



DownUnder

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SPECIAL BULLETIN FROM HAIFA CHEMICALS AUSTRALIA

National conference highlights agronomy, irrigation expertise



By Trevor Dennis
Managing Director

THE Haifa Chemicals Australia team would like to thank our distributors who participated in a very successful Haifa 'University' conference held in Melbourne at the end of June.

The event attracted many more agronomists and other distributor staff than we initially anticipated and feedback following the conference has been very encouraging. We strongly recognise this support from our distributors.

We hope to continue to lead the way in bringing agronomy and irrigation expertise and technologies together for the benefit of our distributors and growers.

Hopefully the agronomists involved and their teams are now armed with additional intelligence – also supported by programs like Haifa's Nutri-Net software – that can assist them to better support growers. Nutri-Net helps with planning irrigation schemes and crop 'Nutrigation' programs.

The positive reaction from the conference has since resulted in the development of several regional meetings for growers with Haifa distributors at Swan Hill and Shepparton in Victoria and Gatton in Queensland.

The meetings will include some similar content from the recent 'Haifa University'. Growers interested in participating in these meetings can contact Haifa distributors at these locations.

Meanwhile, Haifa's continuing innovation with specialty nutrients continues to shine through.

At the recent conference, there was particular interest in our Multicote range of controlled release fertilisers.

Since the event, a number of agronomists already have developed trials with Multicote products in large scale production systems.

Demand also is increasing for Haifa Poly-Feed, with many growers re-discovering the easy-use benefits of this product.

Labour shortages and cost constraints are making the process of blending fertilisers for Nutrigation more difficult. The big plus with Poly-Feed is that it comes pre-blended. It takes the stress out of Nutrigation for growers.

- See pages 6 – 7 for a full overview of the Haifa 'University' conference

Swan Hill event draws crowd

HAIFA distributor Swan Hill Chemicals in Victoria recently staged a very successful regional meeting for growers, in conjunction with Haifa Chemicals Australia (HCA) and Netafim Australia, on the latest trends in 'Nutrigation' and fertiliser delivery technologies.

Dominic Cutri, 'Cutri Fruits', Woorinen, with Matthew Earle (right), Swan Hill Chemicals, and students from the local TAFE College were just some of the attendees at the special growers evening presented by the Swan



Hill Summerfruit Development Association at the centre's Commercial Hotel.

Keynote speakers Shaul Gilan from HCA and Peter Henry from Netafim Australia discussed a range of issues surrounding 'Nutrigation' and fertiliser technologies

Efficiency, production gains driving new style fertigation

IMPROVED fertiliser use efficiency, crop yields and produce quality, combined with logistical and operational benefits, is driving increased adoption of more sophisticated fertigation systems among horticultural growers.

While advanced fertigation systems to deliver nutrients through irrigation do exist in the industry, simple pressure differential (PD) tanks have been the popular choice for many growers.

However, Steve Walsh, Northern Region Market Development Agronomist with Haifa Chemicals Australia (HCA), which specialises in application of high quality water soluble fertilisers through irrigation – a process it refers to as ‘Nutrigation’ – said this was changing as growers strived for greater efficiencies.

“With the shortage of water in previous years, combined with the higher prices of fertilisers, growers have been looking at how they can improve their applications and the more sophisticated injection systems have become more popular,” Steve said.

“They are coming from PD tanks and there is still a way to go, but the more sophisticated systems are coming into vogue.

“With these units, growers can more accurately dose their fertiliser and they are seeing increases in production and quality.”

Lindsay Rural Irrigation Division Manager Neville Mundt, based at the company’s Bundaberg store in Queensland,



Tony Denton, of Adds Up Engineering at Bundaberg in Queensland, shows Haifa Chemicals Australia (HCA) Northern Region Market Development Agronomist Steve Walsh the workings of his 2000-litre ‘Add-G-Tator’ fertigation system.

speculated that 50 per cent of growers were now using newer style fertigation units over the traditional PD tanks for their fertiliser programs.

Neville said proportional injection units using 1000-litre Intermediate Bulk Containers (IBCs) were popular and larger, specially manufactured systems also were now capturing attention.

“Proportional units powered by the irrigation water flow are now being introduced. Growers can put these anywhere in their paddocks because they don’t need power to run them,” Neville said.

He said the company’s Bundaberg store had placed up to 12 fertigation systems on local growers’ properties, including one connected to a centre pivot and with different nutrient application regimes.

“Some growers want to do four to five applications a week from their 1000L shuttle, some want to do it once a week, others want to do it every day and some want to do it twice a day. One grower wanted a smaller injector to be able to deliver 250L in a day.”

Neville said the newer fertigation units allow growers more control of their fertiliser applications.

“They can apply smaller volumes on a regular basis and distribute the nutrients uniformly. Previously it was hard to know where it was going and at what rate.”

“Growers are saving nutrients and they are distributing them more efficiently.

“Fertigation is a form of automation and so it is also reducing time and labour for growers.”

Baby leaf vegetable grower Shannon Moss, of Coastal Hydroponics near Stanthorpe in Queensland, installed a 1000L IBC fertigation unit through his local Lindsay Rural store last September and is planning to set up another system this year.



Corey Thompson, Store Supervisor for Lindsay Rural at Stanthorpe in Queensland, local leafy vegetable grower Shannon Moss, Coastal Hydroponics, and HCA’s Steve Walsh discuss Shannon’s fertigation system that uses a 1000-litre Intermediate Bulk Container (IBC).

Application of top quality water soluble fertilisers through irrigation systems is the best method for providing balanced plant nutrition throughout growing seasons. Haifa offers a wide range of water soluble fertilisers that contain only pure plant nutrients and are free of sodium and chloride.

Compared with fertilising weekly through his PD tank, daily application through the fertigation system produced up to double the yields as well as improved quality despite difficult conditions, although Shannon also attributed the quality gain to the use of red netting.

Shannon applied his own specialist nutrient blends using Haifa’s Poly-Feed and Multi-Cal products through the fertigation unit at rates equivalent with the weekly application through the PD tank, however he was later able to reduce the fertigation rates considerably.

“We are fine-tuning our hydroponic blends and will be looking at installing a second unit for next season,” Shannon said.

“We will save on nutrients. We can reduce rates down to about one-third by doing batch fertigation.

“It also saves time and labour. It runs on a computer and it is easy to set the time and feed it.”

Another grower near Bargara in Queensland is having strong success with a 2000L fertigation system developed by Adds Up Engineering at Bundaberg.

The unit is used on water melons and the grower has achieved production increases of 15-20 per cent and similar gains in fruit quality.

Much of the improvement has been put down to the enhanced application uniformity across areas with the fertigation system, while it also has resulted in a 15pc saving in fertiliser volume.



Lindsay Rural Irrigation Division Manager Neville Mundt with Haifa’s popular Multi-K potassium nitrate fertiliser at Lindsay Rural’s Bundaberg store in Queensland.

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Nation's largest fresh tomato producer follows strict nutrient, monitoring program

A STRICT nutrient and water monitoring program is one of the keys behind continual production and quality gains for Australia's largest fresh tomato producer, SP Exports.

Based at Childers in Queensland, the family owned and operated business supplies Australia's wholesale and retail markets and also exports to Asia and New Zealand.

The company was formed by prominent growers, the Simpson and Philip families, with the Philips acquiring full control of the business in 1998.

Ian Philip originally established a horticultural share-farming operation in New South Wales' Northern Rivers region in 1948. His son, Norm, joined the family business in 1963 and they purchased their current property in 1983. Ownership of the business has since transferred to Norm and Paula's sons, Andrew, Michael, Darren and Kevin.

The Philips have 600 hectares, including leased land, under trellised tomato production. They also work with external landowners at Bowen, Bundaberg and through southern Queensland, as well as in Victoria and Western Australia.

SP Exports produce and package regular tomatoes as well as roma, cherry, grape and the new, high profile Intense® line of tomatoes.

The introduction of Intense® late last year heralded a breakthrough in tomato production, almost eliminating the gel content in tomatoes.

The company holds the production rights for Intense® to the Australia, New Zealand, and Asia markets.

Intense® tomatoes already have had a major impact with consumers. In Australia, they are available at Coles stores nationally



and also are now on Woolworths shelves in Queensland.

Andrew Philip said the business' 600ha of tomatoes produced about four million packaged boxes per year, including around three million 10-kilogram boxes and the remainder being 5kg or 3.75kg boxes (of punneted cherry and grape tomatoes).

He said production was increasing by about 15 per cent year-on-year and he put much of this gain, as well as quality improvements, down to their nutritional program.

A range of testing assists SP Exports' nutritional decisions.

Soil and sap testing is conducted through Hortus, formerly CropTech, at Bundaberg.

"We do a full soil test to begin with and then quick soil tests on a fortnightly basis to look at available nutrient levels," Andrew said.

"We also do sap tests fortnightly through Hortus to look at the nutrient flow in the petiole. This is a good monitoring tool to assess the flow of nutrients."

Sentek water monitoring with the use of soil probes has continued for about 20 years.

Andrew said they had developed their own nutrient standards for their tomato production, however they were always looking at different aspects of nutrition.

Potassium nitrate plays a major role in the nutritional program and the Philips' have opted to use Haifa's Multi-K water soluble fertiliser for its consistency and high quality.

Comprising 100 per cent of the plant macronutrients, Multi-K is virtually free of chloride, sodium and other detrimental elements to plants.

"Consistency of product and quality is crucial – and Haifa is the benchmark of soluble nutrients in our eyes," Andrew said.

"In our scale of business, this is extremely important. Ease of use is another important factor."

The Multi-K is applied through fertigation tanks at up to 175kg/ha per week during the main growing phase

"We fertilise every time we water," Andrew said.

He said poorer quality fertilisers can have a dramatic effect on production.

"Quality is a big factor in our production. It's not just through the pack house – it's right down the supply chain, through to export markets and supermarket chains."

"When you source fertiliser product elsewhere that may be inferior, it's noticeable in quality areas such as shelf life."

Andrew said they also assess and had looked at different applications of the micronutrient trace elements, and this was where products like Haifa's Poly-Feed NPK fertiliser, which contained trace elements as well, had played a role.



Garth Campbell, formerly of SP Exports at Childers in Queensland, and Haifa Chemicals Australia Northern Region Market Development Agronomist Steve Walsh inspect some of the early tomato production at the Childers property.

Haifa quality preferred for tomatoes



Shane McCulloch (right), Regional Manager with Lindsay Rural based at Mooroopna in Victoria and pictured here with Haifa Chemicals Australia Managing Director Trevor Dennis at Lindsay Rural's Mooroopna store, has reported strong demand for a range of Haifa fertiliser products for upcoming tomato plantings. Shane says Haifa's Multi-K, Poly-Feed products, Multi-Cal, blends and a range of other fertilisers have all been ordered for use in fertigation programs for tomatoes. He says the key with Haifa products for growers was there premium quality. Meanwhile, in the surrounding region, apples, pears and stone fruit production are the other major horticultural pursuits.





Haifa Chemicals Australia Southern Region Market Development Agronomist Shaul Gilan talks with distributor agronomists and other reseller staff during the workshop on mixing fertiliser solutions at the recent Haifa 'University' conference in Melbourne.

Distributors learn new fertiliser technologies at Haifa 'University'

Release Fertiliser (CRF) technology in its Multicote range. These products are based on fertiliser granules with a soluble nutrient core, surrounded by a polymer coating which can be adjusted during the manufacturing process to give longer or shorter release of the nutrients.

Amir discussed the different release curves with the Multicote fertilisers, ranging from two months to 16 months.

Haifa's Multicote products differ from many other CRF fertilisers because the release rate is governed by temperature, not moisture. Other factors such as soil type, humidity, pH and microbial activity do not affect the release rate. This ensures the nutrient being supplied to the plant is not lost during periods of high rainfall or over-watering, and it is what distinguishes the technology from conventional granular fertilisers.

The Multicote products combine controlled release and readily available sources of nitrogen, phosphorus and potassium. Different compositions address the specific nutritional needs of each crop type and the growth conditions.

Haifa says in terms of fertiliser use efficiency, they allow nutrient applications to be reduced by 20-30 per cent of what would normally be applied using standard granular products. This is due to the low nutrient loss factor and their ability to feed plants in a more consistent way compared with other granular fertilisers.

Delegates at the conference were made aware of some of the latest equipment available, particularly in relation to fertigation, from Peter Henry, agronomist with leading irrigation company, Netafim, while Haifa's Nutri-Net software program for advisers and growers also was highlighted. The Nutri-Net program helps with planning irrigation schemes and crop Nutrigation programs and offers primary and advanced operation levels.

Paul Elkin, agronomist in broadacre and tomato production crops with

IK Caldwell at Rochester in Victoria, said the focus on monitoring soil solutions at the conference was especially interesting.

"The conference highlighted that we should be monitoring soil solutions more once we have fertigated with products to assess impacts on pH, ECs and other factors," Paul said.

He said information on Haifa's CRF technology and the different release times of its Multicote products according to soil temperature also was highly valuable.

Neil Innes, agronomist with Lindsay Rural at Bundaberg in Queensland, said the technology associated with Haifa's Multicote fertilisers and its range of Multi-K products available with different nutrient compositions offered significant benefits for the future direction of horticultural crop nutrition.

Neil said the conference also made him aware of some of the latest developments with fertigation programs and nutrient application efficiency.

Ron Bollard, Queensland and Northern New South Wales Territory Manager with Eco Fertiliser Wholesale Pty Ltd, agreed that the granular CRF technology with Haifa's Multicote products was very exciting for the industry.

"The update on the technology and outline of the workings of the fertilisers at the conference was excellent. They are the way of the future in granular fertilisers and for helping prevent nutrient loss," Ron said.

He said the developments with fertigation and how this applied to the apple industry in a case in Victoria, contributing to improved profitability, also was encouraging.

If distributors or individual stores are keen to hold a similar meeting in their area for growers, contact Haifa Chemicals Australia or Netafim.



Haifa Chemicals Australia (HCA) Managing Director Trevor Dennis and consultant agronomist Roberto Natan (right), who also works with the Israeli Department of Agriculture, with Netafim agronomist Sam Birrell. HCA linked with Netafim at the conference to update delegates on the latest in fertigation equipment.



Steve Walsh (centre), Northern Region Market Development Agronomist with Haifa Chemicals Australia, caught up with Greg Edwards, Elders Brisbane, and Julien Pearce, Elders Adelaide, at the conference.



Victorians Brian Cumming and Matthew Earle, Swan Hill Chemicals, with Tim Ring, of IK Caldwell at Shepparton.



Lindsay Rural Queensland staff, Simon Berkeley, Nambour, Neil Innes, Bundaberg, and Paul Guest, Brisbane, caught up during morning tea.



Israeli guest speakers at the recent Haifa 'University' conference in Melbourne, Amir Polak, Haifa's Controlled Release Fertiliser (CRF) Product Manager, with consultant agronomist Roberto Nathan, who also works with the Israeli Department of Agriculture.



Simon Andreoli and Neil Mungall, of BGA AgriServices, agents for CRT at Bundaberg and Kingaroy in Queensland, with Queensland and Northern New South Wales Territory Manager for Eco Fertiliser Wholesale Pty Ltd, Ron Bollard.



Matt Thomas and Matt Stewart, both of EE Muir and Sons in Victoria.



Chris Chapman, Eco Fertiliser Wholesale Pty Ltd, with Michael Wearmouth, of Prime Hort in New Zealand.

Delegates particularly learned how new systems of fertigation, or 'Nutrigation' as Haifa refers to it, can help increase crop yields, fertiliser use efficiency and application efficiencies.

Multicote cuts fertiliser use, combats nutrient loss in Qld lettuce crop

DUANE Lihou, manager of the newly acquired Rugby Farm vegetable growing property near Stanthorpe in Queensland, hopes to halve fertiliser and manure applications and better manage the risk associated with the area's leaching-prone soils by switching to Haifa's Multicote controlled release fertiliser.

The Rugby Farm property, located 15 kilometres north-west of Stanthorpe, irrigates about 160 hectares (400 acres) for lettuce, cauliflower, Wombok Chinese cabbage and broccoli production.

Duane already has trialled an eight-month controlled release Multicote fertiliser and will be applying another tonne of a four-month product in the upcoming lettuce season.

"We are now aiming to get just one crop out of it, so we are going for the four-month Multicote," Duane said.

Haifa's Multicote products are based on fertiliser granules with a soluble nutrient core, surrounded by a polymer coating which can be adjusted during the manufacturing process to give longer or shorter release of the nutrients. Typical release periods range from two months to 16 months.

Duane said in the first trial, the eight-month Multicote was broadcast and incorporated to a depth of 5-10 centimetres before planting.

While Haifa says fertiliser savings of 20-30 per cent can be expected from using Multicote, Duane was able to cut fertiliser use through the irrigation and manure application in half.

Mostly urea and potassium nitrate have been applied through the irrigation, while the bull manure has been applied at 10t/ha.

"There will be considerable savings from using Multicote, as well as some labour saving," Duane said.

"The lettuce production also was just as good as we had previously. We did have some concern for size from using the Multicote, but it was just as good."

Haifa's controlled release products also differ from many others because their release rate is governed by temperature, not moisture. This is important in ensuring the nutrient being supplied to the plant is not lost during periods of high rainfall or over-watering, which is critical to Duane considering the Rugby Farm property's location on the leaching-prone granitic soils of Stanthorpe.

"We can get a lot of nutrient loss here. When it occurs, we need to put double the amount back on, whereas the Multicote stays around a lot longer as a result of its coating."

"We can't afford to realise half-way through a crop that we are not going to get a crop due to nutrient loss or inadequate nutrient supply.

"With the Multicote, you can have confidence that it's going to supply them the required nutrients – and that's a bonus," Duane said.



Stefano Coco, of Lindsay Rural at Stanthorpe in Queensland, Duane Lihou, manager of the Rugby Farm property near Stanthorpe, and Steve Walsh, Northern Region Market Development Agronomist with Haifa Chemicals Australia, among some of the lettuce production at the property.

Additional Qld trials planned

By Steve Walsh
Northern Region Market Development Agronomist

PLANS are well under way for further trials with Haifa's Multicote controlled release fertiliser in the Stanthorpe area in Queensland following promising results in lettuce, cauliflower and baby-leaf last season.

With Stanthorpe water supplies at critically low levels, the focus will be on products with shorter release patterns (around four months) in case back-to-back cropping of trial blocks is not possible.

The Queensland strawberry season is in full swing and there is strong grower interest in using controlled release product as a basal under the plastic prior to planting.

We are closely monitoring a trial at Caboolture comparing four-month and eight-month release products with standard fertilisers applied by growers.

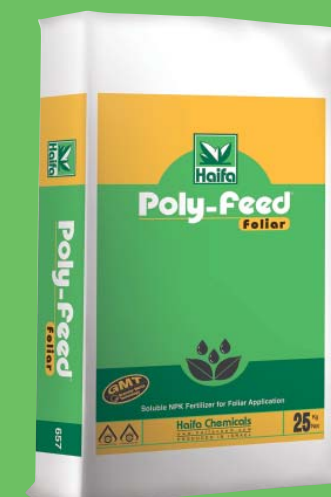
Early plant growth has been excellent, with strong flowering and fruit-set from both products so far. These will be monitored to further assess performance over the full crop cycle.

The aim with these controlled release fertilisers is to enable almost all crop nutrient requirements to be supplied at planting, thereby allowing minimal post-planting inputs. This really simplifies crop nutrition management for growers, allowing them to focus on other tasks.

Over the past year we have observed significant reductions in soluble fertiliser prices, including for our Poly-Feed range.

There has been a tremendous resurgence in interest from all production districts of Queensland this year to switch from fertigating with straights to using the one-shot convenience of Poly-Feed.

Growers who use Poly-Feed love the simplicity of having just one product that supplies NPK, magnesium and trace elements.



Haifa demand grows at Gatton

Branch Manager at Elders Gatton in Queensland, Darren Steinhardt, pictured with Haifa Chemicals Australia Northern Region Market Development Agronomist Steve Walsh at the Gatton store, says demand for Haifa's quality products has grown in the region, aided this year by lower fertiliser prices.

Darren says three popular Haifa fertilisers sold through the store include Multi-K, Multi-Cal and Multi-MKP. Haifa's calcium nitrate has been available at Elders Gatton only this year and has achieved good sales.

Both agricultural grade and water soluble products are

offered at the store, with the latter attracting most attention for fertigation programs.

Darren says Haifa has a reputation for producing top quality fertilisers.

"They contain no impurities. There has never been a problem with them in the paddock," he says.

Potato planting recently finished through the region, with broccoli, cauliflower, lettuce and other brassica crops still under production.

Darren says produce quality has been good, however prices have not gone in growers' favour this year.



Sweet's focused on top quality, productive strawberry plants

BEING a “nursery” for commercial strawberry growers, Sweet's Strawberry Runners has a major focus on supplying quality plants that establish fast and produce plenty of fruit from an early stage.

Located just south-west of Stanthorpe in Queensland, the business also aims to continue to achieve operational efficiencies and improved productivity in meeting this objective.

Sweet's is one of three strawberry runner producers in Australia, with 80 per cent of its production delivered to Queensland growers. About half of Australia's strawberry production is grown on the Sunshine Coast between Caboolture and Nambour.

It also ships runners to Victoria, Tasmania and South Australia, some into Western Australia and New South Wales, and exports to the Pacific Islands.

The operation has more than doubled in the past five years, achieving steady growth in the industry.

A new shed three years ago marked a major expansion.

Sweet's has 40-60 hectares under strawberry production on the Granite Belt, producing 10-12 million plants.

Managing Director Wally Sweet said planting of the “mother plants” occurred in September-October, supplying the major market on the Sunshine Coast from mid-March through to mid-April.

Wally said they generally undertake strawberry cropping on an area for two years before rotating to a cover crop or pasture for grazing. Plants are fertilised according to soil and sap analysis.

“We generally start them off on trickle irrigation with nutrients and we also

fertigate with nutrients overhead,” Wally said.

Fertiliser broadcasting and banding have occurred as well.

Sweet's conducted a trial over the last season with several companies to investigate the impact of a number of fertilisers on plant quality and production, as well as in relation to operational efficiency benefits.

Each fertiliser treatment was applied over about one-quarter of a hectare two to three weeks prior to planting.

One of the products to show very good results was the controlled release fertiliser, Multicote, from Haifa.



“To assess the performance of the fertilisers, we looked at the number of plants per area, their physical size and the quality,” Wally said.

The trial showed significant improvement in runner quality at harvest, with more robust runners in the Multicote-treated area.

Haifa's Multicote fertilisers are at the forefront of Controlled Release Fertiliser (CRF) technology. They are based on granules with a soluble nutrient core, surrounded by a polymer coating which can be adjusted during the manufacturing process to give longer or shorter release of the nutrients.

The Multicote products differ from many other CRF fertilisers because the release rate is influenced by temperature, not moisture. This ensures the nutrient being supplied to the plant is not lost during periods of high rainfall or over-watering.

In terms of fertiliser use efficiency, Haifa says using

Multicote can allow applications to be reduced by 20-30 per cent of what would normally be applied using conventional granular products.

This is because of the low nutrient loss factor and the ability of Multicote to feed plants in a more consistent way, without the peaks and troughs of nutrient availability that can occur with conventional granules.

Wally said the use of products that could help reduce fertiliser applications, save on labour and limit the risk of nutrient loss from leaching would certainly assist to achieve operational efficiencies and improved productivity.



▲ Haifa Chemicals Australia Northern Region Market Development Agronomist Steve Walsh pictured earlier this year inspecting strawberry plants in the Multicote fertiliser trial at Sweet's Strawberry Runners near Stanthorpe in Queensland.

◀ Sweet's Strawberry Runners Managing Director Wally Sweet with the “end product” prior to packaging.

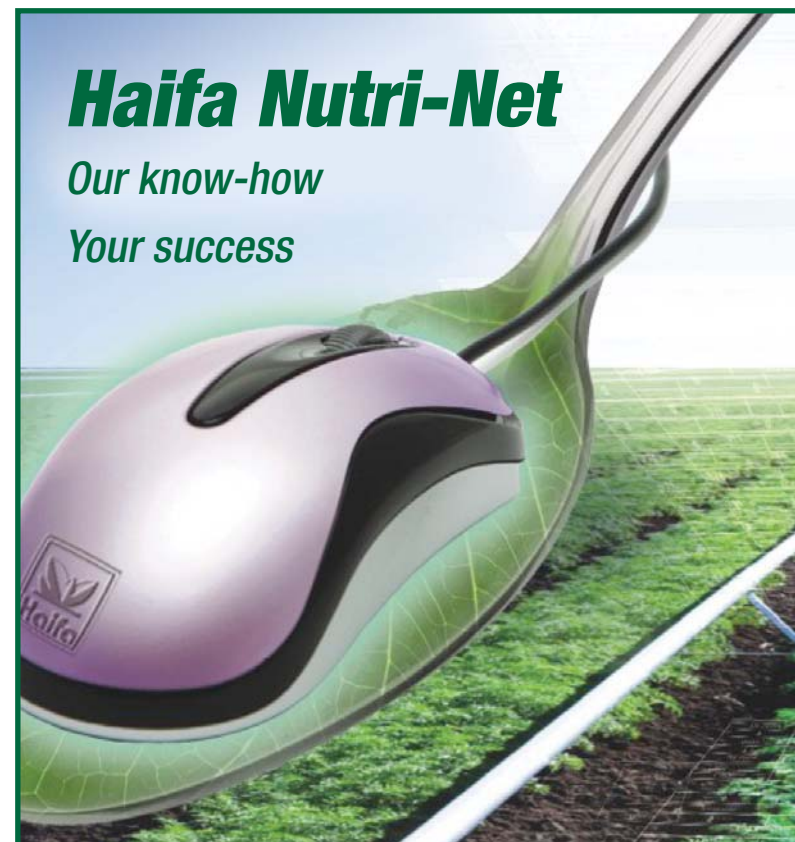


Busy on the sorting table at Sweet's Strawberry Runners.

Haifa Nutri-Net

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Haifa Nutri-Net™ is an expert software designed to help growers to plan irrigation schemes and Nutrigation™ programs for Teaspoon Feeding™ of their crop.

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To discover the benefits of Haifa Nutri-Net™, go to www.haifa-nutrinet.com



Fertigation behind new high density, high return apple orchards

A SWITCH to fertilising apple orchards by fertigation, compared with traditional granular broadcasting and flood and drip irrigation methods, promises much faster orchard establishment as well as improved production and returns for growers.

Bruce Scott, of EE Muir and Sons at Silvan in Victoria, highlighted the company's involvement in fertigation systems with growers to agronomist and other reseller delegates at the Haifa 'University' conference in Melbourne recently.

Haifa Chemicals Australia (HCA) offers a range of premium quality water soluble fertilisers for application through irrigation systems – a process it calls 'Nutrigation' – that ensures balanced plant nutrition throughout growing seasons. The company's products contain only pure plant nutrients and are free of sodium and chloride.

Bruce said EE Muir and Sons was using the Haifa range, in its Campbells brand, in fertigation systems with growers in the Gippsland and Yarra Valley in Victoria, Tasmania and around Batlow in southern New South Wales, with recent interest growing in South Australia and the Goulburn Valley in Victoria.

He said the move to fertigation also was being driven by drier conditions and the lack of available water in recent years.

"Growers have been irrigating earlier and applying nutrients through the water because trees haven't been getting the required nutrition through the soil," Bruce said.

Fertigation has allowed for fast establishment of high density apple orchards, comprising around 3000 trees per hectare compared with 800-1000 trees/ha traditionally, producing yields of 40-60 tonnes/ha in the third year. The aim is then 80-100t/ha year-on-year.

Traditional apple orchards produce their first commercial crop in the fifth year, with yields of 30-50t/ha.

Bruce Scott, of EE Muir and Sons at Silvan in Victoria, pictured talking about the benefits of fertigation in apple orchards during his presentation to delegates at the Haifa 'University' conference in Melbourne.



"The aim with fertigation is to achieve 1 metre of growth in the first year, growing at up to 2 centimetres per day," Bruce told the Haifa conference.

He said fruit quality gains from fertigating also had been significant, with some growers achieving up to 94-95 per cent pack-out.

An estimated cost of \$100,000/ha for fully established, high density fertigated apple orchards made it a significant investment, however the earlier production, considerable yield and quality gains and higher returns were attracting growers.

"Growers are looking at the earlier establishment and higher returns. Some growers, based on the figures they are targeting, hope to have the systems paid-off in several years and to be moving into positive territory," Bruce said.

"It is a high outlay and high input system, but growers are seeing that they can recover their costs quickly and be more productive.

"They can produce more off a couple of hectares than they can off a large proportion of their properties.

"Once growers get into fertigation, they cannot get enough of it."

He said correct irrigation and nutrient feeding with the systems was critical.

"MAP, calcium nitrate, potassium nitrate and lots of K when production

is imminent are all important with the systems."

"P is important for early establishment and later for cell and fruit set, calcium provides for good growth and K is important for size, flavour and good general quality."

Bruce said fertigation also was improving grower understanding of nutrient responses and the need for balanced nutrition to achieve the best production responses and provide other structural benefits.

"Production under these systems can remove 250t/ha of nitrogen in year one and year two, so you have to feed the nitrogen, but applying potassium nitrate and calcium nitrate is different to applying urea."

He said fertigation was a great tool for nutrient monitoring.

"It allows for complete control of fertiliser inputs, flexibility of application and it is measurable. We have the ability to measure what is going on and bring science back into the equation."

"Growers can apply a ratio of nutrients that is suited to the needs at the time and then can change when the trees are fruiting. Instead of putting on 1t/ha of fertiliser at the start of the year and hoping that it is there through the season, they can apply small amounts when needed."

Further Haifa 'University' conference coverage, pages 6-7

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