



Bundaberg strawberry fields are blooming - early



PRODUCING good volumes of high quality fruit on strawberry plants as early as possible remains the continuing target for Queensland grower Diem Chhay, and he has largely achieved it through fine-tuning the growing program over the last decade.

"We start picking in April, going through to October, and you want to be picking good volumes in June and July, well before August and the run into the summer months," Diem said.

"We want to be picking as much as possible per plant as early as possible."

Together with his wife, Joanne, Diem manages a 45-hectare property near Bundaberg in the State's Wide Bay-Burnett region for Donnybrook Berries.

His journey to Queensland has taken him all the way from Cambodia to New Zealand, where his family farmed, and through Melbourne and Victoria on his way to the

sunshine in Queensland, where some of his family also reside, in Brisbane.

Now happy to be called an Aussie, Diem and Joanne even adopted some favourite local names for their two young sons, Bruce (4) and Alex (2).

Together with fruit from Donnybrook Berries properties at Stanthorpe and Caboolture, the Bundaberg strawberries are sold to Coles.

Diem grows two strawberry varieties under plastic on the loamy, "bull yard" soils at Bundaberg, including Sundrench and Red Rhapsody, the latter of which they were one of the first to trial over a significant area after previously growing the Festival line.

"We noticed Red Rhapsody produced good volumes of fruit, the brix and size were good and its firmness was better than Festival," Diem said.

Nathan Kay with Nutrien Bundaberg in Queensland, recently caught up with local strawberry grower Diem Chhay and inspected the quality of this season's crop.



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China, shipping impacts local fertiliser pricing

By **Trevor Dennis**
Managing Director,
Haifa Australia

THE global fertiliser market has almost returned to pre-COVID levels on pricing, however supply and shipping remain continual issues.

On the supply front, while Haifa has no issues in supplying products, with our facilities working at record production levels, the influence of Chinese instability on exports is causing increased demand for our products during a time when the Northern Hemisphere season is in full swing.

Distributors are faced with "a bird in the hand is worth two in the bush" consideration, and based on this caution, ordering from secure supply sources is winning rather than taking a gamble on lower priced product that

may not arrive on time.

This conundrum has been further exacerbated recently, with demand for containers out of China growing faster than China importing for their own needs. And as a result, the price of shipping is increasing.

So, what does this all mean for growers? In simple terms, we are observing strengthening of the market and prices are rising. It is expected this will continue during July, and then demand should soften in August. This softening will not flow through to local pricing until October or November, and then the cycle will start again as the Northern Hemisphere winter approaches and energy for heating pushes prices for natural gas up.

As Australia does not make specialty fertiliser products for horticulture locally, all products are imported and the availability and price of shipping has a major impact on what the farmer pays.

Major shipping lines are continuing to avoid the Suez Canal due to the aggression of the Houthi rebels. No shipping company wants to see the loss of a vessel or the lives of their sailors. As recently as June 19, we have seen an attack on a bulk vessel and it was sunk with the loss of one life.

As a result, shipping is taking the long route around Africa and this increases the cost and time of freight arriving in Australia from Europe.



Videos show multiple Houthi attacks and explosions that sunk Evalend ship

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Bundaberg strawberries cont. from page 1

Following mulching of cover crops into the loamy soils, predominantly strawberry plugs and some runners are planted and then fertigated via dripline, initially with MAP and Urea.

Foliar nutrition is then applied once a week, together with insecticide particularly for control of mites.

After about four weeks, Diem concentrates on fertigating the strawberries with Poly-Feed, a popularly used fertiliser from Haifa Australia that they source from their local Nutrien store.

"Once the leaves start to establish, we begin using the Poly-Feed in small amounts for the first couple of weeks and then we increase it from when plants start pushing buds. Every week we will apply about half a gram per plant," he said.

Available in multiple formulations to suit numerous crops, Poly-Feed is a high quality, fully water-soluble fertiliser and provides complete, balanced plant nutrition for soil and soilless crops.

In addition to supplying nitrogen, phosphorus and potassium, the formulations are enriched with high concentrations of micronutrients including iron, manganese, boron, zinc, copper and

molybdenum, and they can be applied with water of varied quality.

"We've been using the Poly-Feed for about the last 10 years," Diem said.

"We've tried other fertilisers as well, but they are not as good and we had compatibility issues with other products.

"The plants take up the Poly-Feed really well and we can see this on our sap tests – everything is in balance. Elements like iron and zinc should all be on par or under by just a bit.

"Poly-Feed has got everything you need and it can balance everything in the plants correctly."

In addition to plant sap testing, the Chhays test the water used from dams on the property and sourced from the Burnett River.

"We monitor everything, including pH and the EC, which you don't want to get too high. We also want to keep an eye on that nutrient balance and identify if anything might be lacking," Diem said.

Click for further info

 [Poly-Feed](#)

Vale **Vince Mirco**

THE Haifa Australia team extends its condolences to the Mirco families and wider horticulture and agriculture industry in Western Australia following the recent passing of Vince Mirco.

Vince and his late brother, Peter, were the founders of Mirco Bros, which grew into a thriving family enterprise across a number of locations in the State, supporting the needs of market farmers, backyard gardeners and many others.

Mirco Bros became an industry icon as one of the most trusted names in agriculture and horticulture in WA, and the brothers' legacy was continued by their sons, Martin, Michael and Johnny.

Rest in peace, Vince.



New Northern Agronomist returning to his roots

'Jack of all horticulture', Malcolm Otto, is enjoying his new role with Haifa Australia.

HIGHLY experienced horticulture agronomist and agribusiness manager Malcolm Otto has joined the Haifa Australia team.

Malcolm has taken over the role of Northern Sales Agronomist with the company from Peter Anderson, who has decided to retire from the business after many years supporting the northern industry and wider horticulture areas around the country.

The new role continues a return to helping industry and growers achieve improved crop production and quality for Malcolm, who was originally introduced to fruit and vegetable growing on a family farming operation in the Lockyer Valley in Queensland.

After later gaining a horticulture diploma from University of Queensland's Gatton campus, as well as certificates in horticulture and viticulture, Malcolm has since worn many hats in the industry across various regions, building a strong history of experience.

Roles in recent years have included fertiliser project management and agronomy, as well as management of retail sales of

agricultural chemicals, fertilisers and other rural supplies.

Malcolm has also spent time with corporate growing enterprises spanning from Northern New South Wales to North Queensland, working with various crops including potatoes, broccoli, beans and corn. He has been responsible for continuous business improvement and supply chain management, taking in growing and agronomy activities through to processing operations and sales.

Malcolm also gained experience in nurseries in the Gatton region, spent close to a decade in the almond and pistachio industry in southern Australia and has worked at the head office of one of the country's leading pastoral houses.

Fortunately, his career path has crossed most horticulture crops and from his base in Bundaberg, he is now looking forward to wearing the Haifa hat and supporting industries through NNSW, Queensland and across to the Northern Territory.

"I am familiar and have used a lot of Haifa fertilisers in the growing operations I have been involved with, so it should be a smooth transition," Malcolm said.

"The company has such a strong, well established brand with a good reputation and I'm excited to now be involved with the business and supporting retailers, industry advisers and growers."

He already has met with many stakeholders across northern Australia and will be flying the Haifa flag at industry conferences throughout the year.

Trial work has been another strong feature of Malcolm's career and he is looking forward to coordinating demonstration trials with some of Haifa's latest fertiliser products, including its new micronutrient and biostimulant ranges.

"Having these new ranges become available under the Haifa brand is already a good sign for their effectiveness, and, as is the standard with Haifa fertilisers, their complete composition is listed on the product labels."

"Haifa has long taken the approach to detail the components of its products that help stimulate crop growth and development, which is important," Malcolm said.

Haifa Australia Managing Director Trevor Dennis welcomed Malcolm to his new role and said the company was pleased his strong experience would follow in the footsteps of his predecessor, Peter Anderson.

'The Voice' of Haifa Australia

Jason Teng is notching 14 years with Haifa Australia and has become a cornerstone of the business



IT'S not quite the voice behind the golden microphone, but Jason Teng's dulcet tones are typically what most will hear when they ring into the Haifa Australia office in Melbourne.

And while he may be a few years short of being offered a golden handset, Jason will chalk-up some 14 years in the role in coming months.

Officially Haifa Australia's Logistics and Customer Service Coordinator, Jason is that and plenty more, lending his IT skills to solve issues that frustrate the majority of us on numerous occasions and being the linchpin to completing many company tasks.

Attending to customer calls and emails, procurement plans and order entry, tracking and status reports are all in a day's work for Jason.

He also manages product collections from Haifa's warehouses in Brisbane, Melbourne and Adelaide, as well as shipping from Haifa's Israel facilities

and third-party suppliers, including direct into customer warehouses.

Armed with a Bachelor of Business in Transport and Logistics Management, Jason worked with one of the biggest logistics and supply chain solutions companies in the world, DB Schenker, prior to joining Haifa.

Jason's logistics and process management skills were earlier developed at Emerson, focusing particularly on the use of measurement instrumentation to assist business manufacturing systems.

Combine this with a stint in the telecommunications industry at Ericsson and with the GSM network retraction at Telstra and Vodafone, and then at Aastra Telecom, and it's not hard to understand how he can come to the aid of the Haifa Australia team – often!

One thing he did notice quickly was the big change in logistics when entering the agriculture industry with Haifa Australia.

Jason was predominantly coordinating

air freight earlier, whereas it has since been containers and sea freight. Hence the time frames have changed a little too, from less than a month previously to up to six months with fertilisers.

The Melburnian is happy to play his strategic role in the Haifa Australia machine however, and away from work he is kept busy with his family, including two young daughters honing their karate skills. Road and gravel bikes also get a workout and family movie nights are a favourite – of course in a plush home theatre with projector and surround sound speaker system purring at optimum performance.

Probe into potato nutrition

HAIFA Australia is constantly looking to optimise the use of its products with growers and more recently this has focused on applications of its controlled release fertilisers in potato crops.

Southern Agronomist Sheri Robinson has been working closely with Elders teams at Ballarat in Victoria and at Mount Gambier and Barmera in South Australia, conducting local trials with the fertilisers across different soils and irrigation systems. She is pictured updating the Mount Gambier team and local growers on the treatments in the trials, which are being conducted with seed potato growers, and their progress so far.





Micronutrient strategy growing 'best ever' trees in Sunraysia

Sunraysia citrus grower Glen Goldup, Nangiloc and Colignan, pictured discussing micronutrient nutrition with Carlo Niutta, Nangiloc Ag Supplies, and Sheri Robinson, Haifa Australia. The family switched to using Haifa's micronutrients this season and have observed excellent responses in their trees.

CITRUS growers always have a close eye on their trees to help achieve the perfect balance between crop yield and quality, and for the Goldup family in the Sunraysia, their trees were looking the best ever heading into winter.

Glen Goldup, like most growers, well recognises that many seasonal factors and different product applications can influence a crop, but one significant one he remembers changing for this season is around their use of micronutrients.

Glen and his wife, Kristi, grow mainly oranges, mandarins and lemons, plus some avocados, over their properties at Nangiloc and Colignan, which comprise about 80 hectares including some natural bushland.

Glen is the third generation in the business and some of their trees were

established around 1960, running through to just three to four years of age. Their citrus fruit is generally exported to China, the US and Japan, while the avocados are packed on the property and sold into Adelaide, Sydney and Melbourne, as well as to Malaysia and Hong Kong.

There is a close focus on nutrition, particularly to avoid any annoying handling and downtime issues. As a result, the Goldups have been careful to select quality fertilisers and have been long-term users of Haifa nutrients.

"We can buy a lot of fertiliser and there are some cheaper options out there, but some of the quality is terrible. Especially with some foliar products, they can be hard to mix and they go hard," Glen said.

"We use a lot of the Haifa Multi-K (GG) potassium nitrate, as well as other products including magnesium."

"It's a great, high quality product that just works – you see results within a week. It also mixes very well with other products, and the fact that it comes in the buckets makes it easy to handle – and easy for mixing."

Glen Goldup

Their strong quality focus also prompted the family to switch to using Haifa's micronutrients following the recent introduction of the company's range, sourced through local agent, Nangiloc Ag Supplies.

"We have used zinc and manganese more as a top-up, to keep things happy, and we have had great responses with the iron," Glen said.

The Goldups red loam soils sit at around 7pH and they selected the Haifa EDDHA iron chelate for fertigation out to their citrus trees and some of their avocados.

Haifa's EDDHA iron chelate offers 6 per cent iron, but, more importantly, it is the most stable in soils, with an ortho-ortho (stability) percentage of 5.2. Ortho-ortho of 4.8pc has generally been the highest level available in iron chelates, with many chelated products offering levels of 3-4pc.

The higher ortho-ortho level ensures more efficient use of the nutrient and improved production and quality, especially in high pH soils.

Haifa Australia Southern Agronomist Sheri Robinson said growers needed to first confirm they were using the correct iron chelate for their soil pH and then they needed to check the stability component to ensure they maximised plant production benefits and their return on investment.

"Ortho-ortho is the shape of the EDDHA and is the most stable form in soil, so growers need to check the ortho-ortho percentage of this chelate, rather than just the total iron percentage," Sheri said.

"There is widespread potential for growers to improve crop production and quality through better iron use efficiency according to their soil pH."

Glen said he was most impressed with applications of Haifa's EDDHA iron chelate across their properties.

"We used a lot of the Haifa iron and it was very good. It travels into the plant very quickly."

"If you have deficiencies, you see instant results."

He said they applied the EDDHA iron chelate in small quantities through their fertigation system from September.

"We decided to apply small amounts per hectare more often, and we could adjust the application to the needs of the trees."

"It also mixes very well with other products, and the fact that it comes in the buckets makes it easy to handle – and easy for mixing."

Carlo Niutta of Nangiloc Ag Supplies said Haifa's EDDHA iron was one of the highest chelated iron products available and its high ortho-ortho percentage was a key benefit for growers.

"It's a great, high quality product that just works – you see results within a week. As a package in the Haifa buckets, it's also an easy product to use," Carlo said.

Glen said while their citrus yields can fluctuate, they aimed to average

around 40 tonnes/ha of premium sized fruit (56-72mm) and they were anticipating an "extremely good" crop this season.

"It's about trying to keep things optimum all the time and it's looking good. You don't want to go to biannual bearing – you don't want double bins one year and not the next."

"It's a very heavy crop this year, the fruit size is very good and the quality is looking good – the skins are smoother. It's certainly better than last year, when it was wet and overcast and the fruit was smaller."

"We feel our trees looked the best they ever have going into winter – and the happier they are going into winter, the happier they are going into spring," he said.

[Click for further info](#)

[Haifa Micronutrients](#)



Sheri, Glen and Carlo inspect the development and quality of some of this season's avocados on the Goldup properties.

Spotlight on product labelling

THE call to adhere to correct fertiliser product labelling in Australia continues to ring out and is strongly backed by Haifa Australia.

Industry body Fertilizer Australia has been encouraging its members to remain attentive to the issue, aware that any future tightening of international supply chains could see products imported into Australia without correct labelling, particularly for packaged products.

"Products not labelled according to State fertiliser regulations and the Fertilizer Australia Description and Labelling code of practice pose problems," Fertilizer Australia said.

"They may lack sufficient information about matters such as nutrient content and form, contaminants and relevant warnings which is required to make informed decisions about product choice, use rates, application methods and timing. Unacceptable levels of impurities could result in food safety or environmental problems if products are applied inappropriately. Incorrect or no labelling is also a safety risk for those handling and storing the product."

Haifa Australia Managing Director Trevor Dennis said it was in the interests of all fertiliser suppliers "to ensure they had traceable product being used on the food we eat".



New nitrogen knowledge is 'berry good'

By Malcolm Otto

Northern Sales Agronomist, Haifa Australia

Haifa quality now available in micronutrients

Haifa Micro Fe-EDDHA (6% Fe)

Introducing the highest quality iron chelate with 5.2% ortho-ortho

Don't waste time and money

Choose the correct iron chelate for your soil pH and carefully check its analysis



Strong new option for soluble chelates

Haifa, renowned for supplying the highest quality water soluble fertilisers, is now offering the highest quality chelated micronutrients. This includes chelates with the highest stability, such as EDDHA iron with the strongest holding ability. Haifa also can supply specific micronutrient blends compatible with a wide range of fertilisers.



HAIFA Group has agronomists and researchers located around the world undertaking a range of projects at its various sites. In Mexico, there has been some interesting work conducted into nitrogen use in blueberries. However, let's first take the opportunity to understand a little about nitrogen.

There are 16 elements considered essential nutrients for plants. These are carbon (C), oxygen (O), hydrogen (H), nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), sulfur (S), iron (Fe), manganese (Mn), zinc (Zn), copper (Cu), boron (B), molybdenum (Mo) and chlorine (Cl).

Plants absorb carbon and oxygen from the air through their leaves, as carbon dioxide (CO₂). In the photosynthesis process, they transform carbon dioxide and water into hydrogen, carbon and oxygen. All other nutrients are absorbed through their root system.

Nitrogen is unique, as it can be absorbed either as an anion (NO₃⁻) or a cation (NH₄⁺). The two nitrogen forms are very different in their metabolism within the plant and in their effect on the root system environment.

Plants absorb nutrients in different rates throughout their development cycle. Generally, uptake rate is lower at the beginning of the growth cycle, increases during fruit development and drops just before harvest. Furthermore, uptake rates of individual nutrients vary along the growth cycle. For example, plants require more nitrogen during the establishment and vegetative growth stages, while potassium is required in greater amounts during the fruit-set period.

Not all nutrients that are present in soil are available for plants. In fact, most of the nutrients in soil are locked up in minerals or in organic matter and only a small fraction becomes available for

plant uptake. Plant roots can absorb nutrients only from aqueous solutions. Therefore, in order for a plant nutrient to become available to the plant, it must first be "delivered" into the soil solution.

Nitrogen is abundant in the atmosphere and comprises about 78% of its content. Nitrogen is also a constituent of organic matter in the soil. However, atmospheric and organic nitrogen cannot be directly used by plants. For plants to absorb nitrogen, it must be first converted into ammonium (NH₄⁺) and/or nitrate (NO₃⁻), which are the forms that are available for plant uptake.

How does nitrogen become available to plants? The processes in which nitrogen is converted to available forms are fixation, decomposition, mineralisation and nitrification.

Fixation - Atmospheric nitrogen is absorbed by nitrogen-fixing soil

Plants absorb nutrients in different rates throughout their development cycle. Generally, uptake rate is lower at the beginning of the growth cycle, increases during fruit development and drops just before harvest.



► bacteria that convert the nitrogen into ammonia, using an enzyme called nitrogenase. The ammonia is then converted to ammonium (NH₄), which can be used by plants.

Decomposition and mineralisation

are biological processes carried out by soil microorganisms, in which organic nitrogen is converted into inorganic form – ammonia and ammonium. The process and its rate are affected by soil temperature and moisture. Warm soil temperatures (20-35°C) and moist, but aerated soils favour decomposition and mineralisation.

Nitrification - Under aerobic condition and warm temperatures, ammonium is further oxidised to nitrate (NO₃) in a process called nitrification. The processes that cause nitrogen losses from soil are leaching, denitrification and volatilisation.

Denitrification is an anaerobic process in which bacteria reduce nitrate to nitrogen gases, N₂O and N₂, that are lost to the atmosphere. This process occurs mainly in oversaturated soils.

Leaching – The nitrate form (NO₃⁻) of nitrogen carries a negative charge. Therefore, it does not bind to soil particles, but rather moves with soil water. When irrigation water reaches below the root zone of the plant, nitrogen might leach and become unavailable for the crop. In addition, excess nitrogen and excess irrigation may cause severe environmental impact, as

nitrate might reach groundwater.

Volatilisation – Under certain soil conditions, surface-applied urea, manure and other ammonium-forming fertilisers convert into ammonia gas (NH₃) and volatilise. Soil conditions that increase volatilisation include wet soils, high soil pH and increased soil temperature.

Nitrogen uptake by plants

As mentioned above, plants absorb nitrogen mainly as ammonium and nitrate. A mixture of both forms is usually beneficial. These two nitrogen forms differ in their metabolism in the plant, in which they are converted to amino acid. Ammonium is metabolised in the roots and requires more oxygen, while the metabolism of nitrate takes place in the leaves.

In addition, the uptake of ammonium and nitrate affects the root environment and uptake of other nutrients differently. For example, chlorides compete with nitrate on uptake, since both carry a negative charge. In the same way, potassium and other positively charged nutrients compete with ammonium. Nitrogen deficiency and excess nitrogen-deficient plants exhibit poor growth. Older leaves become pale green and smaller, as a result of reduced chlorophyll content.

At a more advanced stage of the deficiency, the entire plant becomes yellow. Excess of nitrogen promotes excessive vegetative growth, while flowering and fruit-set may delay. This results in decreased yield.

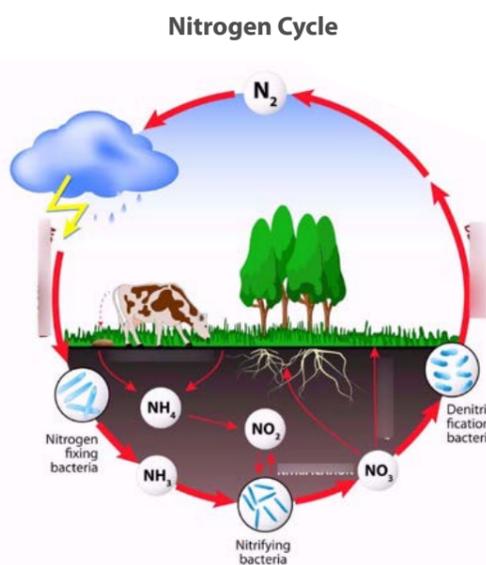
Nitrogen fertiliser sources applied in agriculture include both mineral fertilisers as well as organic fertilisers.

Mineral nitrogen fertilisers

Nitrate is a very mobile form of nitrogen. It moves freely through substrate, and, because of this, can be easily manipulated in growing by leaching out excess. In dry soils, nitrates rise to the surface.

Ammonia and Ammonium (NH₄ and NH₃)

Ammonia is a readily available source of nitrogen. It attaches readily to organic matter and is not easily leached. Typically, ammonia-based fertilisers are acidic.



There is a high chance plants can incur ammonia toxicity. Ammonia can rapidly evaporate into the atmosphere, so injecting under surfaces is necessary. In most soils, intrafraction converts ammonia to nitrates. As discussed, nitrates are mobile and can be leached out. Ammonia nitrogen availability is reduced in cooler weather.

Urea

Urea nitrogen and ammonia nitrogen are almost identical on how the plant responds and utilises nitrogen. The difference occurs before the urea converts to ammonia. Urea can be leached if it converts quick enough to ammonia form. This normally only takes two to four days.

Blueberry work with nitrogen

Dr Prometeo Sánchez García, an expert in berries and President of the Mexican Society of Plant Nutrition, has done preliminary replicated trials in blueberries with different blends of nitrogen. It has produced some surprising results, indicating nitrates do have a place in growing substrate blueberries and that it's about timing and balance.

More work is being carried out, so watch this space.

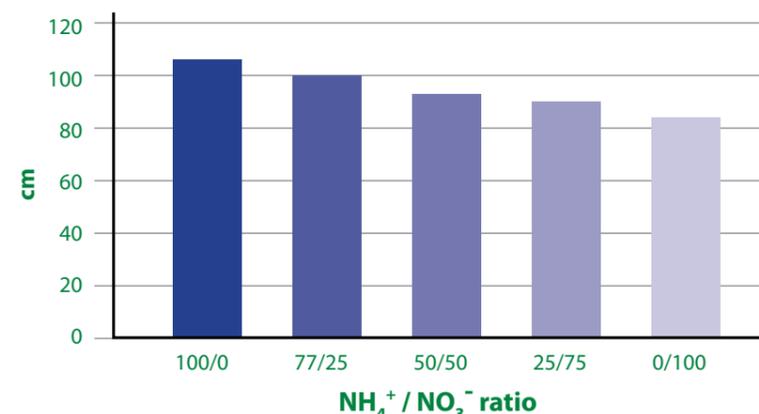
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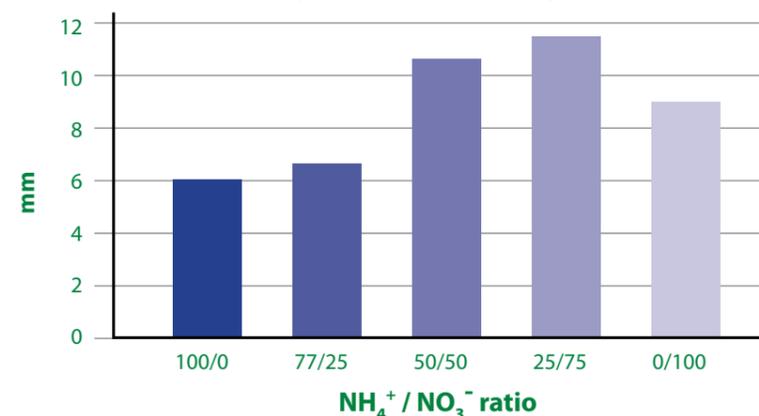
Graduate College in Agricultural Sciences Plant Nutrition, Edafology, Montecillos Campus Texcoco, State of Mexico.

Author and co-author of 120 articles in national and international journals, as well as six manuals and books.

Effect of ammonium/nitrate ratio on height of blueberry – Biloxi variety (90- DAT)



Effect of ammonium/nitrate ratio on diameter of blueberry stems – Biloxi variety (90- DAT)



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Haifa has pioneered the use of potassium nitrate since the 1960s and steadfastly remains the leading source of the highest quality today. Entirely used by crops, with no residual remaining in soils or groundwater, Haifa's potassium nitrate fertilisers provide application efficiencies and reduce the effects of chloride and sodium whilst enhancing crop quality and yields.

As the world's largest and only potassium nitrate supplier with an Australian office, growers can have confidence in their Haifa fertiliser applications and the support of a local team – **that is for certain!**



YOUR HAIFA AUSTRALIA TEAM

Trevor Dennis <i>Managing Director</i>	trevor.dennis@haifa-group.com	0400 119 852
Sheri Robinson <i>Southern Sales Agronomist</i>	sheri.robinson@haifa-group.com	0428 686 264
Malcolm Otto <i>Northern Sales Agronomist</i>	malcolm.otto@haifa-group.com	0418 597 029
Jason Teng <i>Customer Service/Logistics</i>	jason.teng@haifa-group.com	0488 036 528