local demand and serve the market properly – and it's still proving itself today.

Addressing global challenges

Sustainability is a part of our DNA. Since its establishment in the mid-1960s, Haifa has specialised in precise plant nutrition that maximises efficiency and reduces environmental impact of uncontrolled fertilisation. Hence, the solutions we offer naturally tie into global efforts towards better farming practices, which, on the one hand, can feed a growing world population with depleting resources and, on the other, also facing climate change challenges. The global food demand is growing. We have to find ways not only to increase yields, but also to do it efficiently with zero tolerance for environmental impact.

In 2019, Haifa Group set itself the goal of being part of the global effort and to act in accordance with the principles of the UN Sustainable Development Goals (SDG). By applying innovative, pioneering and ground-breaking measures that integrate the three economic, social and environmental dimensions, Haifa is working to achieve the 17 principles of the Sustainable Development Program.

Handling Covid-19

I am proud to say that as a result of recognising the threat and size of the pandemic quickly, we were able to adjust quickly. We have continued to supply products globally while protecting the health and safety of all of our employees. As part of it, we've made special adjustments at production sites and applied creative thinking to overcome logistical challenges. Moreover, we made it possible for employees to work from their homes whenever possible, as well as changed the shift schedule for site employees so that, on the one hand, exposure was decreased and, on the other, operations could survive if an infection occurred.

An activity that has benefited from the Covid situation is our 'Knowledge Sharing'. While sales teams could not travel and meet growers face-to-face, we took the time to create a wealth of digital materials that deliver professional knowledge and advice on-line.

Ownership change

Tene Investments Funds is a strategic investor that is deeply acquainted with the world of agricultural technologies. It has additional investments in the sector worldwide. Dr Ariel Halperin, the funder and the Managing Partner, used to act as Netafim's Board Chairman, so we believe Tene's partnership will be instrumental to helping our expansion plan to double production and to reach new heights.

The fact that Trump Group remains the main shareholder reflects its confidence in the company and faith that the involvement of Tene will take it forward.

New ammonia plant

Ammonia is a main raw material for Haifa's production. Accordingly, the construction of our ammonia plant is a major and strategic investment. With self-production of ammonia and long-term contracts for potash supply, Haifa Group is going to be stronger and more solid than it has ever been. The ammonia plant project is being carried out by Saipem, which has rich experience in the building of infrastructures, including ammonia plants, worldwide. The technology employed in the new plant is that of Haldor Topse, so all best practices have joint forces together and we're excited to accomplish this important project by the end of 2023.

Biostimulants range

HAIFA Australia recently launched its new HaifaStim™ range of nutritional supplements, which provide optimal plant conditions to benefit growth systems and encourage improved plant development, yield and soil fertility whilst reducing environmental impacts.

HumiK

HaifaStim HumiK is a biostimulant that encourages root activity, promoting cell division and growth, and can inhibit processes of tissue senescence. HumiK contains a combination of organic molecules that have specific physio-nutritional functions.

It is suitable for greenhouse vegetables, orchards, vineyards, olive, citrus, strawberry, ornamental plants and turf.

Booster

HaifaStim Booster provides the growing plant with amino acids, magnesium, boron, iron and other micronutrients, carefully formulated to boost metabolism.

Booster is ideal for phases of intensive vegetative growth and leaf expansion, ensuring optimal enzyme activity that supports plant vitality.

Vigor

HaifaStim Vigor contains more than 15 per cent free amino acids, which readily assimilate into the plant's metabolic mechanisms and can increase nutrient absorption due to higher micro-organism activity in the soil.

Vigor is recommended whenever a rapid vegetative growth is desired and to assist in achieving higher yields and overcome plant abiotic stresses.

eNergy

HaifaStim eNergy contains high concentrations of free amino acids and peptides – biochemically active organic compounds that accelerate physiological processes in the plant and help boost growth.

eNergy is recommended for vegetable crops, fruit trees and open field crops, at all growth stages.

Top five reasons to use HaifaStim

1. **Support high yielding crops:** HaifaStim products help plants produce the metabolites and enzymes required for maximum yields.
2. **Counteract stresses:** HaifaStim products help plants recover their metabolism and reactivate biochemical processes and enzyme synthesis necessary for growth.
3. **Maintain all crops in optimal condition:** HaifaStim products nourish plants with physio-nutritional compounds that help them to continue their productive cycle and avoid stresses.
4. **As carriers for herbicides and fungicides:** HaifaStim products facilitate the activity of the agrochemicals and accelerate their transfer into plants.
5. **Boost uptake of soluble fertilisers:** HaifaStim products improve root activity, so their co-application with soluble fertilisers results in better nutrient use efficiency.

Force

HaifaStim Force is the ideal physio-nutritional supplement for plants during establishment, budding, flowering and fruit growth. Force is also recommended whenever stress conditions develop. Due to its low EC and pH, it is ideal for use in hydroponic systems.

Force is rich with 18 free L-amino acids and peptides, polysaccharides, osmolytes (betaine and mannitol) and phytohormones.

Vital

HaifaStim Vital provides plants with readily available macro and micronutrients via various ingredients that act on the plant's systems, improving their performance. These elements include betaines, amino acids, cytokinin, mannitol, alginic acid, sugars and proteins.

For best plant development and yield, it is recommended to apply small portions of Vital repeatedly throughout the growth season.

VIM

HaifaStim VIM is a concentrated suspension of pure micronised leonardite, a rich source of humic and fulvic acids. Improving soil fertility and uptake of nutrients, it is recommended for use during plants' growth cycle.

VIM is suitable for greenhouse vegetables, orchards, vineyards, olive, citrus, strawberry, ornamental plants and turf.

New Agronomist continues Dookie tradition

HAIFA Australia has welcomed Agronomist Emily Corbett to its team, with the appointment also highlighting the strength of Dookie Agricultural College in Victoria for developing young rural careers.

Ironically, the head of the Haifa Australia team, Trevor Dennis, is also a Dookie Agricultural College graduate.

Emily has been based at her family's apple and pear property at Seville in Victoria's Yarra Valley and it has been a case of the proverbial fruit not falling far from the tree when it comes to her career aspirations.

The family grows predominantly apples and some pears at Seville, as well as strawberries on another property at Wandin North. Cherries also were grown earlier, a time of fond memories for Emily, when she was involved with picking and packing in the warehouse alongside her siblings and cousins. Her cousins still work on the properties today.

Emily recently completed a Bachelor of Agriculture, majoring in plant and soil science, from the University of Melbourne that included time at its Dookie Campus, where she also achieved a Cert III in Agriculture. Classes at Dookie, understandably, involved more hands-on learning in field situations.

Interest in horticulture

Emily said she had always maintained a strong interest in horticulture.

"Everything about horticulture interests me. I like to understand how everything works and to figure out how it works. It is more intensive and each element influences everything," she said.

Emily said she was excited to join a large-scale company with such unique, high quality fertilisers and a footprint in many different countries around the world.

She initially joined Haifa Australia two days a week as a Trainee Agronomist while completing her degree and moved into a full-time position at the start of February.

As part of the trainee program, Emily worked with retired Haifa Southern Agronomist Shaul Gilan and said she had gained enormous learnings.

Haifa Australia Managing Director Trevor Dennis, a former graduate of Melbourne University and the Dookie Campus, said he was pleased to continue the tradition, with another Dookie student now joining the Haifa ranks.

"Emily already has shown great enthusiasm and an eagerness to learn," Trevor said.

He said Dookie Campus had great relationships with various organisations across the agricultural sector that provided students with experience and, in numerous cases, a pathway for commencing their careers.

Dookie Campus Director Ros Gall has chalked-up 32 years at the Campus and so has had a hand in many of those careers, including that of Trevor.

Focused on agricultural sciences, the Dookie Campus accommodates about 200 students a year undertaking agricultural degrees.

"There is strong demand for our program and our graduates. Demand

Dookie Agricultural College graduate Emily Corbett (centre) was thrilled to join Haifa Australia earlier this year as an Agronomist. Ironically, the company has another Dookie graduate as its Managing Director, Trevor Dennis (right). They are pictured with Dookie Campus Director Ros Gall, who has chalked-up 32 years at the Campus and also had a hand in Trevor's career.

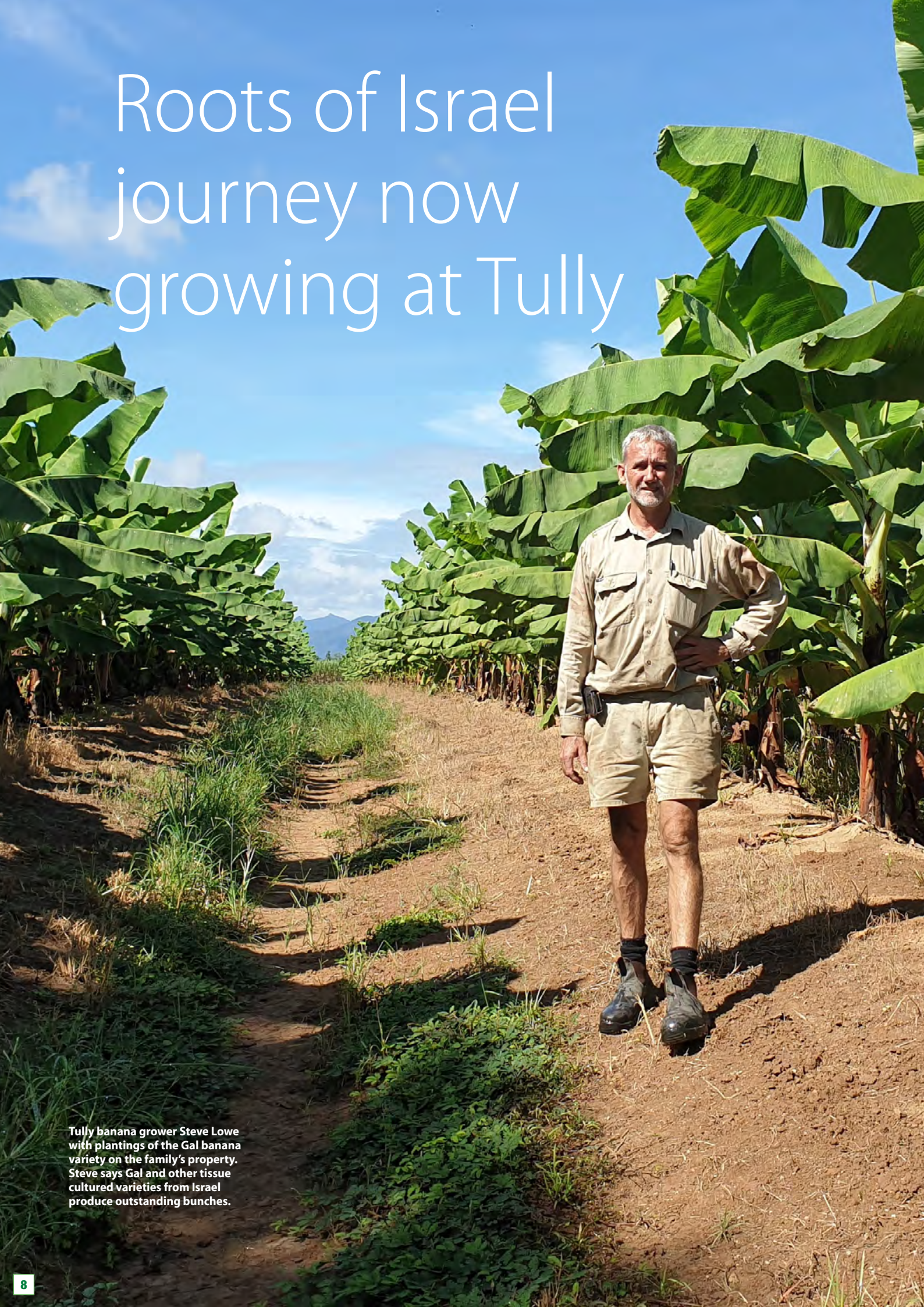
into an agricultural degree has been on the increase again since 2012," Ros said.

"Around 86-87 per cent of students have jobs within three months of graduation. We have been amazed this year at how many have picked up jobs considering the year we have had, (with the coronavirus)."

Students have the option to do internships with suitable organisations, while Dookie Campus also runs a mentoring program for students linked with industry partners.

A 2400-hectare working farm located in the productive and diverse agricultural area also provides for plenty of engagement with production agriculture, and has proved vital considering 85pc of students are from metropolitan areas.

Roots of Israel journey now growing at Tully



Tully banana grower Steve Lowe with plantings of the Gal banana variety on the family's property. Steve says Gal and other tissue cultured varieties from Israel produce outstanding bunches.

AN industry tour to Israel in 2015 is starting to come full circle for Tully banana grower Steve Lowe, with his family undertaking some of the first commercial plantings in Australia of tissue cultured varieties from the country.

Together with several other growers, Steve was hosted by Haifa in Israel and visited the plant propagation, selection and breeding company, Rahan Meristem, located near Israel's north-west border with Lebanon. The company is the world's leading exporter of tissue cultured banana and plantain.

After an extended period before becoming commercially available in Australia, the Lowes are planting the dwarf variety Adi, as well as Jaffa and Gal, on their 165-hectare property.

Steve, who is Chairman of the Australian Banana Growers' Council and continues to be supported on the farm by his 80-year-old father, Barry, said he also viewed some of the varieties in South America prior to Israel and they produced outstanding bunches.

"Haifa instigated the tour and it has led to these varieties coming into Australia," Steve said.

Adi is a second generation after Grand Nain that can withstand storms and strong winds. It is short with strong stems and, importantly, produces big bunches.

Rahan Meristem Scientific Director, Dr Eli Khayat, said Adi was quick-cycling and over a period of three years, growers would get an extra cycle of fruit.

The Lowes turned to controlled release nutrition with plantings on their river loam soils several years ago after traditionally spreading high volumes of granular fertilisers every month, and Steve said they would not be turning back anytime soon.

The six-month controlled release fertiliser, Multicote Banana Plant from Haifa, is used at plantings and Multicote also has been used at other key crop stages. The family also uses Haifa's specialist, fully water-soluble banana fertiliser blend, Banana One-Shot, through a fertigation system set up over one-third of their property, as well as a three-month controlled release urea fertiliser.

Multicote Banana Plant, which contains 11 per cent N, 8.3pc P and 8.3pc K plus micro-elements, uses Haifa's polymer coating technology, allowing nutrients to be released in a gradual manner according to plants' requirements and soil temperature. The latter is important in ensuring the nutrients being supplied are not lost during periods of high rainfall or over-watering.

Available exclusively through Lindsay Rural, Banana One-Shot is based on Haifa's high quality Poly-Feed fertiliser and comprises pure plant nutrients and generous quantities of essential micro-elements such as magnesium, boron and zinc. It contains 13pc N, just 0.17pc P, a high 24pc K, 8.7pc S and 2.1pc Mg.

Plantings with Multicote Banana Plant now account for close to half of the Lowe's plantation.

"We are applying about 1 tonne of Multicote to 4 acres and we are keen to increase the rate," Steve said.

"The big thing with these fertilisers is that we are using all of the nutrients, rather than risking run-off to the reef (Great Barrier Reef).

"We are now trialling the controlled-release urea and will look at how much potassium we are putting on.

"Regulations to protect the reef are now in place and include how much N is being applied to crops. With the controlled-release urea, we will use the full amount."

He said the controlled release fertilisers were particularly beneficial during the wet season.

"If it rains, plants will still be getting the nutrition. With the previous granular fertilisers we used, it would be all gone."

He said using the water-soluble Banana One-Shot at specific stages, like when bunches were forming, allowed them to vary applications with greater control through their fertigation system.

"It's also a cost saving because it is concentrated in the root zone and so you are using less."

Steve said the move to controlled release nutrition at planting and Banana One-Shot also had resulted in better throughput in the packing shed, with better grades and cleaner fruit.

> "We are using all of the nutrients, rather than risking run-off to the Great Barrier Reef.
>
> If it rains, plants will still be getting the nutrition. With the previous granular fertilisers we used, it would be all gone.
>
> **Steve Lowe, Tully**

Our approach to salinity in soilless production

with Peter Anderson, Queensland Sales Agronomist

Salinity and electrical conductivity

WE can measure the strength of nutrients and dissolved fertiliser solutions by measuring the Electrical Conductivity (EC) of a solution.

EC indicates the salinity of a solution. That is, the concentration of dissolved ions, including the ionic form of fertiliser (eg, NH4+, H2PO4-, K+) plus other salts (eg, Na+, Cl-) in the solution. EC indicates only the concentration of non-specific dissolved ions for a particular solution. It does not indicate which are the dissolved ions.

Clearly, two solutions of the same EC can have very different ionic compositions. Irrigation water and soluble and liquid fertilisers can contain various beneficial and detrimental salts apart from the minerals supplied to crops.

While inorganic fertilisers are necessarily salts, as they need to be dissolved in water to be available to plants, such fertilisers can contain salts that are not required, or are required in small concentrations, such as sodium (Na) and chloride (Cl) – the minerals that make up common salt.

Salinity effect on crops

While crops benefit from inorganic fertilisers we supply, some salts can have a negative effect on crop production – and this applies even to fertiliser salts supplied in concentrations that are too high.

The total salinity of a soil solution, regardless of its composition, can reduce nutrient uptake and translocation.

Uptake competition with specific ions such as sodium and chloride can be reduced. It can lead to reduced Ca++ and K+ uptake due to Na+ competition and reduced NO3- uptake due to Cl- competition.

Fertilisers low in detrimental salinity

Minimising the contribution of fertilisers to irrigation water salinity is vital to maintain the best growing conditions.

Crops differ in their ability to tolerate excess salinity. For example, Table 1, taken from December 2016 Primefact 1345 Second edition, Agriculture NSW Water Unit.

This table indicates the yield reductions that could be expected from some crops irrigated with saline water:

Crop	No Reduction (dS/m)	10% reduction (dS/m)	25% reduction (dS/m)
Avocado	0.9	1.2	1.6
Orange	1.1	1.5	2.2
Apple	0.7	1.0	1.6
Peach	2.1	2.5	3.0
Lettuce	0.9	1.4	2.1
Tomato	1.5	1.9	2.4
Capsicum	1.0	1.5	2.2
Zucchini	3.1	3.8	4.9
Cantaloupe Rockmelon	1.5	2.4	3.7
Cucumber	1.7	2.2	2.9
Sweet Potato	1.0	1.6	2.5
Raspberry	0.7	0.9	-
Strawberry	0.7	0.9	1.2

In this table EC is measured as dS/m

While climate, particularly evaporation and rainfall, soil type, and irrigation water quality and quantity will influence the potential effect of salinity, obviously growers should be aware of the relative sensitivity of crops.

We can see that berries, apple and avocado are quite sensitive to salinity, while peach, cucurbits, tomato and sweet potato are more tolerant.

In saline-sensitive crops, applied fertilisers with low Na, Cl and S can supply more nutrition at the same EC as inferior fertilisers. Logically, supplying "higher analysis" fertilisers will result in better crop performance at a given EC.

Haifa Cal Prime

Calcium nitrate concentrated – Greenhouse Grade

	Typical Analysis (%)
Total nitrogen (N)	17.0
Nitric nitrogen ($N\text{-}NO_3$)	16.7
Ammoniacal nitrogen ($N\text{-}NH_4$)	0.3
Calcium soluble in water (Ca)	23.5
Calcium oxide (CaO)	33.0
Insoluble matter	0.03

Haifa Multi-K Reci

Potassium nitrate – fully water soluble NK fertiliser

	Typical Analysis (%)
Total nitrogen (N)	13.5
Nitric nitrogen ($N\text{-}NO_3$)	13.5
Water soluble potassium (as K_2O)	0.3
Water soluble potassium (as K)	23.5
pH (10% solution)	33.0
Moisture	0.03
Water insolubles	350ppm
Sodium	150ppm
Bulk density	1.1g/ml

Haifa SOP Prime

Sulfate of potash – fully water soluble, Greenhouse Grade

	Typical Analysis (%)
Water soluble potassium (as K_2O)	53.0
Water soluble potassium (as K)	44.2
Sulfur trioxide (SO_3)	45.0
S	18.0
Humidity	0.5 max

Haifa potassium nitrate grades

Product	N (%)	K (%)	Description
Multi-K Classic	13	38.3	Standard soluble potassium nitrate for soil crops
Multi-K GG	13	38.5	Soluble potassium nitrate for greenhouse and soil crops
Multi-K pHast	13	38.5	Soluble potassium nitrate (greenhouse grade) with low pH in solution for use with alkaline water
Multi-K Reci	13	38.8	Soluble potassium nitrate with low sodium content for soilless crops and nutrient recycling

Haifa calcium nitrate grades

Product	Ca (%)	N (%)	N-NH4 (%)	Description
Haifa Cal AG	18.6	15	1.2	Calcium nitrate prills for spreading
Haifa Cal GG	18.8	15.5	1.2	Soluble calcium nitrate for soil and greenhouse crops
Haifa Cal Prime	23.5	17	0.3	Soluble calcium nitrate for soilless crops

Haifa potassium sulphate grades

Product	S (%)	K (%)	Description
Haifa SOP GG	18	42.3	Soluble SOP for soil and greenhouse crops
Haifa SOP Prime	18	44.2	Soluble low sodium, high analysis SOP for soilless crops

Haifa Cal™ Prime

New Standard of Calcium Nitrate

- **24% more calcium**
- **10% more nitrogen**
- **Near zero sodium and chloride**

Ideal for greenhouses, as used in Europe

100% soluble for excellent Nutrigation™, foliar application

Reduces applications, handling, transport

Reduces drain water salting

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Haifa Australia

P: (03) 9583 4691

E: australia@haifa-group.com

haifa-group.com

YOUR HAIFA TEAM

Trevor Dennis, Managing Director
E: trevor.dennis@haifa-group.com **M: 0400 119 852**

Peter Anderson, Qld Sales Agronomist
E: peter.anderson@haifa-group.com **M: 0459 488 850**

Emily Corbett, Agronomist
E: emily.corbett@haifa-group.com **M: 0419 364 085**

Jason Teng, Customer Service/Logistics
jason.teng@haifa-group.com **M: 0488 036 528**