



GETTING THROUGH WINTER AND WAITING FOR THE WARMER WEATHER.



Welcome to our winter newsletter.

No doubt you are hunkered down and waiting for the warmer weather to return. For now though, getting through the winter with healthy hives is important, so we are focusing on AgriSea Bee Nutrition for optimal hive health during the coming winter months.

So a good time to think of the bee's health, not saying it will prevent wasp invasions or treat varroa, but a hive that has been fed Bee Nutrition has the chance of improving the health of the hive, healthy bees will keep the colony stronger, therefore giving them a better chance against the pests and diseases that give them a hard time.

It is important to remember that the team at AgriSea are here for you and here to help. Please feel free to reach out to our team for whatever reason - be it advice, product purchases, or a general catch up.

Clare, Tane and the mighty team at AgriSea.



ENSURE OPTIMAL HIVE HEALTH OVER WINTER WITH AGRISEA BEE NUTRITION.

The majority of beekeepers are catching up on the backlog of tasks and preparing for the new season.

The middle of winter is the perfect time to add AgriSea Bee Nutrition in with feed supplements to ensure optimal hive health as we head through winter and get ready for the next season.

During winter we recommend beekeepers add AgriSea Bee Nutrition at 30ml per L of sugar syrup. As soon as spring arrives, and focus turns to increasing brood productivity, ensure you continue to feed AgriSea Bee Nutrition at 30ml per L of sugar syrup for optimal health.



**WIN
A 750L DEVAN TANK**

See page 3 for details on how to **WIN**

FEEDBACK FROM OUR CUSTOMERS AND DISTRIBUTORS

John Edmonds update from Australia.

“In the past Australian mainland beekeepers have not had to feed their bees, but environmental changes have brought on the need for feeding. The addition of AgriSea Bee Nutrition is very easy and a safe way to improve the breeding and health of the bees.”

Prolonged droughts, lack of floral resources, and loss of forests from bushfires has resulted in a shortage of strong beehives for pollination of Australia's crops - especially almonds and blueberries. Also small Hive Beetle are breeding in the pollen supplements fed to the bees and this can be a problem. Feeding AgriSea with sugar syrup, in sugar cakes, or in water sprayed over the bees and combs is an easy way to get nutrition to our bees.

It is pleasing to see repeat orders from customers and larger volumes being purchased. Beekeepers can see the improvement in their beehive strength and I expect feeding AgriSea to the bees will become a normal part of our preparation for meeting pollination standards and queen breeding.

Lately orders have been coming in daily for AgriSea and I am sending orders into NSW. I expect greater sales this spring as more beekeepers learn about using AgriSea.”

Lyal Gilmour

Feeding just sugar syrup alone will not give the bees the amino acids, fats and minerals that are essential for their optimum health and brood development.

The natural ingredients in Agrisea's Bee Nutrition has definitely helped our colonies, with stronger hives, improving bee development and honey production.

While we will still have losses, like every beekeeper does, I feel we have given them a better chance with adding Bee Nutrition to any supplement feeding regime, and have also had a good success using it as a drench, spraying on to the bees on the combs during inspections, giving a quick energy boost to the bees.

It's our responsibility as beekeepers to care the best we can for our livestock, which in turn will ensure our passion for the bees and what they do for us to continues, and continues well.

HUNT AND GATHER BEE CO.

Star on Hyundai Country Calender.

AgriSea customers Hunt and Gather Bee Co. made their TV debut on episode 6 of Hyundai Country Calendar.

Rory and Hannah O'Brien are long standing customers who use AgriSea Bee Nutrition as a key tool in their business and have assisted us with some trial work. It was fantastic to see how the pair (and their adorable helpers) have grown their Raglan based business

into the family focused, sustainable, and local brand it is today.

Thank you, guys, you should be incredibly proud - and congratulations on the newest addition to the family!



Rory and Hannah O'Brien and family.

Tane with the team from Hunt & Gather Bee Co.

'CONGRATULATIONS TO OUR VERY OWN CLARE BRADLEY...

...for taking out the supreme award as the Rural Woman of the Year, more details in attached link.

Clare Bradley from pioneering seaweed company AgriSea has been named the supreme winner at the NZI Rural Women NZ Business Awards.

Bradley earlier won the award's Love of the Land category and said it was a good opportunity to celebrate rural businesses.

"I think people's remoteness is not a reason or an excuse anymore not to develop businesses.

"It was really great to be able to celebrate everyone's passions and achievements and the multiple hats we all wear as rural women."



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A 750L DEVAN TANK

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WIN

A 750L EASY TANK

proudly

supported by the team at Devan Tanks

Apiculture businesses use Devan Tanks for feed storage.

Tanks sizes range from 600L to 30,000L and are all made in New Zealand.



**6 MONTHS
DEFERRED
TERMS.**

T&C's apply



FEED PREFERENCE TRIAL

From the many years working with beekeepers, training academies such as PCTI, and research institutes including Plant and Food Research - AgriSea has learnt that, just like us, bees develop preferences for certain foods.

What we do know is that bees have a natural preference in the wild for seaweed (as often seen flying to beaches), but we had never actually trialled to see for ourselves. This prompted the question: how do we know if bees prefer AgriSea Bee Nutrition over other nutrition sources?

With this in mind, AgriSea ran a trial at eight different apiary sites to see how our product stacked up on the preference scale. At each site, in the dual feeders, hives were fed AgriSea and sugar syrup, alongside six different commercially available bee nutrition products. This recurred for three feeding rounds.

It was observed that in all instances the feed including AgriSea Bee Nutrition was consumed at the fastest rate.



Observations from this trial are not intended to discredit other competitors on the market, but to encourage our customers to set their own trials up and see the difference for themselves!

INCREASED HONEY PRODUCTION WITH AGRISEA BEE NUTRITION

You may remember back in 2017 when AgriSea received a Callaghan Innovation Grant for Plant and Food Research to investigate how our Bee Nutrition benefits bee health. The independently run trial provided a great snapshot of what our product benefits are and formed the basis of an internally run trial the following season.

AgriSea - alongside commercial beekeepers from Hunt and Gather Bee Co., Dansar Bees, and Pacific Coast Technical Institute - carried out a trial across three apiary sites in the Raglan, Paeroa, and Putaruru regions. The trial commenced last Autumn (April 2019) and ran right through until the end of the 2020 honey harvest, with beekeepers independently managing their hives and collecting data on a regular basis. AgriSea hives were fed in Autumn at 30 ml/L sugar syrup and control hives were fed sugar syrup only.

Results analysed to date show a consistently higher amount (%) of capped honey cells in the AgriSea hives across all sites. Furthermore, those AgriSea hives started capping honey earlier in the spring than the control hives. This was reflected in the increased honey yields taken off AgriSea fed hives with increased production ranging from 20 - 123%.

Colonies that had the late summer supplement feeding always came out of winter stronger than hives that had a good amount of honey stores and didn't require supplement feeding. A noticeable difference was the larger spring brood nests in the seaweed supplemented hives. These hives always went on to collect at least an extra box of honey due to having more foragers available.

"I have continued to use the AgriSea Bee Nutrition with the same consistent results every year."

Dan Martin Dansar Bees



"I have been using Agrisea Bee Nutrition for seven years. I started using the seaweed based product as I was looking for a source of amino acids to incorporate with my late summer and spring supplement feeding program."

APIMONDIA

It was a great privilege to attend and showcase our AgriSea Bee Nutrition at the 46th International Apicultural Congress (Apimondia) held in Montreal in September 2019.

In true kiwi style we shared space and resources with local New Zealand company Ceracell, we also had one of our large Australian distributors at the congress to talk with customers about the benefits our Bee Nutrition is providing Australian beekeepers in the varying climates and feeding regimes. AgriSea Bee Nutrition is also quickly being recognised as leading the way in providing essential nutrients and amino acids to help out bees in the Almond pollination market. And we look forward to sharing more detail as this comes out.

After Apimondia, Tane headed over to Los Angeles to visit Alisha Taff from Rock Front Ranch in Cuyama. Alisha has been a key-note speaker at the New Zealand Apiculture conference for the past few years. Alisha has a huge amount of knowledge and passion for the nourishment of bees and we are continuing to work with Alisha for USA development.

John Caron our US/CAN distributor from Pierco also joined our trip and we were able to see some experimental hives and understand how the feeding regime works with the feed buckets.



Soon after this meeting we sent a container load of product over to large bee keepers to support their operations - which has quickly sold out and is being restocked.

As well as being a great educational trip we managed to gather information from around the world - we look forward to continuing our journey of providing beekeepers with sustainable, organic, GMO free and effective nutrition.



WATCH OUR **NEW** SUSTAINABLE SEAS VIDEO

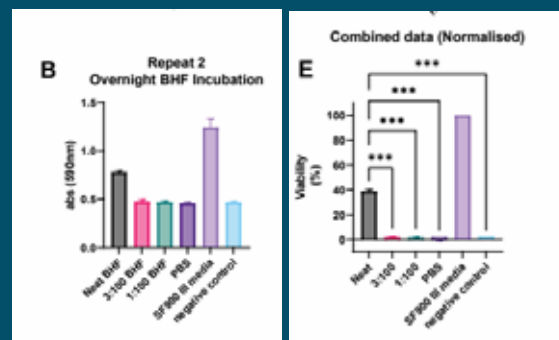
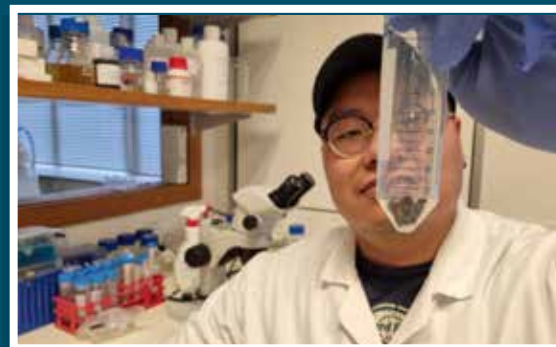
GOOGLE SEARCH "AGRISEA - YOUTUBE" TO VIEW
<https://www.youtube.com/watch?v=k7U5rcMBqzU>



Plant & Food Research Continues...

Bee health is an important and topical subject not only in New Zealand but globally given the impact honey bees have across agricultural, horticultural and economic settings. Among various pathogens and parasites are the honey bee-specific parasitic microsporidia *Nosema apis* and *Nosema cerenae*. Microsporidia are obligate intracellular parasites that were recently categorized as fungi (Keeling and Fast, 2002). The spores are inactive in the environment but proliferate in the gut cells of honey bees after ingestion. New spores are then excreted into the hive environment where other bees may ingest the spores, continuing the cycle (Gisder et al., 2011). The nosema disease (nosemosis), is often accompanied by dysentery in bees (Bailey, 1967) and there is evidence that nosemosis contributes to gradual colony collapse (Higes et al., 2009; Gisder et al., 2010; Botías et al., 2013; Cepero et al., 2014).

Dr. Aqfan Jamaluddin, a post-doctoral research fellow from the University of Auckland, has been investigating the efficacy of AgriSea Bee Nutrition in an in vitro cell culture system. In a separate preliminary study undertaken by Auckland University, we were able to show that when *Nosema* infected Sf9 cells (derived from *Spodoptera frugiperda*) were incubated with AgriSea Bee Health Formula (BHF), the cell viability was increased. This suggests that the BHF formulae contains nutrients and supplements capable of sustaining cell metabolism and thus results in better health and well-being of bees.



The above 2 studies have resulted in promising results for our BHF and research is ongoing to support our findings to date.

AGRISEA AND PACIFIC COAST TECHNICAL INSTITUTE

Over the past seven years we have partnered with PCTI on a number of projects including the Bees in Schools programme of which we have hives onsite for the school/adult students. AgriSea is also providing bee nutrition products and various industry and community education days.

Employers: Get Your Beekeepers Qualified

To achieve the New Zealand Certificate in Apiculture you need to successfully complete a programme through an approved provider. PCTI is an approved provider and can offer a few different options to get your staff qualified.

Qualifying Experienced Beekeepers

PCTI works with employers and their existing experienced beekeepers to agree on a plan to get them qualified. This will involve putting together an evidence portfolio using the routine tasks required to perform their jobs in your Apiary. We find that this process generally covers off the majority of the practical or skill based requirements and then we will identify any remaining areas of knowledge that may need training workshops and assessments to be delivered.

The combination of these processes will result in your existing staff, achieving the Certificate in Apiculture (Level 3).

We can offer this service right across New Zealand. Minimum numbers would apply.

Course Modules:

1. Hive Construction
2. Hive Management
3. Bee Behaviour
4. Trees for Bees
5. Harvesting
6. Shifting Bees
7. Disease Management
8. Chemical Handling



Pacific Coast
Technical Institute



For more information contact the team at Pacific Coast Technical Institute.

0508 287 246 | admin@pcti.co.nz



It's been a busy time for AgriSea but it's not until you start to take a look back you realise why time flies!

Land-based seaweed trial a nationwide first

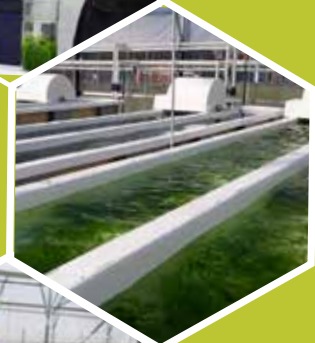
A land-based seaweed trial aiming to help restore our waterways is about to kick-off with Government investment beside the Firth of Thames wetland, Agriculture Minister Damien O'Connor said. AgriSea is working with the University of Waikato on a sea lettuce growing trial at Kopu marine precinct in the Coromandel. The seaweed will be used to soak up the nutrients that freshwater plants are currently unable to absorb. "This bioremediation project is using Kiwi ingenuity to see if the seaweed can act as a sponge, soaking up excess nitrogen, phosphorus and helping clean our waterways." Three ponds totalling 60 square metres will grow the locally present green seaweed species Ulva. "The project will grow the algae for 12 months, which will provide data from real-world ambient conditions," "If successful, this will be an environmentally-friendly way to improve water quality, create jobs in the science sector, revitalise our waterways and improve our on-land farming systems,"

Research Funded To Unlock Seaweed's Potential As New 'superfood'

It is far from a staple on most Kiwi dinner tables, but AgResearch scientists are aiming to unlock the potential of seaweed as a go-to food with proven health benefits. And they have enlisted the services of a world-class team to help them do it. The scientists are joining counterparts in Singapore in a project funded by New Zealand government, in the amount of \$3.3 million, alongside parallel funding from the Government of Singapore. The New Zealand funding is from the Catalyst Fund: Strategic – New Zealand-Singapore Future Foods Research Programme. The research, focused on the *Undaria pinnatifida* species of seaweed abundant in waters around New Zealand and Singapore, also involves partners the University of Otago, University of Auckland, A*STAR, AgriSea NZ, Ideas 2 Plate and AMiLi. "What we are aiming to do with this research is develop ways to cook or process the seaweed so that we have flavours and textures that appeal to people, but we also want to look at the health aspect. Seaweed proteins are typically less digestible than animal proteins, so we will be looking at in what form the seaweed can better deliver the nutrients to the person eating it. We'll also be looking at how the seaweed proteins interact with peoples' gut microbiome (the collection of microorganisms that live in the digestive tract). The first year of this three-year research project will focus on unlocking the nutritional value of seaweed, and towards the end of the second year the scientists expect to have developed a flavourful and nutritious seaweed prototype food.

Seaweed Gin & Vodka.

At AgriSea we are always looking outside the square and a number of years ago we teamed up with the amazing Southward distilling team and this is the result. Dry Gin with NZ seaweed and soon to be released Dry vodka, we aren't being biased but we think it's worth a try. And with the bumpy couple of years we all deserve a bit of a knees-up



Pollen Substitute trial conducted by Scientific Beekeeping. Alisha Taff, is a nutritionist, a farmer, a beekeeper and advisor to a number of large beekeeping operations in the USA that run significant numbers of hives. After making initial contact with Tane of AgriSea, at an Apiculture NZ conference in Rotorua in 2018 where she is often a keynote speaker, and being impressed by the analysis and natural form of AgriSea Bee Nutrition Alisha went on to develop a pollen patty and include AgriSea Bee Nutrition as an ingredient

The scientific beekeeping team contacted Alisha Taff with regard to a trial he was about to conduct comparing pollen substitutes and asked her if she would submit for inclusion in the trial her pollen sub formulation that she recommends to her clients. This is identified as the Homebrew patty and contains AgriSea Bee Nutrition as one of its ingredients. Alisha supported the inclusion in the trial. "Pretty much any artificial diet can be of benefit to the bees in the short term, but the real test is how it performs over the long term. I happen to live in a landscape that provides an extended dearth period (August through to mid-January), thus allowing me to really put diets to the test in free-flying colonies" The trial was run in California over 175 days, or 8 brood cycles, and included 144 colonies. For more information please see link <https://www.youtube.com/watch?v=wpeFqTMM-o>



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AND PROUDLY AVAILABLE FROM



All the best for the season ahead

From the MIGHTY team at AgriSea.

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