



Medicinal cannabis growth sparks ag industry

With more countries now legalising medicinal cannabis, including nearby Thailand, export markets also are set to drive industry development in Australia.

EXPECTED rapid growth in the medicinal cannabis industry in Australia is sparking a flurry of activity in sectors of the local agricultural industry.

Last year there was a huge jump in approvals for medical cannabis use, numbering about 2500, and most of the product in Australia is imported. The drug is only available from approved

doctors via the Special Access Scheme.

Olivia Newton-John, who battled breast cancer, is the latest high profile Australian calling for improved patient access to medicinal cannabis.

With more countries now legalising the drug, including nearby Thailand, export markets also are set to drive industry development in Australia.

The local industry only needs to look to Canada, where demand has been outstripping supply since the authorisation of medicinal cannabis production to licensed growers from 2014. Recreational use of the drug also was legalised last October.

One of the pioneers of Canada's medicinal cannabis production,

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Expert encourages banana growers to stick with Cavendish



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South African potato and onion grower sees continued yield improvements with Multicote™

Potassium nitrate is the largest ingredient in water soluble fertiliser and the Haifa product is excellent for Master Plant-Prod Inc (MPPI)'s cannabis range because it is especially pure.

Doreen Andrea, General Manager, Master Plant-Prod Inc

supporting licensed growers, has been Ontario-based plant nutrition company, Master Plant-Prod Inc (MPPI).

Marketing products worldwide under its Plant-Prod brand name, the company has been assisting growing enterprises to achieve yields four to five times higher than previous basement-grown crops – and with significantly less fertiliser.

MPPI is a subsidiary of Haifa Group, which sources raw material from the Dead Sea for the manufacture of some of the world's highest grade potassium nitrate.

Originally established in 1945, MPPI also supplies extremely high quality water soluble fertilisers for drip irrigation of flower and vegetable crops throughout Canada and the US, and to a further 35 countries across the globe.

Doreen Andrea, who has been with the

company the past 32 years, including the last six as its General Manager, said potassium nitrate was the largest ingredient in water soluble fertiliser and the Haifa product was excellent for its cannabis range because it was especially pure.

"We have been sourcing from Haifa Group almost as long as I have been with the company," Doreen said.

"Haifa's potassium nitrate is very low in sodium, which has become more and more important in the greenhouse industry due to the use of recycled water."

She said various growers were previously using fertiliser products containing chloride and sulphate, which were not healthy for crops.

"Solubility is also critical and irrigation technicians who have had to clean out fertigation systems have told various growers they are using the wrong fertiliser."

MPPI's Plant-Prod MJ™ range of cannabis fertilisers is scientifically optimised to deliver exactly what plants need and, importantly, is consistent with every batch, allowing for better control of nutritional feeding.

"As the market has developed, we have offered higher-end fertiliser solutions that provide for better control," Doreen said.



"We also have more micronutrients and three chelating agents, and, with our long-term know-how, we have helped growers to tweak programs in order to get more buds."

In addition to Doreen, the Plant Manager at MPPI has been with the company for 28 years and the Agronomist, who holds a Master of Science degree in Agriculture, for more than 25 years.

The company's sales to the medicinal cannabis industry have grown exponentially, including supply to the largest cannabis growing group in the world.

Doreen said the standards for cannabis growers to follow in Canada, essentially behaving like pharmaceutical companies, were being used as a template in different parts of the world.

"In order for growers to be licensed, they have to send buds for testing, looking at factors such as moulds, pesticides, fungicides and heavy metals – and they have to be under detectable limits."

"Similarly, we also carry-out testing of our products in-house and then go out to external labs for full analysis, and we now have certificates of analysis, providing traceability for every batch – it's what licensed growers want."

"Cannabis growers have a very low tolerance for heavy metals and other contaminants in their fertilisers. MPPI vets all materials to ensure highest purity."

"We have been audited by cannabis companies and we have passed every audit. Once they see our facility, they are convinced."

Doreen said Haifa Group, as a worldwide company, provided valuable assistance with MPPI's testing, while it also provided benefits for sourcing products like chelates from larger vendors.

"We represent only a small portion when it comes to chelates, whereas Haifa Group is huge – and they have a whole department for sourcing."

For further information about MPPI and the Plant-Prod MJ range for medicinal cannabis production, Haifa Australia can be contacted on (03) 9583 4691.

Doreen Andrea, General Manager of Canadian plant nutrition company, Master Plant-Prod Inc (MPPI), says it has been assisting medicinal cannabis growing enterprises to achieve yields four to five times higher than previous basement-grown crops – and with significantly less fertiliser.

Global strength delivers leading nutrient solutions



By Trevor Dennis
Managing Director, Haifa Australia

WORKING for an international fertiliser company for 11 years has presented some challenges.

There can be some difficult times, but these are far out-weighted by the interaction and learning that occurs across the globe.

Haifa has 13 other offices around the world, in addition to our office in Australia. Each has its unique opportunities and, together, the Haifa Group "shares the knowledge".

The Australian office recently launched a number of products suited to high quality horticulture and greenhouse production. These innovative products clearly show that not all fertilisers are the same.

GrowClean™ and VitaPhos-K™, which have been sold by our European office for years, offer unique properties that clean irrigation systems whilst being very efficient sources of phosphorus and potassium. This, coupled with our Multi-K™ Recipro product, the lowest sodium potassium nitrate on the market, offers leading edge solutions to our Australian growers.

In addition to the low sodium basket, we now have Haifa Cal™ Prime, a calcium nitrate that is low in sodium as well as ammonia, a key requirement of modern, hi-tech greenhouse systems.

The Australian Haifa team is always looking to our international colleagues and what they are working on. We are always seeking new and innovative ways to provide the nutrients our crops need – we call this "Pioneering the Future".

Not only do we look outwardly, but we also show the way. Haifa recently launched the new Junior range of controlled release fertiliser (CRF). The key concept of Junior is to provide a unique CRF blend when planting trees. We have been doing this for the past seven years in Australia. Our unique forestry blend has become the industry standard for planting eucalyptus seedlings.

Ultimately, this illustrates that when you buy Haifa, you are buying global experience. Fertiliser products that are tested in more than 100 countries with every crop imaginable. We are not just a fertiliser company – we are a global nutrition company helping to feed the world.

Click for further info

 [GrowClean](#)

 [VitaPhos](#)

 [Multi-K Recipro](#)



GrowClean™ and VitaPhos-K™ offer unique properties that clean irrigation systems whilst being very efficient sources of phosphorus and potassium.

Banana growers encouraged to stick with Cavendish



◀ North Queensland banana grower Peter Inderbitzen, Dr Eli Khayat and Haifa Agronomist Peter Anderson discuss banana varieties in the Swiss Farms plantation at Lakeland.

ISRAELI agricultural biotechnology company, Rahan Meristem, the world's leading banana and plantain breeding and tissue culture company, has encouraged Australian growers to stick with Cavendish banana cultivars for their future production.

Sponsored by Haifa Australia for the local industry, the company's Scientific Director, Dr Eli Khayat, earlier this year visited growers and spoke at the Australian Banana Industry Congress held on the Gold Coast.

Dr Khayat said the Australian industry, like most others around the world, was largely based on Cavendish

and it would be wise to address any challenges whilst remaining within the Cavendish group.

"There is good science work going on in Australia and the world to preserve Cavendish, as well as for developing Cavendish-derived varieties," Dr Khayat said.

"In scientific institutions it is legitimate to look at other options. The commercial industry should focus on solving problems in the Cavendish domain.

"Especially in relation to TR4 (Panama Tropical Race 4), there are very promising technologies that, in reality,

will solve the problem.

"It is only a matter of time before resistant varieties come to market and replace susceptible varieties. So hang on to what you have, because help is on the way.

"Everybody is concerned about TR4 and fortunately there are 400 resistant lines being trialled in the Philippines. They have been tested for resistance in a contaminated field and already have successfully passed the first cycle of fruit and are in the process of developing to the second cycle, so it's very exciting and hopefully it will solve the problem."

He also recognised the problems caused by storms and strong winds in Australia, particularly in North Queensland, where the dwarf variety, Adi, a second generation after Grand Nain, is quite resistant to winds and highly suited.

"There are two lines, one taller and one smaller, and the bunch is excellent."

"Some adjustment needs to happen with the nutrition because a large portion of the plant's carbon is directed to the fruit, so it has to be fed accordingly. It needs higher levels of potassium nitrate.

Yield increase

"It also has to be managed differently to get the full benefits. The variety is quick cycling, but de-suckering has to be done in a precise fashion. Over a period of three years, growers will get an extra cycle of fruit. It's an addition of 18 per cent to yield without adding any inputs."

Dr Khayat said growers often asked him which line out of eight to 12 Cavendish genotypes would best suit their plantation and he had a standard response: "Choose one of the clones, but perform an experiment with at least four cultivars that are likely to give you the best result. Grow each of them over half a hectare for three years and measure one parameter only – revenue."

"Don't worry about the packing, brix shape or yield. The variety of choice is the one that gives you the most revenue."

He said in the future, further gains would be made from the use of electro-optical technology and computation. We are already using "phenomic tools" for breeding and precision growing.

"By identifying phenotypes in the field, we will be able to give information to growers that can help determine the most optimal stage for harvesting the fruit, as well as other parameters when dealing with nutrition, irrigation and plant stresses.

"We are also using tools to shorten the time in breeding programs. Previously, varieties could take five to 15 years to develop. We are now using this technology to predict a variety at a young stage as plants come out of tissue culture, so we don't waste five to 15 years on selection."

However, Dr Khayat cautioned local growers about using corms to propagate banana plants due to the method being conducive to diseases and resulting in non-uniform production.

"Tissue culture is a very robust tool. The plants are sterile and the technique allows selection of elite

clones that can be mass multiplied in a short period. So make the transition from corm propagation to tissue culture propagation because it will provide great advantages, especially against TR4."

Industry support

Haifa Australia Managing Director Trevor Dennis said it was a great opportunity for the company to extend its support to the local industry and growers by bringing Dr Khayat to the country to discuss the latest in breeding and varieties, including with resistance to TR4.

Dr Khayat said considering both Rahan Meristem and Haifa supported the same grower, the ongoing interaction between the companies, bringing genetics and nutrition together, was highly effective.

"Another benefit of the collaboration is the dispensing of technology. We are working with Haifa in Israel, supplying plants and looking at the nutrition. It's wise to collaborate with each other and match the nutrition to the genetics," he said.

▼ Massimo Bianco, Queensland Department of Agriculture and Fisheries Centre for Wet Tropics Agriculture, with Dr Eli Khayat inspecting banana varieties.

KNOWLEDGE SHARING THAT WORKS FOR YOU



PLANT NUTRITION EXPERT SYSTEM. POWERED BY HAIFA

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- Incorporates local climate data, soil analysis, irrigation water quality and more
- Design customised Nutrigation™ programs
- Work with the most accurate plant nutrition program
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New crop boosting fertilisers launched



NEW, low sodium fertilisers that have been improving horticultural crop production throughout Europe over the past three years are now arriving in Australia.

Specialist fertiliser manufacturer, Haifa, has recently released three new, low sodium fertilisers to the local market offering high quality and some unique benefits for growers.

Haifa specialist from Holland, Ronald Valke, was in Australia earlier this year talking with growers at the Protected Cropping Australia conference in Queensland and through various production areas about the company's new products, which include Haifa Cal™ Prime, Multi-K™ Recol and Haifa VitaPhos-K™.

Ronald said low sodium and chloride levels were critical to optimum crop production and Haifa had become a world leader in reduced sodium

fertilisers.

"European growers have been using Cal Prime for three years now with fantastic results," Ronald said.

"The lower sodium leads to a better solution and better plant growth, which equals better yields."

Haifa Cal Prime, ideally suited for high value glasshouse production and crops, contains more nitrogen and calcium than alternate calcium nitrate products available in the local market.

"It offers the highest analysis and quality calcium nitrate available in Australia, while also having very low ammonium and sodium levels," said Haifa Australia Managing Director Trevor Dennis.

"Its high concentration means benefits for growers, allowing applications to be significantly reduced and savings to be made in labour and energy, as well as providing for less handling and transport."

Multi-K Recol, which specifically suits greenhouse production and high value crops, is another low salt product, offering a particularly pure form of potassium nitrate with very low sodium levels.

"Multi-K Recol is pivotal in reducing the sodium level of the nutrient solution, allowing it to be reused many times – not only saving money on fertiliser, but also helping to save water," Trevor said.

He said excellent solubility with Haifa Cal Prime and Multi-K Recol also meant they were highly suitable for Nutrigation™ or foliar spray application in crops.

Uniquely efficient

Haifa VitaPhos-K, containing phosphorus in the form of soluble polyphosphates rather than the phosphate ion, is designed to keep the phosphorus in the solution, making it available to plants over time.

"It offers a uniquely efficient form of phosphate that also provides a cleaning action on irrigation lines," Trevor said.

He said the new fertilisers demonstrated Haifa was leading the fight against negative salts in crop production.

"The company's products have long been recognised for their quality, ensuring they are easy to use and the nutrients are available to plants."

[Click for further info](#)

[Cal Prime](#)

[VitaPhos](#)

[Multi-K Recol](#)

European growers have been using Haifa Cal Prime for three years now with fantastic results. The lower sodium leads to a better solution and better plant growth, which equals better yields.

HAIFA SPECIALIST RONALD VALKE, HOLLAND

Ronald Valke, Haifa specialist from Holland, pictured addressing the Protected Cropping Australia conference in Queensland earlier this year, says the company's new, reduced sodium fertilisers allow a better solution and plant growth, resulting in improved yields.

FROM SOUTH AFRICA...

Steyn Marais
Location: Ceres
Crops: Potato and onion



"SINCE our first potato planting in 2008, we saw yield improvements. With further refinement in product composition, we were able to custom fit the Multicote™ product to suit our unique production practises and growing conditions.

For four consecutive years we experienced sustained crop yield improvements compared with our conventional fertiliser programs.

Potato and onion crops proved to be more disease resistant in-field. Post-harvest, quality was also found to be better compared with that from conventionally-fertilised fields.

Band placement of the Multicote close to the tubers at planting offers significant savings in cost and management time.

There's no more yellowing of plants due to nutrient leaching from the root zone.

Multicote is a dynamic product that has proved its adaptability to satisfy the challenges of a modern farming enterprise."

[Click for further info](#)



Haifa Cal™ Prime Concentrated Calcium Nitrate

+ More calcium + More nitrogen + Near zero ammonium

The new prime grade of calcium nitrate from Haifa offers multiple benefits for growers who seek the most precise results in challenging growth conditions. With high concentration and near zero ammonium level, this new product sets **new standards of calcium nitrate.**



Ideal for soilless grown crops and hydroponics



Recommended for zones of high sun irradiation



Extra convenience in handling



100% soluble for excellent Nutrigation™, foliar application



Introducing Multi-K™ Recirculation

LOWER SODIUM = HEALTHIER CROPS

Specially-developed for high drain water recycling systems, Haifa's new Multi-K™ Recirculation fertiliser product contains up to 90% less sodium than other potassium nitrate fertilisers. Multi-K™ Recirculation helps to reduce the sodium level in the nutrient solution, allowing it to be reused many times, saving money on water and fertiliser, and ensuring healthier crops. Multi-K™ Recirculation delivers precise plant nutrition with only essential nutrients.



Free of sodium and chloride



Reduces drain water salting



Ideal for greenhouses, as used in Europe



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