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The NEW ZEALAND BeeKeeper

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PRESIDENT'S REPORT

A TIME OF **TRANSITION ...**

Ricki Leahy, NBA President

As we probably all know, the NBA conducted a special postal vote during February, and the results clearly voted for the adoption of a new constitution and rules. As a result, from 1 April, NBA has rebranded and is now known as Apiculture New Zealand (ApiNZ). Consequently, we are now guided by the new constitution and its rules.

This new constitution was developed over the past year by a team of dedicated industry members who were independently appointed from those who had shown expressions of interest to undertake the task. This, of course, was the Interim AIGB (Apiculture Industry Governance Board). It's a funny sort of name perhaps, but that is what evolved from the start. In reality, both the Interim AIGB and its name have served their purpose well.

However, the work isn't finished yet.

We are now in a transition phase whereby Apiculture New Zealand must now move to elect its inaugural Board. The NBA and Federated Farmers Bees executive members are recognised as the only industry-elected membership body representatives. They have already been working together and meeting bi-monthly in a spirit of industry unification. The two executives are known as the Interim Joint Executive Council (JEC) and will probably meet face-to-face at least once (maybe twice) before the AGM, depending on the industry's requirements.

The agreed plan, therefore, is for the combination of both these executives to continue the responsibility of the association's governance duties during the two and a half months leading up to when the new ApiNZ Board is elected. The constitution reads that newly elected Board members take office on the Board from the conclusion of the AGM, which takes place on 22 June.

No groundbreaking decisions are intended to be made by the Interim JEC during this time. We recognise the importance of ensuring that future directions should be set by the elected Board.

It is very important that we build a strong membership base. It is important also for as many of us as possible to participate by taking a vote in the sectors with which we have chosen to affiliate.

Choosing sector representatives

Needless to say, nominations for sector representatives will require due consideration. It will be vital for us to focus on who will be the most suitable Board members to take us all forward. A process will be put in place whereby members will be able to read biographies of nominees to learn more about whom they may wish to elect as sector representatives.

We hope that some younger members will recognise the chance to stand for election as sector representatives on the Board. The whole industry will benefit if younger members take the opportunity to step up and contribute fresh, innovative ideas and bring their visions of the future to the Board.

We hope that some younger members will recognise the chance to stand for election as sector representatives on the Board.

Process for electing Board members

One of the key changes that have been adopted in the ApiNZ constitution is how the Board members are elected. Rather than being elected as a representative via a Ward system, the Board members are now voted on by the members of the sector that they are standing to represent. All sector members will have a full and equal say as to whom they choose to represent both themselves and their best interests on the Board.

Rather than being elected as a representative via a Ward system, the Board members are now voted on by the members of the sector that they are standing to represent.

ApiNZ's direction will be strongly influenced through the beekeeping and market sectors. A subtle difference—and indeed a true value—will now be found for many with that direct representation at the governance table via their sector Board representatives. In fact, any member with the support of 10 others may submit a notice of motion for debate at the AGM. All of these opportunities give ample opportunity for the grassroots of the association to be a driving force within the industry.

To my way of thinking, we need a special calibre of Board candidate to meet the expectations of a modern apiculture industry. They will need to positively adapt to the changes being made and work professionally together at all times to ensure our industry keeps pace with the ever-changing environment in which we operate our businesses. The Board needs that mix of skills and vision that will ensure all decisions will achieve the best outcomes for the future of our industry.

To my way of thinking, we need a special calibre of Board candidate to meet the expectations of a modern apiculture industry.

We especially need a Board that understands the necessity of ensuring the ongoing protection and good health of our livestock. After all, we are a primary industry that is centred on bees, the products they produce and the value that bees command as the primary pollinator on which so many other industries depend.

continued...

If you want to have your say on who you would like to represent you in your nominated sector on the Board, quite simply, you need to become a member and you need to vote.

The Board's tasks in the first instance will be to appoint an independent chairperson, develop or confirm its annual business plan, then appoint a CEO who, in turn, will appoint a management team suited to achieve that plan.

If you want to have your say on who you would like to represent you in your nominated sector on the Board, quite simply, you need to become a member and you need to vote. The outside cover of this journal is designed to be removed; it is your subscription application form.

The voting procedure is being professionally undertaken by electionz.com and will be via a preferential voting system. As an ApiNZ member, you will receive by e-mail all of the necessary information to peruse. And you will be given ample opportunity to make your decisions on all of the candidates standing for nomination.

It will be a big task in the first year to establish the new Board under the rules of the new constitution. But in years to come it will be far less arduous, as only three Board members are required to retire at the end of their term each year.

I really do feel for those of you who have had the dice fall unfavourably as far as the honey season is concerned. I just hope that you have managed to do something that has enabled you to at least keep your nose above water. It won't be long and the next season will roll on in.

Back to those bees. None of us probably quite know what happens inside the beehive when we unite a whole bunch of bees from here and there, because we tend to pop the lid on and leave them to it. But what we do know is that when we come back the next day, the bees are happily flying in and out, intent only with getting on with it. Happy beekeeping.

PUBLIC NOTICE: TRANSITION OF THE AFB PMP MANAGEMENT AGENCY

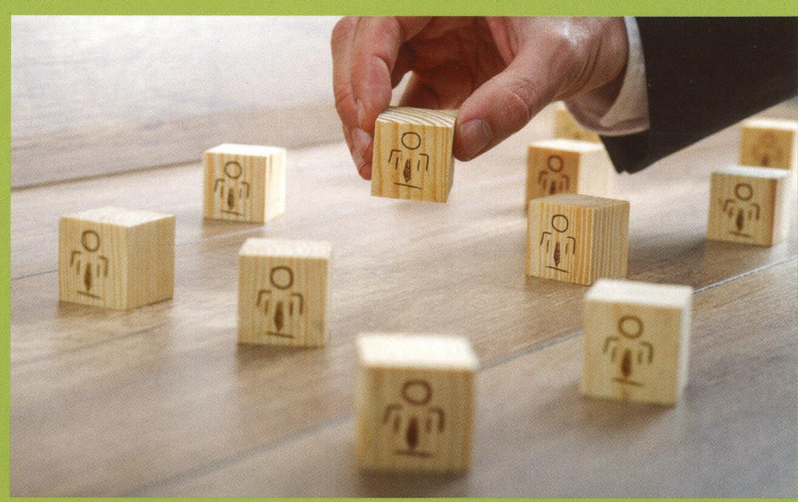
The National Beekeepers Association (NBA) is the Management Agency for the American Foulbrood Pest Management Plan (AFB PMP). The NBA has a statutory responsibility to implement the AFB PMP, which comprises a range of regulatory and educational programmes.

The NBA's constitution has been amended, and as of April 1, 2016, the organisation has become **Apiculture New Zealand.**

In light of this change, the Ministry for Primary Industries (MPI) has instructed that the Management Agency must also change from the NBA to Apiculture NZ. Apart from this transition, all other aspects of the AFB PMP will remain the same.

We are seeking your feedback on the Management Agency for the AFB PMP transitioning from the NBA to Apiculture NZ. Please email info@apinz.org.nz with your comments on the change of Management Agency by **5pm Friday 6 May, 2016.**

We will then write to Minister for Primary Industries, Nathan Guy, conveying your feedback. He will assess this and then be in a position to amend the AFB PMP to reflect the change outlined above.



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APICULTURE NEW ZEALAND NATIONAL CONFERENCE

NATIONAL CONFERENCE 2016

BEE BUSINESS—SCIENCE : HEALTH : TRADE

Sunday, Monday, Tuesday 19–21 June

Conference Steering Committee 2016

The Apiculture New Zealand National Conference will be held at the Energy Events Centre, on the shores of Lake Rotorua, starting at 8.30 am on 19 June. The focus of Conference 2016 will be on three important sectors of our industry: apiculture science, bee health and trade.

The Rotorua Energy Events Centre was selected because it is one of the few venues in the country that can host a large seminar of up to 900 delegates, and offers an excellent trade display arena. Rotorua has a range of accommodation options, all of which are within walking distance of the Conference Centre.

Key to the success of any conference is the calibre of speakers and the relevance of their seminar topics to your business. We are pleased to advise that we have secured a great selection of international and national speakers who will cover a range of relevant topics from the hive to the plate and beyond.

Running alongside the conference programme is an extensive trade and exhibition arena. This will showcase all that is new in our industry: a one-stop shop of information where you can view first-hand the latest in technology, plant and equipment. The sponsors and exhibitors have invested their time and money to make this possible; please support them and their products.

Our goal is to deliver an informative and valuable conference that will enable you to learn and to network with your industry associates, as well as creating an environment where everyone can have some fun. Your participation will make this a successful conference for all.

PROGRAMME

We have four respected overseas speakers, and a large number of New Zealand presenters.

Full programme details are available now on the conference website:
www.apicultureconference2016.co.nz

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The ApiNZ Research Focus Group has included an article on the next page of this journal detailing background on the speakers and the topics they will be covering. There is value for everyone.

Conference begins for all delegates on Sunday 19 June. We encourage you to register early, book your accommodation and nominate your workshop preference as soon as possible.

On Sunday night there will be a mix and mingle opportunity in the Grand Hall of the conference venue, followed by the traditional 'Sunday Roast' at the Sudima Hotel, if you so wish. Alternatively, there are some great restaurants within walking distance.

Monday night we 'swarm in' to the Trade Buzz Arena, to socialise with our sponsors and trade exhibitors. It will be a fantastic opportunity to catch up in a relaxed environment and enjoy time with friends and new associates. Following this function, free shuttles will be operating for your convenience to take delegates from the conference venue downtown to "Eat Street", a purpose-built undercover area full of restaurants and bars.

Tuesday night is the Conference Gala Dinner: there will be entertainment, National Awards and the charity auction. Please support this function, as it showcases all that is good in our industry. This year's recipient of our charity auction will be "KidsCan", an organisation that feeds school children in need and provides footwear and clothing to the disadvantaged.

Details of all the **Competitions and Award** opportunities, and how to nominate worthy recipients, are available on the conference website.

Please do not hesitate to nominate someone if you believe they meet the criteria.

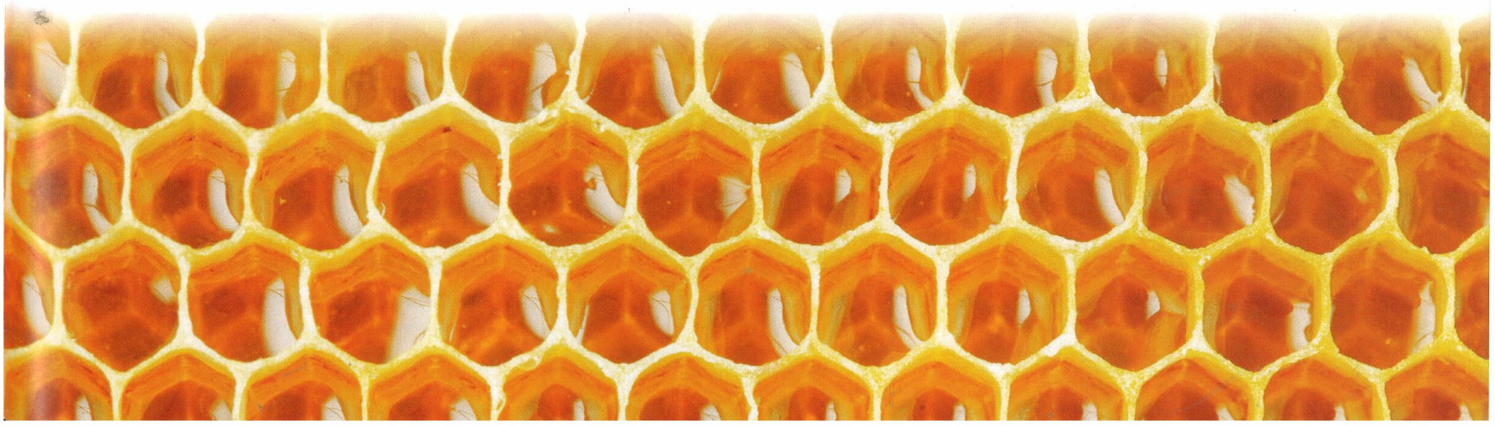
- The Roy Paterson Trophy
- ApiNZ 100% Pure New Zealand Honey National Honey Show
- ApiNZ Ecrotek National Photographic Competition
- ApiNZ Peter Molan Award for Excellence in Apiculture Science
- ApiNZ Unsung Hero Award to "The Buzziest Bee"

Wednesday 22 June is set aside for annual general meetings; of importance to all industry will be the Apiculture New Zealand AGM, where the first elected Governance Board will be given the reins of the national organisation.

Registration for conference is open now. You can do this online or by phoning the conference team, who will mail out a hard copy or provide assistance where required.

CONFERENCE WEBSITE:
www.apicultureconference2016.co.nz

CONFERENCE HOTLINE:
09-520 9198



APICULTURE NEW ZEALAND NATIONAL CONFERENCE

IMPRESSIVE LINE-UP OF SPEAKERS AT CONFERENCE 2016

Dr Oksana Borowik, scientist, commercial beekeeper, and member of the Apiculture New Zealand Research Focus Group

This year, our industry looks forward to a big year of change. This change is marked by a new era of cooperation and unity, which extends to our national conference. This is the first time our industry—via the **Apiculture New Zealand Research Focus Group**—has called for abstracts from scientists in New Zealand to present at the conference.

This alone marks a significant change in drawing out people that the conference might have missed out hearing from in the past and sets up the groundwork for a pretty impressive line up of New Zealand speakers.

The introduction of a poster section is something new this year. It will serve to highlight new areas of research and give students studying subjects related to apiculture exposure at our conference, as well as showcasing interesting results of their current activities.

Beekeepers in New Zealand, both hobbyists and commercial operators, face many challenges. The topics important to anyone with an interest in honey bees, at any level of experience, are well covered by the scientists speaking this year. These topics include factors affecting hive health, the results of the NZ Colony Loss and Survival survey, overstocking, queen breeding and health, pesticides, mānuka honey, the introduction of the Giant Willow Aphid, and of course, varroa.

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KEYNOTE SPEAKERS

The keynote speakers this year bring an international perspective on these issues. **Dr Medhat Nasr** is the Alberta Provincial Apiculturist in the Crop Research and Extension Division, Alberta Agriculture and Rural Development, Edmonton, Alberta, Canada. His responsibilities include regulatory, research, and extension. His research programme is focused on honey bee health management including breeding, pest surveillance, biosecurity, and integrated pest management. He earned his doctoral degree at University of California, Davis. His keynote speech is titled *"Alberta BEE-lievable experience, Growth vs Health"* and his message underlines that we have *"health and growth"*.

Medhat questions worldwide bee decline, CCD, neonics, and nutrition and maintains that growing a healthy hive is all in the management. *"In Alberta, despite all reported kills of bee colonies, 30% or more for 3 consecutive years monitoring pests, implementing management and control of pests, feeding, etc… bees' health has improved and colony [numbers are] growing."* Medhat will also give an international perspective on colony loss surveys.

Dr Gordon Wardell is the Director of Pollination Operations for The Wonderful Orchards in California. Gordon has been a professional apiculturist for over 30 years, working with bees on three continents. Previously he was the extension apiculturist for the State of Maryland and he owns and directs S.A.F.E. Research and Development, a company dedicated to developing products for the bee industry.

Photo: Frank Lindsay.

Gordon's accomplishments include the development of MegaBee, years of research in the areas of mite control, honey bee health, fire ant monitoring, small hive beetle, Africanised Honey Bees, commercial pollination and many other topics. Gordon's keynote address will be on *"Bee health and how it affects the honey crop and queen health and nutrition."*

Dr Peter Brooks from the Sunshine Coast University in Queensland lectures in analytical and organic chemistries. Peter has extensive research experience in analytical, environmental and organic chemistry. He has held research positions, supervised Honours and PhD candidates and attracted grants on projects involving chemotaxonomic studies, environmental monitoring and bio-actives in honey.

Peter will be talking about his work commissioned by the UMF® Honey Association to develop a chemical fingerprint for mānuka honey and the budding Australian mānuka honey industry.

Alison Saunders is the National Manager, Horticultural Cropping at Plant Health Australia (PHA). Her responsibilities cover Biosecurity Planning and Implementation, which assists industry and government members of Plant Health Australia identify and implement biosecurity preparedness and mitigation activities. This includes the development of Industry Biosecurity Plans, Farm Biosecurity Manuals and grower awareness material, as well as the establishment and management of national biosecurity programs. This work includes honey bee related issues within PHA, including "Smart Technology" surveillance at all key ports and airports.

Alison will present on the Australian experience in relation to biosecurity threats to their bee industry from exotic pests and changes to conditions that bees now face within Australia.

continued...

NZ RESEARCH PRESENTATIONS AND WORKSHOPS

An important note: The conference starts for all participants on **Sunday,** so make sure you arrive on time—Monday is too late! Your input and involvement is needed for the ***"Sustainable Beekeeping Through Integrated Control of Varroa"*** presentation and workshop on the afternoon of Sunday, 19 June. This workshop, run by **Dr Claire Hall** and **Dr David Pattemore** from Plant and Food Research, is an exciting new development involving other research collaborators from AgResearch, Landcare Research, and universities working in a co-innovation approach with all stakeholders. The workshop will discuss integrated pest management: what this means, and tools that are available to control varroa that have developed resistance to synthetic chemicals.

To succeed, this proposed research needs the involvement of beekeepers as much as possible. We urge you to come and participate in this presentation and a workshop that includes a Q & A with all attendees including international speakers Dr Medhat Nasr and Dr Gordon Wardell.

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APICULTURE
NEW ZEALAND

Apiculture New Zealand
National Conference
19 – 21 June 2016
Energy Events Centre
Rotorua

Bee Business

Science

Health

Trade

For registration details
visit www.apicultureconference2016.co.nz or phone 09 520 9198 021 777 928

NZ RESEARCH PRESENTATIONS AND WORKSHOPS

Dr Pike Brown from Landcare Research will be speaking about the results of the NZ Colony Loss and Survival survey. In the winter of 2015, all New Zealand beekeepers were invited to answer the survey and all told, 366 beekeepers with 225,660 hives participated (7% of all New Zealand beekeepers including 46% of those with 400 or more hives and 40% of the total number of hives in autumn 2015). The proportion of honey bee hives lost in New Zealand over winter 2015 was 10.7% with some beekeepers experiencing losses in excess of 20%.

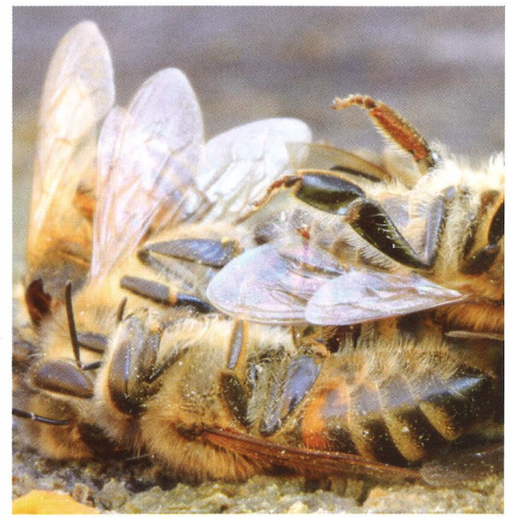
Analysis of the data shows many interesting patterns, among them, the three major causes of hive losses in descending order being queen problems, colony death and wasps, as well as the issue of overcrowding. Large commercial operators had lost as many as 86% of their sites to other beekeepers. The first survey of its kind in New Zealand, it will be sure to raise some more interesting points. *[Editor's note: see page 18 for more information.]*

As the growing demand for mānuka honey puts pressure on floral resources in terms of overcrowding and potentially threatens hive health, **Dr Anne-Gaelle Ausseil,** also from Landcare Research, will be speaking about mapping the hive carrying capacity of honey bees; i.e., how many hives an area can successfully sustain. Dr Ausseil has developed a special framework to assess a landscape's ability to sustain hives. She will be reporting on whether the nectar and pollen supply for different land cover types meet the demand from the bees.

Dr Peter Dearden from the University of Otago will speak on improving NZ honey bee stock by developing a breeding programme using genomic selection. This research would ultimately result in the ability for a queen breeder to select stock based on the composition of the desired genes and improving performance much faster than traditional queen breeding.

Dr Lou Gallagher from the Ministry for Primary Industries will speak about her work in establishing a baseline for honey bee diseases and pathogen load to help understand seasonal variation and correlations with hive health and productivity. Determining the range of pathogens such as viruses, bacteria, and pathogens in New Zealand hives is a key step in managing hive health. This research, approved by the Ministry for Primary Industries, will take place over the next three years.

In the spring of 2014, many North Island beekeepers observed dramatic honeybee disappearances with no obvious cause. The remaining bees showed extremely high levels of the emerging gut parasite *Nosema ceranae*. **Dr Mark Goodwin** and his team from Plant and Food Research have been studying the infection dynamics of *N. ceranae* and will be reporting the interim results. They have observed widespread infection across apiaries with bees becoming infected within two weeks of entering an infected hive. Mark's team is now investigating management strategies to minimise the economic repercussions of this emerging disease.



Michelle Taylor, also from Plant and Food Research, will give an update on her groundbreaking PhD research on the links between bacterial species present in the gut of New Zealand honey bees and potential links with disease.

Seo Hyun (Sally) Kim from the University of Otago will also present her PhD research on cues in bee brood that elicit Varroa Sensitive Hygiene in honeybees.

The Giant Willow Aphid, first found in New Zealand in 2013, has created an interesting problem for New Zealand beekeepers—willow honey dew honey that is granular and difficult to extract. Its impact on honey bee health and nutrition is unknown. **Dr Stephanie Sopow** from Scion and **Dr John McLean** will discuss the potential implications of the arrival of the Giant Willow Aphid and the impact of honey dew honey on bee nutrition and honey producers.

The Giant Willow Aphid. Photo: Frank Lindsay.

continued

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BEES GIVING LIFE

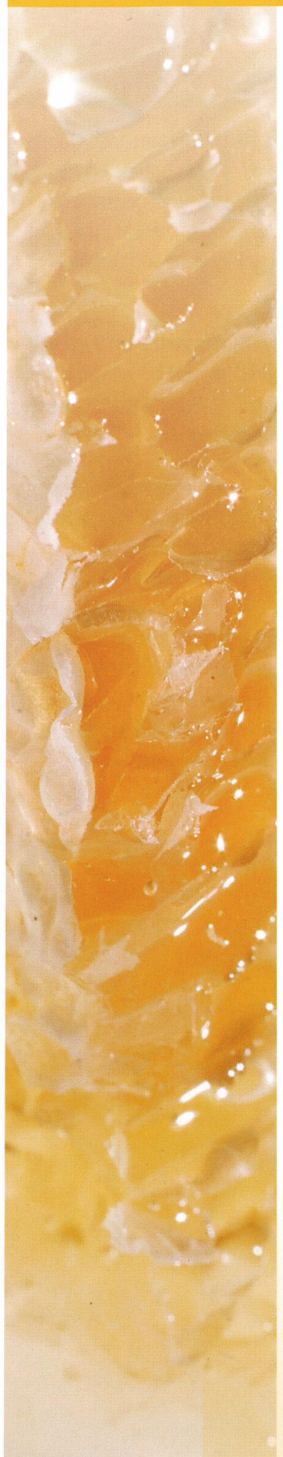
APICULTURE NEW ZEALAND

NATIONAL CONFERENCE 2016

Rotorua, Sunday 19, Monday 20, Tuesday 21 June

GO FOR GOLD!

Call for entries...



AWARDS & COMPETITIONS

The Roy Paterson Trophy

An award for the **best innovative idea or invention** to help New Zealand beekeepers, whether in the field or at the factory. Entries close – 8.00 am Sunday 19th June.

ApiNZ 100% Pure New Zealand Honey - National Honey Competition

Where quality, innovation, and pride take centre stage. Entries close for the main competition 2.00pm Sunday 19th June. For the Airborne Commercial Class – Thursday 19th May.

ApiNZ Ecrotek - National Photo Competition

A great opportunity to showcase your skills as a photographer, from that classic snap to the proverbial blooper. Entries close 12.00 noon Sunday 19th June.

ApiNZ Peter Molan Award - Excellence in Apiculture Science

Recognition of an outstanding contribution in the field of apiculture science, this is a special award and comes with a substantial Science Grant. Nominations close on Sunday 15th May.

ApiNZ Unsung Hero Award - The Buzziest Bee

Recognises the efforts of a member of the apiculture industry who has gone that extra mile, who has given his or her time for the betterment of industry without seeking recognition or reward.
Nominations close on Sunday 5th June.

For full details on how to enter or nominate an award recipient please go to: www.apicultureconference2016.co.nz

Thank you - Conference Steering Committee 2016

Dr Phil Lester from Victoria University of Wellington will speak about his discovery of Deformed Wing Virus in Argentine Ants and its implications for infecting honey bees through invading beehives and foraging in the same environment.

Dr Chris Pook from the Auckland University of Technology (AUT) will discuss his investigation into reports of hives near maize paddocks waning and dying following harvest. He is in the process of investigating whether a novel pathway may exist by which neonicotinoids can be transferred to foraging honey bees.

Issues important to the mānuka honey industry will also be highlighted at the conference. **Dr Suzanne Keeling** from MPI will give an update on the progress of the work towards a definition of monofloral mānuka honey. An overview of the first phase of DNA and chemical testing will be presented as well as a progress report on the second phase, developing and validating selected characteristics and test methods.

Dr Linda Newstrom-Lloyd from Trees for Bees Research will be presenting on how to make mānuka sustainable, highlighting that high-value medical grade mānuka plantations on unproductive marginal land can be made sustainable through well-organised systems around the flowering calendar to provide pollen and nectar at critical times. Linda will also facilitate two workshops on Trees For Bees as well.

Dr Megan Grainger from Analytica Laboratories will be speaking about assessing the potential mānuka activity of a hive site and **Dr Karyne Rogers**, senior scientist at GNS Science, will be leading a honey-testing workshop based on her work on characterising New Zealand honey according to international protocols and her specialty in C4 sugar testing of mānuka honey.

This line up of speakers is among the most impressive ever gathered at an apicultural conference in New Zealand. We urge you not to miss it.

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APICULTURE NEW ZEALAND

NOTICE OF THE 2016 AGM

of Apiculture New Zealand to be held at the Energy Events Centre in Rotorua

Wednesday 22 June 2016

The AGM will commence at 9.00am

This AGM marks an important milestone in that it will be the first AGM for Apiculture New Zealand, and will be an opportunity for all members to meet the organisation's newly elected board and to learn more about the Association's intentions.

Daniel Paul
Chief Executive Officer

Advance Notice to Regional Hub Secretaries

2016 Annual General Meeting Deadlines

APINZ Regional Hub AGMs should be held by 23 May 2016

2016 ANNUAL GENERAL MEETING	TO INCLUDE	TIMING PRIOR TO AGM	TO BE COMPLETED BY
Notices of Motions	**To CEO**	**50 days**	**Tuesday 3 May**
Proposals to alter Rules – These will be tabled but not actioned until the new Board is in place	**To CEO**	**50 days**	**Tuesday 3 May**
Regional Hubs' Financial Reports —to reflect an opening financial position as at 1 April	**To CEO**	**30 days**	**Tuesday 3 May**

Secretary: info@apinz.org.nz and CEO: ceo@apinz.org.nz

PHONE: 04 471 6254

BUSINESS/CRIME

BEEHIVE THEFTS

New Zealand Police

Since the beginning of the 2015–2016 honey season, Police have noted an increase in the reported theft of bees, beehives and honey. Often multiple hives have been taken, such as the 50 hives stolen in one incident in Waikato in August. During the build-up phase of the season, nucs, hives, and frames of bees have been stolen, while towards the end of the honey flow, honey supers have been targeted.

Photos supplied by New Zealand Police.

The same issues are occurring in countries such as Australia, the United States and throughout Europe. This is likely a result of the increasing value of honey, and in particular, mānuka honey in New Zealand.

Police believe most thieves are operating during the hours of darkness when bees have returned to their hives and there is less opportunity to be seen by nearby farmers and members of the public. Hive numbers being stolen vary from half a dozen up to 50 hives at a time. However, the full extent of the problem is unknown, as Police have become aware that some victims are not reporting the thefts.

Police are aware of the value of the hives and the corresponding loss of income and livelihood when they are stolen, and the impact that the thefts are having on the industry. There is also the potential for damage to New Zealand's reputation.

Police need your help to identify those responsible, and prevent further thefts.

Contact Police if you have any beehives stolen, you see a theft in progress, you see

Police need your help to identify those responsible, and prevent further thefts.

anyone acting suspiciously around beehives/apiaries, or you see any suspicious vehicles carrying beehives:

- call 111 if it is happening now or just happened.
- call your local station if it happened some time ago or it is not known when exactly when it happened.
- if you have information but wish to provide it anonymously, call Crimestoppers on 0800 555 111. Crimestoppers is operated by an agency independent of Police and won't provide Police with any of your personal details.
- if in doubt, call 111.

Police will ask you:

- where the incident happened/is happening
- what happened (e.g., a suspicious vehicle carrying hives, people stealing hives, etc.)
- the time period in which it happened
- if the person/vehicles have left, then in what direction
- a description and registration number of the vehicle(s)
- a description of the person/people
- it is also helpful if you can provide information about the beehives such as quantity, colour, or anything unique about the hives, the apiarist registration number, the breed of bees, and the queen's mark if it has one.

Other ways you can protect your beehives

- Engrave or fire-brand your apiarist registration number into the hive and top of the frames to reduce the ability for the number to be painted over/removed if they are stolen.
- If possible, keep hives in paddocks away from public view.
- Consider using outdoor surveillance cameras and install signs that surveillance cameras are operating to deter thieves.

NZ COLONY LOSS AND SURVIVAL SURVEY

NZ COLONY LOSS AND SURVIVAL SURVEY RESULTS

Information provided by Christine Harper and the Ministry for Primary Industries

NZ COLONY LOSS & SURVIVAL SURVEY

The results of the first New Zealand Colony Loss and Survival Survey have been published. You might have noticed a number of news items in recent weeks.

Beekeepers can view the summary information at http://www.landcareresearch.co.nz/science/portfolios/enhancing-policy-effectiveness/bee-health

The team at Landcare Research want to thank everyone who participated in the survey. "The information and insights so generously shared by beekeepers up and down the country was very valuable and we hope to be able to further develop the survey for 2016," says Christine Harper, Business Development Manager for Landcare Research.

MPI media release

The Ministry for Primary Industries released the following statement to the media on 10 March 2016.

A survey on the loss of bee hives in New Zealand has found the rate to be low-to-average compared to international studies.

The Ministry for Primary Industries (MPI) and the beekeeping industry have today released a report on the findings of the inaugural New Zealand Colony Loss and Survival Survey in 2015.

The survey found New Zealand bee hive losses at 11% as opposed to an average of 17% internationally in the northern hemisphere.

The survey found New Zealand bee hive losses at 11% as opposed to an average of 17% internationally in the northern hemisphere.

The major cause of hive loss was problems associated with queen bees, in particular, drone-laying queens (queens that lay under-fertilised eggs which result in drones (males)), and the absence of a queen or the death of the queen. Other losses were attributed to hive thefts, changes in land access, nectar, pollination sources and overcrowding of apiary sites and wasps.

"Beekeeping is an integral part of New Zealand's agricultural economy. The honey bee is an abundant and readily managed pollinator for pastoral, arable, and horticultural production," said Stuart Anderson, Director Spatial, Forestry and Land Management, MPI.

"The purpose of the survey, the first of its kind in New Zealand, was to build a better picture of the state of our honey bees and the challenges beekeepers are facing. The results will provide baseline information for monitoring managed honey bee colony loss and survival over time."

The survey, by Landcare Research, was commissioned by MPI, the National Beekeepers Association and the Bee Interest *[Industry]* Group of Federated Farmers.

The survey provides the most comprehensive picture to date of bee hive losses in New Zealand.

MPI will be discussing the findings with industry over the next few months and what they mean for colony health and beekeeping practice.

The survey provides the most comprehensive picture to date of bee hive losses in New Zealand. A total of 366 beekeepers, who collectively manage 225,660 hives, were surveyed about their beekeeping practices, losses of hives and its causes, queen bee health, varroa treatments, supplementary feeding, overcrowding and loss of apiary sites.

The survey was modelled on colony loss surveys being conducted around the world and adapted to the New Zealand setting, and done in consultation with New Zealand beekeepers.

"In temperate climates such as New Zealand, some colony loss is expected over winter due to lack of food and poor foraging weather, bees being too weak to survive the cold, or bee health being compromised by pests and diseases or environmental factors," said Mr Anderson.

Overall, commercial beekeepers reported fewer hive losses than non-commercial beekeepers.

The survey was not intended to diagnose Colony Collapse Disorder or Colony Depopulation Syndrome in New Zealand, rather it provides baseline data that will provide an insight as where further research may be required.

MPI will be discussing the findings with industry over the next few months and what they mean for colony health and beekeeping practice.

Reference

Ministry for Primary Industries (2016). New Zealand bee hive losses 'low-to-average'. Media release, 10 March 2016. Retrieved March 11, 2016 from http://www.mpi.govt.nz/news-and-resources/media-releases/new-zealand-bee-hive-losses-low-to-average/

[Editor's note: you can download the full survey as a PDF via the URL located immediately above.]

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You can also reduce the weight by making the boxes more narrow. In Australia and the USA boxes 8 Frames wide are common. This of course reduces the weight by 20%. To make the box even lighter you can make the box half the width, which is our Slimline 5 Frame hive box. The advantage with these options is that you can still use full depth internal components like frames and internal division feeders, while reducing the weight.

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BUSINESS

USING MĀNUKA HONEY FORECASTS FOR TRADING HONEY

Steve Howse, Executive Director, Analytica Laboratories

It has become common to trade mānuka honey based on a forecast of its future grade and quality. However, simply using the maximum future grade of the honey may not be the best way of valuing honey today. Its current value will be affected by things like the cost of carrying the honey while it 'grows', the risk of the honey being damaged while it 'grows', and its ability to be packed into a product that can be sold in high-value overseas markets.

Analytica provides a mānuka honey forecasting service, and is often asked questions about how the forecasted grade and quality of honey should influence the its price. As a testing lab, we don't offer opinions on the value of honey! However, this article has been written to offer a few thoughts to consider if using forecast results when trading mānuka honey.

1. Focus on the customer.

New Zealand's mānuka honey industry produces a high-value food and medical product, mainly for overseas customers. There are many people involved—from the beekeeper at the start of the process to the seller of the product at the other. For the end customer to have a great experience with mānuka honey (and to happily purchase more), we all need to work together to be sure the final product is safe, true to label, and trusted as an authentic and unadulterated natural product.

When trading honey, and considering the forecasted grade and quality of honey in future, the things that the end customer values should be front and centre of our thinking.

2. Having honey with potential is not the same as having honey that has realised its potential.

A forecast may show that your honey has potential to reach a much higher grade in future. However, there is a lot of work involved in managing that honey to reach its potential. For example:

- the honey will need to be stored for a period of anywhere between six and 18 months from harvest before it will be at an optimum point for processing. There is a carrying cost in holding valuable drums of honey for that period of time
- ideally, storage will be at a controlled temperature in the low- to mid-20s Celsius. Specialised storage facilities are expensive to build and operate
- there is risk that once honey is in storage, something might go wrong. Fires in storage facilities and overheating of honey when thermostats fail are two examples we have seen more than once in recent years.

Analytica Laboratories executive director Steve Howse.

This all means that the cost and risk of needing to store honey should be taken into account when negotiating its value.

continued...

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3. Honey at its maximum MG concentration is past its best for processing.

When a processor manufactures a final packed product, there is a statement on the label about the grade and quality of the honey inside the container. There is also a 'best before' date. The end consumer can reasonably expect the product will be true to its label until that time.

Changes in the grade and quality of mānuka honey continue once the honey has been processed and packed—there is nothing magical about packed honey that means it will stop changing as it does in the drum. Therefore, honey that is packed needs to have enough potential in it to remain at or above its labelled grade until its 'Best Before' date.

In practice this means that honey may well be best to be processed when MG (methylglyoxal) has reached 80–90% of its maximum, leaving some future growth potential to be sure it will last through the shipping process and on retail shelves for a 2–3 year period. For this reason, it is worth considering what proportion of the maximum grade should be used when valuing bulk honey.

The end consumer can reasonably expect the product will be true to its label until that time.

4. High HMF makes mānuka honey hard to sell in high-value markets.

High-value overseas markets in Asia, the Americas, and Europe tend to follow CODEX standards for honey—which include a maximum HMF (hydroxymethylfurfural) of 40 mg/kg. Storage of honey in warm conditions results in HMF increasing quickly, which can make it hard for processors to use when packing honey for export to these markets.

Forecast models should not only tell you about the future grade of the honey—they should also forecast how HMF will change over that time under different storage conditions. And those storing bulk honey should think about changes in HMF as well as MG when planning their storage conditions, so that honey is suitable for export as a high-quality product. Honey with high HMF is likely to be worth less than honey of a similar grade with a lower HMF.

Conclusion

To be sustainable, our industry will consider the needs of our end customer at all steps in the value chain. By doing this, our industry will produce consistently high-quality mānuka honey products that are true to label through their shelf life. And they will be able to be exported to all the high value markets that are available to us.

Forecasting is a useful tool to assist with this. It can be used by both sellers and buyers of bulk honey when agreeing on its value. As decisions are made on value, things other than the future maximum grade of the honey may be considered—such as carrying cost, risk, HMF, and the need for packed honey to sustain its grade for some years after processing.

These graphs should be read in conjunction with the text on page 25.

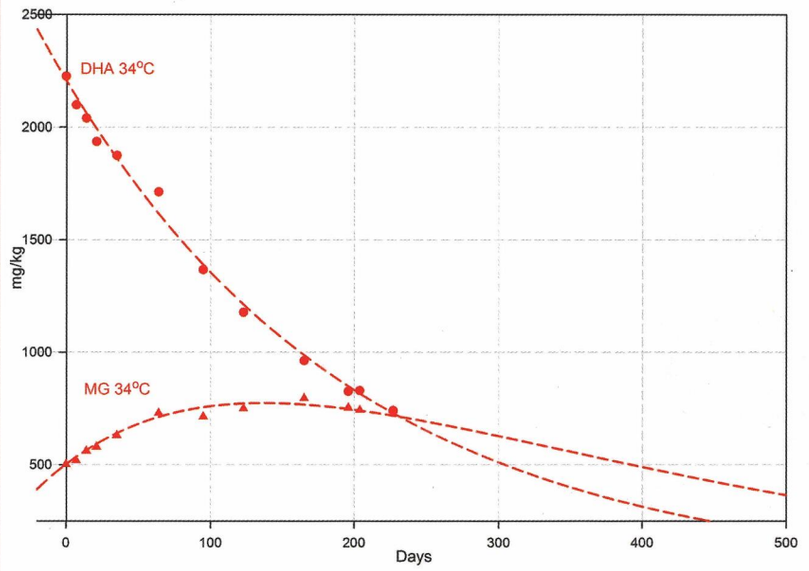

Figure 1: Changes in DHA (dihydroxyacetone) and MG concentration over 500 days at 34°C in honey (initial concentration of 2338 mg/kg DHA and 503 mg/kg MG).

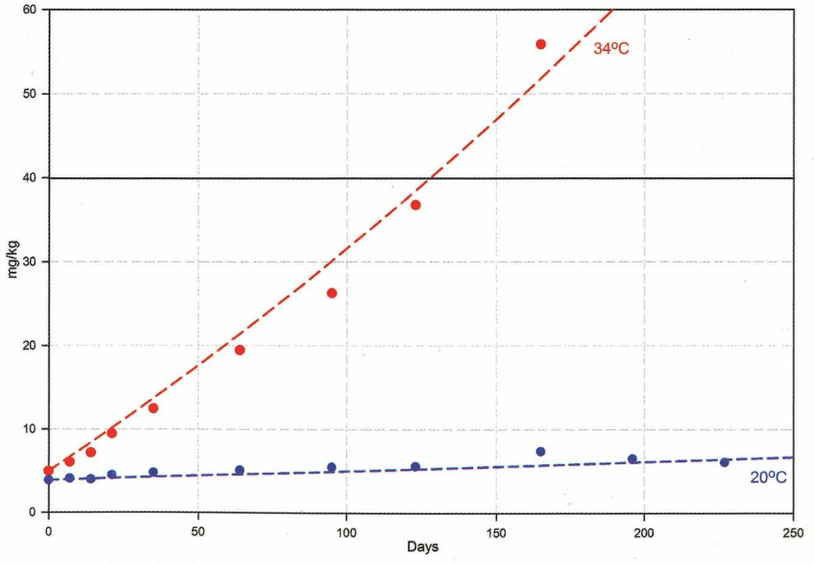

Figure 2: Changes in HMF concentration over 250 days at 20°C and 34°C in honey (initial concentration of 4 mg/kg HMF).

continued...

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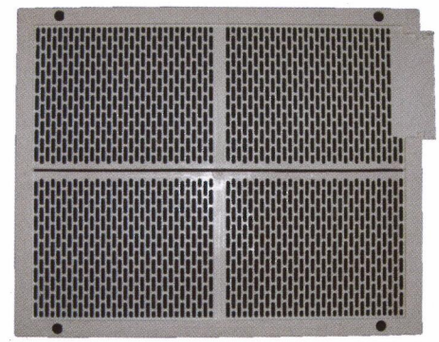

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A reminder of how mānuka honey forecasting works

Mānuka honey is quite unique. The quality of most primary industry or natural products is never better than when it is first produced—think about milk, or meat, or fresh fruit and vegetables. But the grade and quality of mānuka honey improves after harvest, reaching its maximum months or even years later. Forecasting of the grade and quality of mānuka honey is useful, because it gives an indication of how that honey will change in future.

This topic was covered in detail in the October 2015 edition of the journal (Howse & Chernyshev, 2015). In summary, mānuka honey naturally contains two important compounds—DHA (dihydroxyacetone) and MG (methylglyoxal)—which are associated with the grade of the honey. The DHA is collected by bees in mānuka nectar, and is at its highest in freshly produced honey. Then, over time:

- DHA concentration decreases, as it converts to MG in the honey
- MG initially increases as a result of the DHA conversion. However, after a time MG (which is also converting to other things in the honey) reaches a maximum, and then it also starts to decline in concentration
- because grading systems like UMF, RM, and MGS are linked to MG concentration, the grade of the honey goes up and then down as the MG concentration does
- HMF (hydroxymethylfurfural, a measure of the age and heating of honey) increases over time. High HMF values are seen as a possible human health risk, and honey exported from New Zealand generally needs to have an HMF of 40 mg/kg or below.

Mānuka honey forecasting indicates how DHA, MG, HMF and the mānuka honey grade will change over time. Forecasts use an initial set of test results that show the makeup of the honey at the start of the forecast period. And they use a mathematical model to indicate how the honey will change in future. The best models are based on repeated testing of honey stored in controlled conditions at different temperatures. A few different models are used in the industry, both by some honey processors, as well as by laboratories like Analytica.

Reference

Howse, S., & Chernyshev, A. (2015, October). Forecasting the change in manuka honey is now a reality. *The New Zealand BeeKeeper, 23* (9), 47–48.

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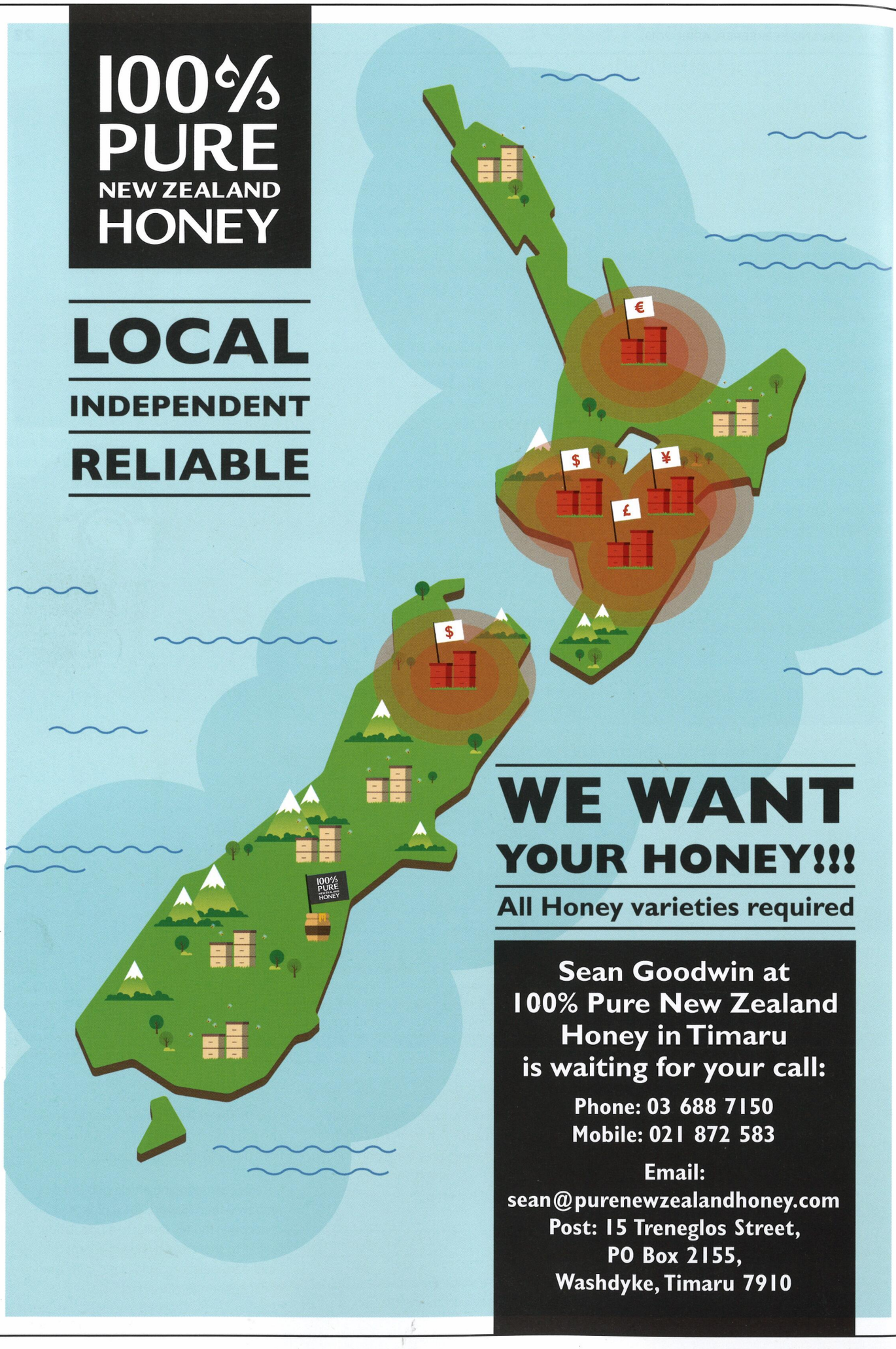
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TREES FOR BEES CORNER

NUTRITION, *NOSEMA* AND NEONICS: WHAT'S FOOD GOT TO DO WITH IT?

Linda Newstrom-Lloyd

A good diet plays a crucial role in the prevention of colony failures in more ways than we realise. It is often possible to distinguish the different types of colony losses that are due to single causes like queen failure, excessive pesticide or plant poisoning (e.g., karaka), specific diseases (e.g., AFB), or starvation.

To illustrate, poisoning is suggested by a heap of dead bees at the hive entrance. Diseases can be tested for by submitting a sample of bees to the lab (e.g., John Mackay at dnature; john@dnature.co.nz) or by learning to recognise symptoms of *Nosema*, AFB, chalkbrood, etc. Starvation is indicated by insufficient food stores in the hive. But what if none of these are clear-cut symptoms?

For example, in spring 2014, no causes were obvious for the rapid depopulation and collapse of many colonies, a large-scale event in the Coromandel and other parts of the North Island. Oksana Borowik reports,

> "Over a short period, colonies of over 10,000 were reduced to just a few hundred bees and a queen. The remaining bees were unable to tend to the brood, leaving the hives too weak to produce a honey crop, or even to survive".

This is the first such incident to occur in New Zealand and it is estimated that thousands of hives were affected (Borowik, 2015a & b; Borowik and Goodwin 2015). These symptoms are characteristic of what has been termed internationally as Colony Collapse Disorder (CCD) syndrome.

What exactly is CCD?

Most scientists no longer refer to this syndrome as CCD, but rather "rapid depopulation" or other more general names to include variations on this type of syndrome, such as the historical 'dwindling' disease.

The Toringo or Seibold Crab Apple (Malus sieboldii) *is frequently used on Trees for Bees Demonstration farms as a good source of spring pollen. The fragrant white flowers open from pink buds in mid-spring. This deciduous small tree is covered with flowers at blossom time providing plentiful bee feed with protein-rich pollen. It produces a small crab apple early in the season and birds and ducks love the fruits.*

The main symptom of this syndrome is extremely rapid colony losses characterised by the sudden disappearance of the workers who were out foraging. They leave only the queen, the brood, some food and a few adult bees remaining in the hive.

A new, multi-causal model

Since 2006, enormous research effort has gone into the search for *'the'* cause of such rapid colony losses, only to find that this syndrome (whether it is called CCD or any other name) does not have a single cause. This type of colony loss is thought to result from multiple interacting causes.

Recently, an intriguing article published by Andrew Barron (Barron, 2015) proposed a conceptual model, similar to a population model, to show exactly how the symptoms of rapid depopulation could occur from a range of different multi-causal factors.

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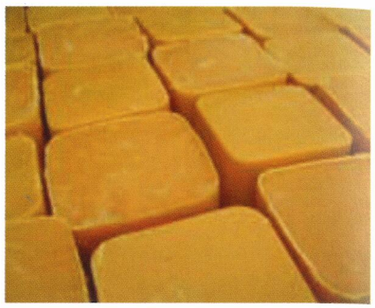

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The model focuses on the *social consequences* of the sublethal effects of multiple stressors on bees. Sublethal effects are symptoms that do not kill the bees, but do impair their normal behaviour such as learning, memory, ability to navigate or orient, or to communicate sources of food. These types of sublethal effects are known to result from diseases such as *Nosema ceranae*, sublethal doses of stressors such as neonicotinoid traces in pollen or nectar, or even mild starvation that shortens the life of a bee.

Barron says,

> … [D]iseases do not need to kill individual bees to kill a bee hive: if they sufficiently compromise colony function this can cause colony failure. From the perspective of a colony maintaining its resource base and population it makes no difference if a pathogen kills the worker bees out right, or simply prevents them successfully returning home from foraging … A honey bee society usually contains within it autoregulatory mechanisms that operate to maintain the functions of the society against external stressors: fully understanding colony failure will require understanding how these social systems have failed. (p. 46)

Barron goes on to say that multiple stressors can interact in complex ways to alter the physiology of worker bees or the functioning of the entire colony. For example, if field-realistic (i.e. fairly low sublethal) doses of a neonicotinoid are combined with an organophosphate miticide, the impact is greater than the addition of the two stressors. They potentiate each other to impact odour learning and odour discrimination which bees need to find their food. This leads to lost foragers.

Multiple stressors can interact in complex ways to alter the physiology of worker bees or the functioning of the entire colony.

The Fried Egg Plant (Gordonia yunnanensis) *is used on Trees for Bees Demonstration farms as an answer to pollen and nectar dearth from autumn into winter. The large evergreen tree (up to 4 m) has flowers that look like a camellia, with white petals and showy golden stamens providing protein-rich pollen. Gordonia axillaris (also called Fried Egg Plant) is a similar species. Photos: Linda Newstrom-Lloyd.*

Other interactions that show potentiation and synergism involve malnutrition or starvation which makes bees more susceptible to *Nosema*, and to sublethal doses of a neurotoxin such as neonicotinoids or fipronil. These neurotoxins also make bees more susceptible to *Nosema* and in turn, *Nosema* infections make bees more susceptible to neurotoxins. If we think about the way human malnutrition, disease and toxins interact, this all makes sense. The problem is that it is very subtle and complex to diagnose in bees.

For a beehive that is losing its foragers, Barron's model incorporates the process of young nurse bees that are no longer socially inhibited by workers, and therefore enter into foraging work prematurely. Precocious foraging by nurse bees can be caused by colony starvation, pollen deprivation, disease, and even wax deprivation, according to Barron. The precocious young bees are not as effective at foraging and can get lost or die too soon. This compromises caretaking and feeding of the queen and brood, resulting in disrupted ratios in the division of labour in bee society.

Oksana Borowik reports that Mark Goodwin's team at Ruakura have marked over 12,000 bees to track their ages and have already made significant observations regarding premature foraging behaviour (Borowik, 2015). This is a work in progress and we eagerly await the results.

You might want to read Barron's full paper (see reference below). But to make a long story short, if chronic sublethal stressors are causing too much precocious foraging and poor foraging performance, the whole functioning of the colony can be altered enough to cause rapid adult population decline. At a certain point, an extremely rapid terminal decline causes death of the colony (e.g., within 14 days). The symptoms can be just like CCD or rapid depopulation syndromes: many different causes, same symptoms and many similar syndromes all leading to the same result.

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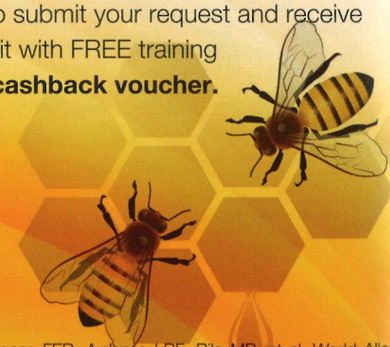

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Seeing is believing

What can be done?

How can you ensure that your bee colonies are protected from and resilient to the effects of chronic sublethal stressors? Basically, the answer is reducing exposure to sublethal stressors and preventing them from accumulating in your apiary. Plenty of evidence exists in the scientific literature that good nutrition can not only help to prevent diseases like *Nosema* taking hold, but also can make bees more resilient to low doses or short exposures to toxins (Di Pasquale et al., 2013). All three factors interact: disease, toxins, and poor nutrition.

The one factor that beekeepers have the most control over is food supply. Beekeepers can make sure to:

1. locate apiaries near a diversity of natural fresh pollen and nectar sources to cover their feed requirements
2. not overdo artificial feeding of pollen substitutes and sugar solutions, which provide inferior nutrition (Di Pasquale et al., 2013) and should only be used for short-term emergencies
3. not overstock colonies by placing excessive numbers of hives into one apiary site, or one apiary too close to others (both lead to starvation)
4. be alert to other beekeepers overstocking hives too close to your apiary sites, and engage farmers and landowners in cooperating to protect bee health by not allowing overstocking on their land.

Well-fed bees that have sufficient protein, lipids and carbohydrates with adequate vitamins, minerals and other phytochemicals will be able to withstand diseases like *Nosema* and even chronic low doses of toxins. Taking malnutrition and starvation out of the equation will go a long way to preventing colony losses due to multiple sub-lethal stressors.

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E-mail newstrom.lloyd@gmail.com if you would like to obtain PDFs of the references listed here.

AMERICAN FOULBROOD PEST MANAGEMENT PLAN

LOOKING FOR THE **AFB PMP AUDITED ACCOUNTS?**

As you may know, in the past the audited accounts for the AFB Pest Management Plan have been published in the April journal each year, thereby meeting the requirements of the Biosecurity Act 1993.

The AFB PMP Management Board has ascertained that these requirements can be met by publishing the audited accounts on the AFB website.

Go to http://www.afb.org.nz/audited-accounts (alternatively, you can access them by going to afb.org.nz, then navigating to Funding the Plan -> Audited accounts). You will find reports for the years ending 31 May 2013, 31 May 2014 and 31 May 2015.

A limited number of printed copies of the audited accounts will be made available at the Apiculture New Zealand National Conference for those requiring them, or request a copy from Rex Baynes, AFB PMP Manager (details on page 3).

AMERICAN FOULBROOD PEST MANAGEMENT PLAN

AFB AUDITOR ACTIVITY REPORT SINCE OCTOBER 2015

Rex Baynes, AFB PMP Manager

The dedicated inspectors plan is working very well, with large numbers of actual AFB inspections being carried out by competent beekeepers.

Auckland

A recent case was reported to AsureQuality by the local Fire Service, where a beekeeper was caught burning a large number of diseased hives in Auckland city. Because the beekeeper was a Certificate of Inspection (CoI) and Annual Disease Return (ADR) defaulter, inspections are being carried out on this beekeeper's apiaries and those of his associates.

Bay of Plenty

Reports of cases of abandoned hives and beekeeping gear are being followed up. The abandoned hives are in the Bay of Plenty area and the abandoned gear was found in a shed by a property developer in Auckland.

Taranaki

A helicopter aerial survey was recently carried out over the Taranaki and Wanganui mānuka areas. The apiaries were GPS fixed from the helicopter and the positions were checked with the co-ordinates of registered apiaries, using mapping software via the Apiary Database. A significant and concerning number of sites appeared to be unregistered and these have been followed up with ground inspections and communication with beekeepers.

A number of follow-up inspections are being carried out on a certain Taranaki beekeeper with a history of AFB. The level of disease has now come down to a manageable level.

Wanganui

A considerable number of inspections have been carried out in those Wanganui areas where disease has been reported. An AFB Auditor found a dumped, diseased hive over a riverbank. This hive was close to a number of large commercial apiaries and would have been a source of infection.

Levin and Piha Beach areas

Letters to beekeepers were sent out relating to cases of dead, robbed-out beehives located in Levin and Piha. AFB Auditors have carried out follow-up inspections in an attempt to locate the source. One source has thought to be located in the township of Levin, where a diseased abandoned hive was found.

Wairarapa

A full audit was carried out on a beekeeper who lost their DECA because of high levels of AFB. Some further cases of AFB were found.

A follow-up inspection was carried out on apiary sites that were unregistered from a commercial beekeeper whose DECA was recently removed. The inspections confirmed a number of hives located in places that did not meet the definition of an apiary site according to the AFB Pest Management Biosecurity Order 1998.

The alleged offending beekeeper has been requested to register a large number of previously unregistered apiary sites in the property of concern.

Other North Island areas

A number of follow-up inspections have been carried out in areas where disease has been reported and a number of unregistered beekeepers have been found. Inspections have been carried out recently in the following areas: Northland, Hawke's Bay, North Auckland, Taranaki, Wanganui, Napier,

Waikato, Gisborne, Wellington, Bay of Plenty and Auckland.

TradeMe sales

Investigation of diseased bee boxes being sold on TradeMe is currently under way.

Nelson

A few cases of AFB were found in the Waimea Valley; some of them were robbed out. Follow-up inspections detected some more cases of AFB, including an AFB-infected hive with no moveable frames in an unregistered apiary site that was destroyed.

Some apiary sites were checked for AFB in the Awaroa Bay area.

A CoI defaulter who reported not having bees because they died was visited, and an inspection of stored gear found signs of AFB on brood boxes. A notice was sent to the beekeeper to destroy all gear.

A couple of unregistered apiary sites were inspected and have since become registered.

Blenheim

An unregistered site reported by a member of the public was inspected, and the site became registered following the inspection.

Canterbury

A full audit was carried out on a commercial beekeeping operation in North Canterbury: as a result of the audit findings, they lost their DECA.

A report of an AFB-infected, robbed-out site in the Glentui area was followed out, with AFB inspections of about 450 hives located within that Valley.

AP2 inspecting frames. Photo: Byron Taylor.

South Canterbury

Some apiaries were checked on the Rangitata riverbed.

Some apiary sites were checked for AFB in Greeenstreet area: no disease was found.

Otago

A beekeeper reported to have neglected his apiary sites has been subject to a full audit. No disease was found.

A CoI defaulter was checked for AFB after reporting all hives died in the winter: no disease was found.

Southland

Apiaries in the Tapanui area were checked for AFB, following suggestions of a high AFB incidence in the area. No AFB was found.

A check on apiaries from a beekeeper with a history of AFB found a large incidence of AFB, some of them robbed out in a single apiary site. All hives on site were destroyed on default.

A check on apiary sites on both sides of the Balclutha River inland from Clutha found a number of unregistered sites from two different beekeepers. Beekeepers were issued with a notice to register the apiaries and their DECAs were cancelled.

Acknowledgement

Thank you to Tony Roper, Marco Gonzalez and Byron Taylor of AsureQuality for assisting in preparing this report.

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AMERICAN FOULBROOD PEST MANAGEMENT PLAN

AFB RECOGNITION COURSES LIST CAN BE FOUND AT www.afb.org.nz

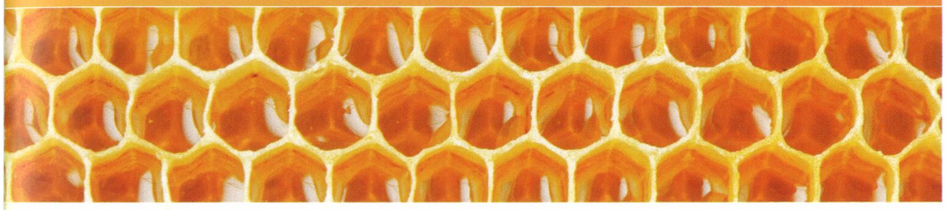
Rex Baynes, AFB PMP Manager

Beekeepers who wish to attend an AFB Recognition Course in preparation for applying for a Disease Elimination Conformity Agreement (DECA) are encouraged to visit the AFB website on a regular basis.

Courses are constantly being added to the schedule, with every effort being made to ensure a consistent spread throughout the country.

Under the new training administration, an AFB Refresher Course programme is available to all beekeepers. This is a 90-minute course that does not involve a written test at the conclusion; rather, it is an opportunity to simply refresh your knowledge.

Scheduled refresher courses also can be found on the website.



AFB WEBSITE VISITOR NUMBERS EXCEED EXPECTATIONS

Rex Baynes, AFB PMP Manager

Readers will be aware that on 13 April 2015 the revamped AFB website www.afb.org.nz was officially launched, the result of a great deal of work undertaken by the AFB PMP Board.

Board members are delighted with beekeepers' response to the site.

General statistics, 15 April 2015 through 2 March 2016

- There have been 28,986 sessions (a visit to the site is called a 'session').
- There have been 101,140 total page views (repeat views of a single page are counted).
- 70.40 % of website visitors are from New Zealand.
- Website visitors are from all age groups; however, 71.0% fall into the 18–34 age group category.

The AFB PMP Management Board is especially pleased with the success of the "Take the 5 Minute Quiz" introduced several months ago. The quiz is proving very popular with more than 25 quiz takers on any particular day. The quiz has been played a total of 2,713 times.

Other popular pages include AFB Recognition Courses for 2016, video resources, apiary registration and AFB symptoms.

Any ideas on how the site can be enhanced would be gratefully received.

BEEKEEPERS RISKING LOSS OF DISEASE ELIMINATION CONFORMITY AGREEMENT (DECA)

Rex Baynes, AFB PMP Manager

- Beekeepers holding a DECA (Disease Elimination Conformity Agreement), must, as part of their agreement with the AFB PMP Management Board, be totally compliant in all aspects of the AFB PMP.
- This includes registering all apiary sites, including those operating under the 30-day (commercial pollination movement) rule, where honey is gathered for future sale.
- Beekeepers who fail to honour their side of the agreement are at serious risk of losing their DECA status. This has occurred in a number of cases and the Board takes these breaches very seriously.
- Loss of DECA results in the beekeeper requiring all of his/her apiaries to be annually inspected by an accredited beekeeper (at the beekeeper's expense) along with a full audit, also at the beekeeper's expense.
- Such actions are carried out under the Biosecurity Act 1991 (Order 98).

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Research: Recent research suggests polysaccharides in Seaweed could be used to prevent or control Bee nosemosis. (Roussel 2015)

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Cheers Stu Ferguson (The Hive Doctor)

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Minerals and Trace Elements (mg/L - ppm)

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Sulphur 271.89	Calcium 90.63	Magnesium 211.47
Sodium 1701.83	Iron 0.703	Copper 0.064
Manganese 0.041	Iodine 454.50	Molybdenum 0.01
Selenium 0.01	Zinc 0.360	Boron 6.060
Cobalt 0.010		

Vitamins Vitamin A, Vitamin C, Vitamin E, Vitamins B1, B2, B3, B5, B12, Fucoxanthin, Choline, Folic Acid

Amino Acid (mg/100gm)

Aspartic Acid 7.17	Threonine 1.72	Serine 1.91
Glutamic Acid 19.19	Prolin 0.90	Glycine 2.62
Alanine 8.64	Valine 1.90	Isoleucine 0.87
Leucine 1.71	Tyrosine 1.41	Phenylalanine 1.31
Lysine 1.85	Histidine 0.68	
Arginine 1.50	Cystine 2.05	
Methionine 0.47	Tryptophan 0.21	

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AMERICAN FOULBROOD PEST MANAGEMENT PLAN

AERIAL SURVEILLANCE IN TARANAKI RAISES SERIOUS AFB PMP COMPLIANCE ISSUES

Rex Baynes, AFB PMP Manager

The AFB PMP Management Board carried out an aerial survey in early February 2016 to assess the level of beekeeper compliance in the wider Taranaki region.

Hundreds of apiaries were spotted and their GPS coordinates recorded. These were later compared to the apiary database using mapping software. This has resulted in 210 new apiary site registrations so far.

The results indicated clear breaches of the Biosecurity (National American Foulbrood Pest Management Plan) Order 1998 insofar as unregistered apiaries are concerned. As of March 2016, various investigations are taking place with correspondence being entered into with certain beekeepers.

The beekeepers concerned have been informed they are at serious risk of losing their DECA status, as well as placing their export eligibility in question. We are liaising with the Ministry for Primary Industries, which has been provided with the information.

In addition, I have reserved the right to recommend to the AFB PMP Management Board that a full audit be undertaken under the Biosecurity (National American Foulbrood Pest Management Plan) Order 1998, should I consider that the explanations provided are inadequate.

30-DAY REGISTRATION OF SEASONAL APIARY RULE BEING ABUSED

Rex Baynes, AFB PMP Manager

Of serious concern following the Taranaki aerial survey is the failure by certain beekeepers to honour the 30-day registration rule, which comes under the seasonal apiary clause of the Biosecurity (National American Foulbrood Pest Management Plan) Order 1998.

The law clearly states that if hives are placed on a site for more than 30 days, the site must be registered. This provision is being abused, resulting in an investigation now under way. The investigation involves seeking details from helicopter operators of when hives were airlifted in and when they were taken out.

Beekeepers found to have failed to comply with the rules will be at risk of losing their DECA status, as well as compromising their export eligibility through their AFB PMP non-compliance.

Note: Any site where honey is gathered for later extraction and harvest must be registered, no matter what length of time the hive remains on that apiary site.

BEE HEALTH/PEST AND DISEASE CONTROL

ARE YOUR **BEES HEALTHY?**

Tony Roper, Apicultural Officer, AsureQuality Limited, Tauranga
E-mail: tony.roper@asurequality.com

The importance of honey bees is widely acknowledged. Every day one reads in the press reports of bees dying and the lack of pollinators. This importance of honey bees is associated with their great pollinating power. Bees secure for us our modern-day diet of fruits and vegetables for human consumption, as well as the forage crops that our animals eat. Without bees, humans would be restricted to a grain-based diet.

Modern farming and orchard practices can have a major negative impact on bees' health and other beneficial pollinators, depriving them of necessary nutrients and exposing them to harmful toxins. In the quest to produce cheap food, producers grow large crop monocultures, which, combined with frequent spraying, creates large areas completely devoid of bee-friendly plants.

It is important that beekeepers monitor the health of their bees and recognise the signs if things are not well so that they can give the bees a helping hand. It is critical that every beekeeper knows what a normal, healthy hive should look like.

It is critical that every beekeeper knows what a normal, healthy hive should look like.

A strong colony is likely to produce a lot more honey than a weak colony

Colony health and survival

The health of a colony of bees is most critical for its survival. Bee colonies can fail for a number of reasons such as starvation, queen failure, and pesticides. In addition, diseases, parasites, and pests can weaken colonies to such an extent that they can't defend themselves from being robbed out by wasps or other bees, which will ultimately result in starvation of the colony.

Ideally, a colony of bees needs to be strong, for it then has a certain degree of resilience when faced with stresses, whereas a weak colony is likely to go rapidly downhill. Strong colonies are likely to be healthy, produce a lot of honey and will survive when conditions are harder.

A weak colony unable to cover the brood and prevent it from becoming chilled. Photo: Tony Roper.

Whether a colony is strong or weak is largely determined by factors affecting the rate that new bees (brood) can be reared and the rate that old bees are dying (longevity). Simply, if a colony can produce a lot of healthy brood and the adult workers can survive long enough, then the colony will expand and grow. A strong colony is likely to produce a lot more honey than a weak colony, because a greater proportion of adult bees can be freed up from tending young brood and can concentrate on gathering nectar.

Non-disease factors that affect colony health

Like humans, bees are what they eat! The foundation of good bee health is good nutrition, which for honey bees means good nectar and pollen supplies. Carbohydrates required for energy are supplied by nectar. A wide range of pollen supplies protein, vitamins, and minerals required for brood rearing and worker health. The lack of good nutrition in the long term will cause the ultimate starvation of the colony, but in the short term it can affect an individual bee's immune system and weaken its resistance to pathogens (Sammataro, 2012).

In fact, anything that can stress a colony needs be addressed, even environmental factors. This can even be something as simple as where the hive is sited. Bees hate cold, damp sites exposed to cold southerly winds. The beekeeper should try to select more suitable apiary positions that are sunny and have wind breaks. Also, it is important to select locations that have a large number and

... anything that can stress a colony needs be addressed, even environmental factors.

wide range of nectar and pollen plants that will provide the colony with good natural food sources.

Another environmental factor that will stress a colony is pressure from attacking wasps, which will force their way into a colony and rob it of its food supplies. Wasps are best controlled by destroying their nests, as the nests are usually close by, often fewer than 100 metres from the hive. Failing this, the entrances to the hives can be reduced to give the bees a fighting chance to defend themselves against the wasps.

Before you even open a hive, just by looking at the outside activity you should get a good feel for the general health and wellbeing of the hive. On warm days there should be plenty of activity at the entrance to the hive—lots of bees should be flying out of the hive to forage and be returning with loads of nectar and pollen.

A bee loaded with nectar will be heavy and will land heavily when hitting the landing board or front of the hive. A bee returning with pollen is easy to spot because coloured pollen will appear on its two hind legs, as if the bee is carrying it in two round baskets. Bees collecting pollen is a very healthy sign because it indicates that the queen is likely to be laying and brood is being reared.

A healthy colony ideally needs to have at least 10 kilograms (the equivalent of four full-depth frames) honey at any time.

Once opening the hive and first removing the top honey supers or boxes, their weight will give a good indication of the honey supply. A healthy colony ideally needs to have at least 10 kilograms (the equivalent of four full-depth frames) honey at any time. More honey is fine but if there is less than this amount, the colony may stop brood rearing and go into decline.

A healthy colony should be in balance, with brood in all stages of development. In the open brood there should be eggs that a healthy queen will lay (about 1,500 per day in spring). In a healthy colony, the amount of brood at the larval stage should be about double the amount of brood at the egg stage. The amount of sealed brood (pupal stage) should be double again for the amount of brood at the larval stage.

Common bee diseases and pests

This section provides a brief overview of the main bee diseases and pests a beekeeper is likely to encounter. For more detailed information on bee diseases and pests, please refer to Matheson and Reid (2011) for a good introduction or Sammataro (2012) for a more advanced description.

Bee diseases and pests infect either the brood or adult bees, with some affecting both stages.

Endemic diseases

The main endemic diseases known to exist in New Zealand at the present time are:

- American foulbrood (AFB)
- sacbrood
- parasitic mite syndrome (PMS)
- chalkbrood
- varroa
- wax moths.

The four endemic brood diseases (AFB, sacbrood, PMS and chalkbrood) are somewhat similar and can be easily confused. AFB is the worst of the brood diseases as we can't treat it; therefore the whole infected hive must be burnt to control this disease. The usual symptom with AFB is that dead brood in a cell can be stirred with a toothpick and the

continued...

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Inspecting a hive. Photo: Murray Reid.

infected material, which is fairly elastic, will rope out about 10–30 millimetres, then will snap back. Sometimes the AFB material will reach a dried-down scale stage later on and will not rope out, but still contains infectious spores that could be spread to other hives.

Sacbrood is very similar to AFB but the dead material, once stirred with a toothpick, appears watery and is not elastic to rope out like AFB. PMS is a brood disease caused by high varroa numbers, the main symptoms being heavy viral infections such as sacbrood and larvae being easy to remove (unlike AFB). The last brood disease, chalkbrood, is relatively common. This is quite different from the other three brood diseases mentioned earlier. Chalkbrood, as the name suggests, forms a hard, white 'chalky'-filled cell.

Varroa and wax moths are common endemic bee pests. Varroa is an external mite that feeds on the bee's hemolymph (blood). While this loss of hemolymph has a negative effect on a bee, the major effect of varroa is the physical piercing of the bee, thus infecting it internally with viruses that prove to be fatal. Varroa can feed both on the adult bee and the brood (pupal stage). Wax moths can be a problem entering weak hives that can't defend themselves and will feed on wax, brood, honey and pollen.

Exotic diseases

A number of exotic diseases have not yet been found in New Zealand, but with the increase in imported goods and international travel, some could inadvertently breach our border in the future.

Based on the level of risk of entering New Zealand, the main possibilities are:

- European foulbrood (EFB)
- small hive beetle (SHB)
- undesirable races/species of bees
- other mite species.

The first of the exotic diseases mentioned is EFB, which is a serious brood disease. EFB doesn't rope out like AFB, and dead larvae lie on the wall of the cells in a corkscrew shape and can be easily removed from the cell.

SHBs are similar to wax moths in the type of destruction they cause. Like EFB, SHB is found in Australia so it could be found in New Zealand in the future.

A number of undesirable races or species of bees are best kept out of this country. Two of the likely ones that could be found in New Zealand in the future are the Asian honey bee *(Apis cerana)* and the Africanised honey bee *(Apis scutellata)*.

The Asian honey bee is now on our doorstep, both in Australia and in some of the South Pacific islands. The Asian honey bee is a poor honey producer and because of its higher level of activity, would displace our European bees if it arrives in this country.

The Africanised honey bee is well known for its aggressiveness and could easily arrive here on a ship from the Americas or Africa.

Other exotic mite species we don't want in New Zealand are the internal tracheal mite *(Acarapis woodi)* and another external bee mite, *Tropilaelaps*, which is similar to varroa in its destructive behaviour.

What you can do

It is most important that beekeepers are inspecting their hives regularly and are in tune with their bees. As a beekeeper you need to be able to recognise healthy bees and should be able to spot the early signs of when a colony is out of balance and something is wrong. A beekeeper also should do whatever possible to reduce the stresses on a colony; e.g., relocating hives to more sunny sites, treating in a timely manner for varroa, etc.

If you see anything that looks suspicious in your hives and you think the cause could possibly be a newly introduced bee disease or pest, please immediately call the Ministry for Primary Industries (MPI) hotline 0800 809 966.

If possible, please also try to take pictures and collect a sample of the unusual bees or brood in a jar that can be sent to the lab for identification. You will be contacted immediately after your call to the hotline by a veterinarian or official from MPI or an Apicultural Officer from AsureQuality Limited. The caller will ask for more details and make arrangements for a sample of bees and/or comb to be sent to an MPI laboratory for diagnosis.

Acknowledgement

This article was funded by the Ministry for Primary Industries through the Apiculture Surveillance Programme.

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ADVERTORIAL

THERMAFLO COMPLETE MAJOR HONEY PROCESSING PROJECT

Provided by Thermaflo Limited

At the beginning of 2015 Thermaflo collaborated with Dynaflow to design, fabricate, automate, install and commission a new honey crystallisation process for Gisborne-based Wildcape Honey. Due to the properties of honey, the project's initial stages required a lot of design work and R&D to ensure the process would not only work the way the client needed but would deal with such a viscous product. Thermaflo's end design was a skid mounted honey crystallisation process that would meet the client's requirements.

After sitting down with Bill Savage, owner of Wildcape Honey, Thermaflo put forward a proposal for a skid mounted honey process system capable of processing 500kg of honey per hour. This unit was designed to heat the incoming honey by sending it through a 3 stage heat exchanger to liquefy the honey crystals. This is done to allow the honey to easily pass through the filtration process and remove any yeast spores to extend the available storage time. The continuous filtration unit was designed to filter the honey down to 200µ's using a self-cleaning wedgewire stainless steel cartridge. Following this filtration, the product is transferred to a vacuum vessel where excess moisture (approx 1.5%) is evaporated. Removing this moisture will also assist in extending the product storage time while also aiding in the increase in the UMF of the manuka honey.

Once processed, the honey is then either stored to increase the UMF of the honey or sent to a 2000L crystallisation tank where honey starter is added. Adding starter to the honey will begin the crystallisation process, taking up to 3 days to complete. Working closely with the engineering department at Massey University, Thermaflo designed a one-off agitator that would be able to rotate through the viscous honey within the crystallisation tank. This was done to insure that only very fine honey crystals are able to form creating a nice creamed honey with a great mouthfeel. Once the crystallisation of the honey is complete it is then ready to be packed and exported overseas.

Since Thermaflo completed the commissioning, the honey process skid has operated without fault. Wildcape Honey has managed to streamline their production and export a greater amount of manuka honey as they are now able to carry out process in house. Bill Savage was very pleased with the end result, stating, "Thermaflo were very good in the fact that they took the time to go through the design with me and also collaborate with Massey University to develop a very efficient process". With more inquiries coming in each week, Thermaflo have gained a better understanding of the unique properties of honey and are currently building another two skid mounted processes for a yet to be disclosed Waikato-based company, due to be completed in May this year.

AMERICAN FOULBROOD PEST MANAGEMENT PLAN

NEW ZEALAND BEEKEEPER, APIARY AND HIVE STATISTICS **BY APIARY DISTRICT AS AT 23 FEBRUARY 2016**

APIARY REGISTER LOCATION	CATEGORY 0 - 5 HIVES		
	BEEKEEPERS	APIARIES	HIVES
Blenheim	348	390	649
Canterbury	687	788	1211
Hamilton	382	412	751
Otago/Southland	400	449	861
Palmerston North	984	1096	1926
Tauranga	370	416	754
Whangarei	1191	1291	2356
NEW ZEALAND	**4362**	**4842**	**8508**

APIARY REGISTER LOCATION	CATEGORY 6 - 10 HIVES		
	BEEKEEPERS	APIARIES	HIVES
Blenheim	47	93	345
Canterbury	82	152	609
Hamilton	56	101	457
Otago/Southland	61	104	468
Palmerston North	139	223	1081
Tauranga	78	132	614
Whangarei	160	231	1163
NEW ZEALAND	**623**	**1036**	**4737**

APIARY REGISTER LOCATION	CATEGORY 11 - 50 HIVES		
	BEEKEEPERS	APIARIES	HIVES
Blenheim	52	189	1224
Canterbury	58	225	1362
Hamilton	70	164	1763
Otago/Southland	61	191	1301
Palmerston North	151	423	3802
Tauranga	102	282	2631
Whangarei	194	561	4515
NEW ZEALAND	**688**	**2035**	**16598**

APIARY REGISTER LOCATION	CATEGORY 51 - 250 HIVES		
	BEEKEEPERS	APIARIES	HIVES
Blenheim	36	571	4729
Canterbury	41	787	5234
Hamilton	42	296	4934
Otago/Southland	28	327	3480
Palmerston North	90	759	10614
Tauranga	89	566	9340
Whangarei	108	882	11367
NEW ZEALAND	**434**	**4188**	**49698**

APIARY REGISTER LOCATION	CATEGORY 251 - 500 HIVES		
	BEEKEEPERS	APIARIES	HIVES
Blenheim	8	368	3832
Canterbury	19	503	6981
Hamilton	12	340	5897
Otago/Southland	15	446	5115
Palmerston North	32	579	11221
Tauranga	41	709	12424
Whangarei	37	762	12391
NEW ZEALAND	**164**	**3707**	**57861**

APIARY REGISTER LOCATION	CATEGORY 501 - 1000 HIVES		
	BEEKEEPERS	APIARIES	HIVES
Blenheim	13	539	8457
Canterbury	17	715	11644
Hamilton	14	602	11171
Otago/Southland	21	957	14949
Palmerston North	18	672	15350
Tauranga	31	810	19012
Whangarei	17	611	11914
NEW ZEALAND	**131**	**4906**	**92497**

APIARY REGISTER LOCATION	CATEGORY 1000+ HIVES		
	BEEKEEPERS	APIARIES	HIVES
Blenheim	14	1425	28994
Canterbury	17	2036	39186
Hamilton	20	2091	54927
Otago/Southland	11	1171	22720
Palmerston North	34	6443	136061
Tauranga	36	2848	71865
Whangarei	26	3133	58691
NEW ZEALAND	**158**	**19147**	**412444**

APIARY REGISTER LOCATION	TOTAL		
	BEEKEEPERS	APIARIES	HIVES
Blenheim	518	3575	48230
Canterbury	921	5206	66227
Hamilton	596	4006	79900
Otago/Southland	597	3645	48894
Palmerston North	1447	10186	179904
Tauranga	746	5742	116140
Whangarei	1733	7471	102397
NEW ZEALAND	**6558**	**39831**	**641692**

EDUCATION

BEEKEEPING **ETIQUETTE FOR TOWNIES**

Marina Steinke

Commercial beekeepers are not alone in providing plenty of opportunities to bring the beekeeping fraternity into disrepute. Hobbyists often have their hives in built-up areas. No one expects a news crew to report on bees defecating on a washing line, but nonetheless it's important to keep neighbours happy.

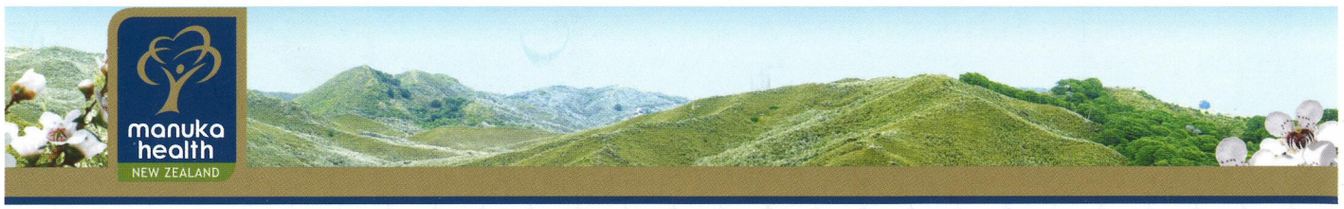
I've been keeping bees on a block of land on Banks Peninsula for over 20 years; so I know what is involved in keeping a hive happy. For a very short time, just after varroa arrived in Christchurch and bees were scarce or absent, I brought one nucleus to town to pollinate our fruit trees. This gave me an idea of how many (or should I say, how few) bees are required to pollinate everything within a radius of 100 metres or more: six frames of bees, brood and honey. Our neighbours told us how happy they were to see a few bees again and have their fruit trees and vegetables pollinated again. After flowering time was over, the bees went back to Banks Peninsula, as we didn't want our bees to start eating fruit and compete with wasps, upsetting the people around us.

With the number of hobbyist beekeepers almost doubling during the past few years, hive density in built-up areas can be quite high.

With the number of hobbyist beekeepers almost doubling during the past few years, hive density in built-up areas can be quite high. We now have plenty of bees on pollination duties here in Christchurch and no need to bring in bees ourselves. Rather the opposite: bees sometimes become a nuisance, especially when fruit ripens. The hives are at their highest bee numbers for the year and there just aren't enough flowers around to keep all of them happy.

continued...

Hungry bees and fruit can pose a nuisance for neighbours.



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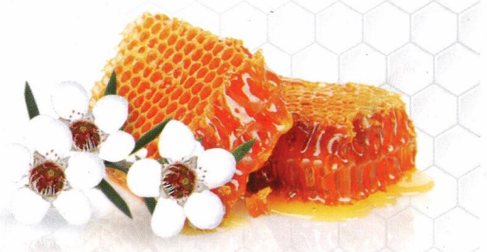

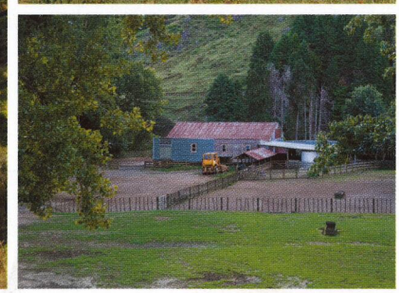

THE JEWEL IN THE HONEY CROWN

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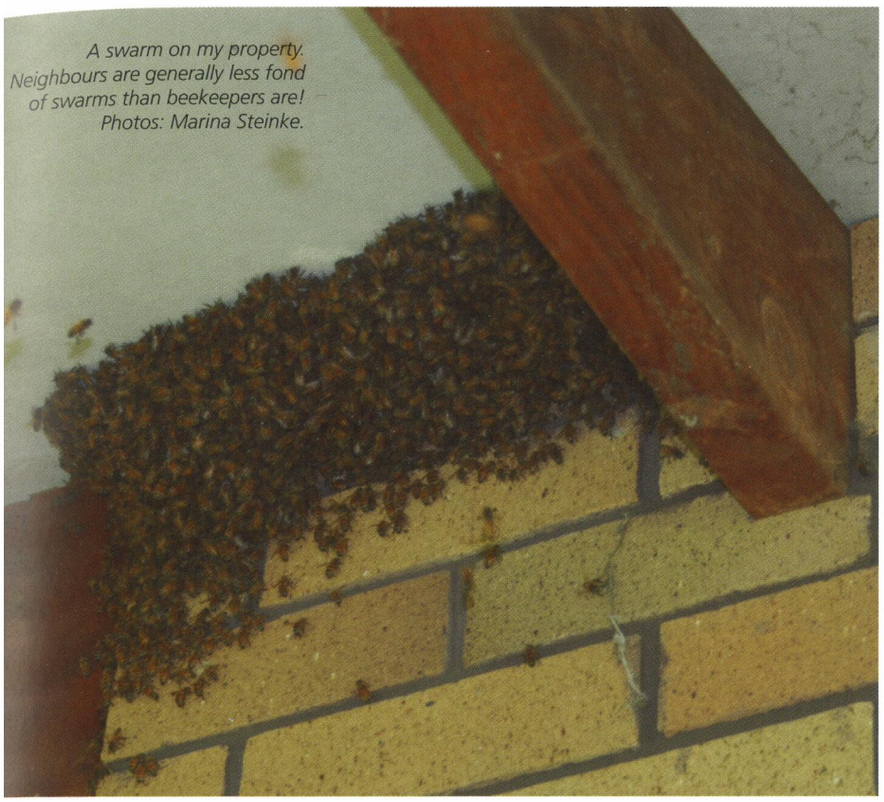


A swarm on my property. Neighbours are generally less fond of swarms than beekeepers are! Photos: Marina Steinke.

As I'm a beekeeper myself, a bee is not something I'm afraid of. However, most people are afraid of bees—and wasps. Most people can't even distinguish between a bee and a wasp. Beekeepers in town have to realise that hungry bees that can't find enough nectar will scare the people around them. A full-sized hive contains many more bees than a nucleus—which was sufficient to do all the required pollination work in a neighbourhood—so it's easy to overstock without even realising.

Often inexperienced beekeepers start with a swarm and don't replace the queen. This can lead to all sorts of problems: aggressive bees which sting unprovoked, swarms that settle in wall or roof cavities, and an overpopulation of bees if each and every swarm is allowed to grow into a full-sized hive.

Once neighbours have been stung or have had to put up with bees in their homes, the damage has been done. As they are now sensitised, they will become alarmed at the sight of a single bee (or wasp) and blame the beekeeper in the neighbourhood.

Once neighbours have been stung or have had to put up with bees in their homes, the damage has been done.

Keeping the peace in your neighbourhood

There are a few simple rules that prevent this kind of situation from occurring:

- buy a queen (or queens) from a breeder who is known for the docile strain (s)he breeds
- don't use the queen you got with the swarm you collected, even if it saves you money to start with
- start with one hive and build up numbers slowly. Hive numbers in towns are higher than you think. One hive too many and honey yields will be low or non-existent
- position your hive(s) sensibly. If you don't want your bees in your house or on your washing line, it is safe to assume your neighbours don't want them on theirs either!
- provide a water source for your bees on your property. If you find drinking bees inconvenient to have around, your neighbours will too
- if there is not enough space for the hives, water, flight paths on your property—don't keep bees
- in a built-up area, work your bees between 9am and 3pm, Monday to Friday if you can—not on the weekend or after school when the nuisance for your neighbours is maximised
- share the honey with your neighbours: they provided the nectar in the first place
- you are doing a top job if your neighbours don't even notice that you keep bees!

Keeping bees is a privilege. Most people appreciate the pollination service they provide and most gardeners I know are keen to provide fodder plants for bees to lure them to their garden so that the vegetables and fruit trees benefit from their activities.

However, with the ever-increasing number of people with bee sting allergies and stories of fatalities and near-fatalities circulating, beekeepers have to keep in mind that a bee is a formidable fighter equipped with a possibly lethal weapon that she is willing to use if need be. With only one hive we put tens of thousands of these potential warriors into our neighbourhood. If an abundance of these feisty fighters bother people as they go about their day-to-day business, beekeeping in town may become strictly regulated and therefore costly with required compliance certificates, inspections and qualifications.

I don't want this to happen and, I assume, neither do readers of this journal. Please think of your neighbours who don't have a bee suit for protection from angry bees!

PEST AND DISEASE CONTROL

SURVEILLANCE FOR EXOTIC BEE PESTS AND DISEASES: THE WHAT, HOW AND WHY IT'S IN OUR INTERESTS

Tony Roper, Apicultural Officer, AsureQuality Limited, Tauranga

The National Apiculture Surveillance Programme has been run as a standalone programme since 1991, and has been essentially unchanged over this time. It has two primary goals:

1. to detect an exotic pest or disease early enough for an eradication attempt to be considered. As a general principle, the sooner an exotic disease can be detected, the greater the chance of eradicating it.
2. to enable New Zealand to make country freedom statements with respect to exotic pests and diseases. This opens up access to overseas markets, as well as allowing New Zealand beekeepers to negotiate premium prices for their products.

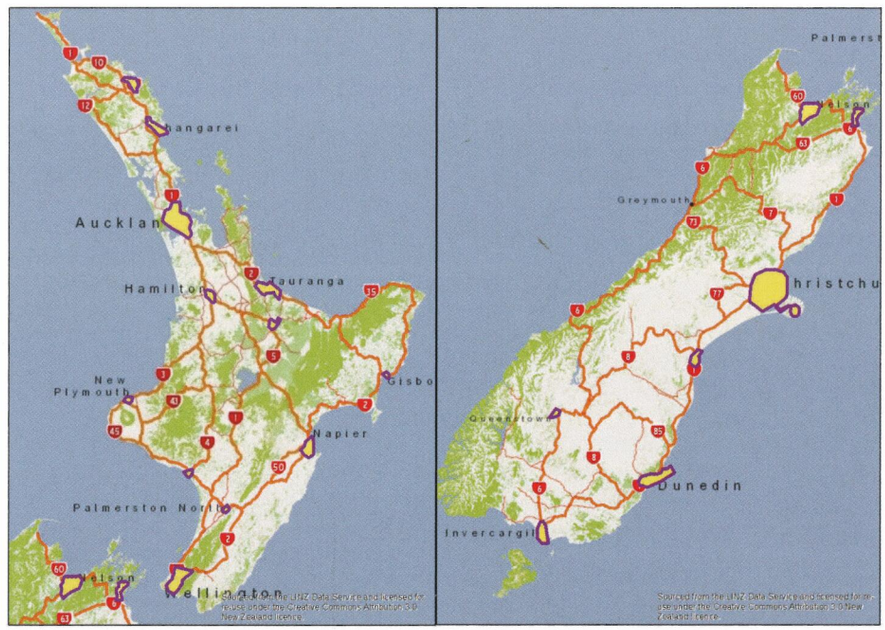
The programme is funded by the Ministry for Primary Industries (MPI) and managed by AsureQuality. The programme is split into two components:

1. a high-risk component: inspection and sampling of a number of apiaries in targeted areas.
2. a low-risk component: testing of bee samples provided from apiaries which are supplying live bees for export.

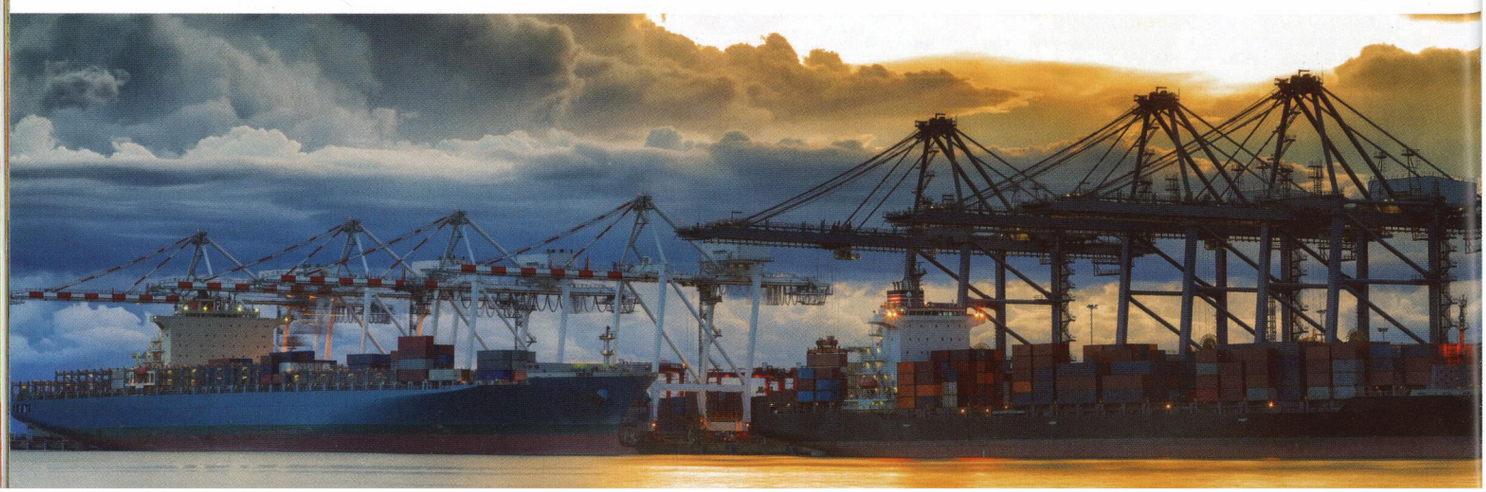
The high-risk component: apiary inspection

The programme limits its testing to 19 geographic high-risk areas (shown in the maps below), which are considered to be the most likely points of introduction of an exotic bee disease or pest and include:

- seaports
- airports
- large cities and densely populated areas
- tourist areas
- transitional facilities. These are approved premises where biosecurity high-risk goods are being handled when they first arrive to New Zealand.
- areas where there are large hive movements such as kiwifruit pollination.



Maps supplied courtesy of AsureQuality Limited.



Within these areas, 350 apiaries per year are randomly selected from the apiary database. They are subsequently inspected and sampled for a range of exotic pests and diseases of importance to the beekeeping industry, including the following:

- small hive beetle *(Aethina tumida)*
- European foulbrood *(Mellisococcus plutonius)*
- non-native bee species including the Africanised honey bee *(Apis mellifera scutellata)*, the Cape honey bee *(Apis mellifera capensis)* and other Apis species *(cerana, dorsata etc)*
- Asian mite *(Tropilaelaps clareae, Tropilaelaps koenigerum)*
- tracheal mite *(Acarapis woodi)*
- the parasitic fly *(Braula coeca)*

An additional bonus to the beekeeping industry is that the inspectors are also likely to identify American foulbrood when they are checking hives for exotic diseases, and AFB-infected hives have to be destroyed.

The inspectors doing the surveillance work are experienced beekeepers and are warranted by MPI as Authorised Persons (Level 2) under the Biosecurity Act. This means that they have legal authority to enter the property for the purpose of inspecting and sampling hives under the direction of an AsureQuality Apicultural Officer. However, the inspector will endeavour to contact the owner prior to the inspection visit, to arrange a suitable inspection date and time and obtain information that will be helpful such as locating the hives, etc.

Every hive in each of the apiaries must be visually inspected for signs of European foulbrood, small hive beetle, non-native bee species such as Africanised honey bee, Cape bee and other *Apis* species, and the parasitic fly. Suspect samples may be taken while in other cases (particularly if there is a threat to human safety), the hive will be reassembled and marked for further investigation and/or sampling. The inspectors will apply a miticide and sticky board test to the hives, and will take a sample of adult bees; they will also note any unusual symptoms associated with the apiary. They will return the following day to collect the sticky boards.

The bee samples and sticky boards are sent to MPI's Plant Health and Environment Laboratory. The bees are tested for external mites, and are then dissected and examined for evidence of tracheal mites. The sticky boards are inspected for mites and insects.

If your apiary is selected for inspection, you will not be advised of the results of the tests unless they are positive. If a test does come back positive, an exotic disease or pest investigation will be launched. Every year, we prepare an article summarising the results for the programme.

continued...

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The low-risk component: samples from export supply apiaries

At least 300 apiaries, supplying bees for export, will have an adult bee sample taken and tested for both internal and external mites. Each supplier is required to provide samples from up to 25 apiaries that they use to harvest bees for export. The testing is also performed at MPI's Plant Health and Environment Laboratory.

In previous years considerably more than 300 apiaries have been sampled and tested. This is not a problem, as it increases the sensitivity of the programme! As with the high-risk samples, beekeepers are not informed of negative test results.

Apiary database

The National Apiculture Surveillance Programme relies heavily on the apiary database for the design of the surveillance programme and the selection of apiaries for inspection. Because of this, the programme provides 25% of the costs to collect and maintain the information on the database. MPI funds an additional 25% of these costs from other budgets, and has also provided funding for APIWEB, the web interface for beekeepers to update their personal records in the apiary database. You can access it at http://apiweb.asurequality.com.

WHAT YOU CAN DO TO HELP

You can check and update the information on your apiary via APIWEB. Having current and accurate information means we lose less time scheduling and performing the visits. APIWEB gives you greater flexibility to update information outside of business hours at a time that suits your schedule.

While the inspection of hives under this programme is valuable both for trade and for the success of any incursion response, it is recognised that your eyes and ears are equally (if not more!) important. To keep beekeeper awareness and knowledge at a high level, this surveillance programme funds the production of popular articles on exotic diseases. In addition, it pays for production of the Honey Bee Exotic Disease and Pest pamphlet. All beekeepers are encouraged to become familiar with the signs of exotic pests and diseases of honey bees by reading published articles, the pamphlet, as well as other available material. When working your hives, always be on the lookout for any signs of an exotic pests or diseases, and if you suspect an exotic pest or disease, ring the MPI Exotic Disease Hotline **0800 809 966.**

Finally, a special thanks to all those beekeepers that are taking part in this programme and are supporting the beekeeping industry. Both MPI and AsureQuality greatly appreciate your support because without it, the surveillance we perform for exotic bee pests and diseases would not be possible.

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BEE PRODUCTS STANDARDS COUNCIL

BPSC REPORT

John Hartnell, Vice Chairman

The Bee Products Standards Council met on 19 November 2015, in Wellington, with representation from Council members, the Ministry for Primary Industries, Food Standards Australia & New Zealand and Catalyst NZ.

The council received a financial report, noting that contributions to operating costs were being shared equally by the council representative's parent bodies.

Passion vine hoppers* (Scolypopa australis) *on tutu. Photo: Frank Lindsay.

Mānuka honey: The council discussed the current mānuka certification trademark application and sought comments from the MPI representatives with regard to the determination of 'mānuka' type characteristics and attributes that will lead to the final regulatory standard being set. MPI indicated that that it expected to be able to table the draft standard for monofloral mānuka honey towards the end of 2016. A definition for mānuka blend and multifloral mānuka honey would also be developed.

Laboratory testing (mānuka): it was noted in discussions that the use of the terminology Non-Peroxide Activity (NPA) was still in use by various laboratories. MPI advised this was permissible for products that were not food items. Also discussed was the potential of adulteration. MPI advised that it was addressing this issue.

Jane Lancaster, Catalyst NZ, presented her Pyrrolizidine Alkaloids (PA) report and updated members on the work programme relating to harvested samples during 2015. Also discussed was the potential licensing of New Zealand independent laboratories to undertake testing for PAs. The Codex Committee would be updated with the New Zealand trial results before their next meeting.

Tutin consultation document: MPI advised that it had corrected an error in the draft document relating to 'box-section honey' and that the revised standard was due to be released shortly. MPI, in consultation with the Department of Conservation, advised that there were two 'tutu' species that are likely risk host plants; other sub-alpine mountain species were deemed of insignificant risk.

Tutin Campaign: two information pamphlets had been released to all registered beekeepers; the final release was due out before the end of December. It was agreed to support the continuation of this campaign for January, February and March 2016.

Market access matters: council members were briefed on the October visit by the Certification and Accreditation Administration of the People's Republic of China (CNCA) and the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ).

A number of key matters were raised, in particular, minimising the potential for fraud, traceability, and the requirement for registration of exporting businesses and facilities. A full industry audit is scheduled for mid-March. Key discussion centred on honey quality, and referenced a number of potential points of concern—excessive filtration, excessive heating, over processing with the emphasis on maintain a "Natural Honey Standard" at factory level. The other key concern was the volume of mānuka honey arriving in China, versus production in New Zealand.

Regulatory Framework for Export Bee Products: consultation is under way, the key focus being compulsory electronic traceability and indelible drum labelling.

Other matters raised were:

- the requirement for a Chinese registration programme covering Registered Manufacturing Premises (RMPs), and the potential for this to extend to the registration of beekeepers

- discussion on what constitutes a beekeeper versus an owner of a hives
- the use of country of origin labelling for specific markets and
- the requirement for increased frequency of verification audits to back up our industry credibility.

MPI cost recovery: notice has been given that a further review is under way. MPI was encouraged to review the submissions from 2014/2015 made by industry as part of this process.

AFB PMP and regional diseaseathons: it was confirmed that because of the new health and safety laws due to come in to effect on 1 April 2016, the AFB Management Agency was no longer supporting this initiative. Further information would be forthcoming.

Conference 2016: the BPSC will be invited to have an industry-good stand at conference. This presents an opportunity for delegates to discuss industry matters relevant to the BPSC and market access, etc.

Apimondia 2015: Young Mee Yoon addressed the council with a summary of the various matters raised at the Congress; in particular, Nuclear Magnetic Resonance profiling, residues, GMO contamination from pollen substitutes, heavy metals in honey and honey adulteration.

INDUSTRY UPDATE—FIRST QUARTER 2016

Honey adulteration: MPI has advised that it is investigating a case of honey adulteration. This has resulted in the recall of a New Zealand brand honey label. This is not a health safety issue and there is no risk to the consumer. Adulteration of any food product is unacceptable: the ramifications to any industry are extremely serious, and such practice will not be permitted at any point in the product's life.

Chinese audit of honey industry: as I write this, auditors from AQSIQ and the China Inspection and Quarantine services (CIQ) are in the process of auditing our industry; the events relating to the product recall described above have raised additional concerns that could have been avoided. Our industry must take notice and ensure that such practice is eliminated completely.

Bee Products Export Assurance system: because of concerns around market access and regulatory requirements, MPI has strengthened the rules relating to bee products, effective immediately. More information is available by visiting http://foodsafety.govt.nz/industry/exporting/documents/legislation.htm

The BPSC had its most recent meeting in Wellington on 21 March 2016. As this coincided with the press date of the April journal, this meeting will be reported on in an upcoming edition of this journal.

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- Multiple sensors allow Site Comparison and Aid Queen Selection.
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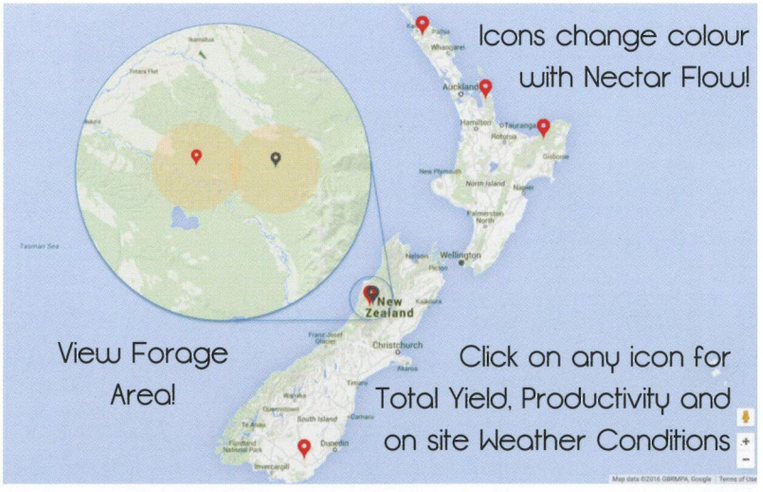

Meet Huw Evans, MD and founder of arnia at the New Zealand Apiculture Conference 19th to 21th June.

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COMMENTARY

GETTING OUR FACTS STRAIGHT ABOUT **BEE NUMBERS**

Frank Lindsay, Life Member

Beekeeper numbers and beehive numbers have increased remarkably in the last few years, mostly due to big business putting money into mānuka honey production. Some are finding out that it's not a reliable flow: a few average crops, a few where there's no crop, but the really good production years can be counted on one hand.

After the flow, hives are placed on wintering sites ready for the spring build-up, often close to existing apiaries. The only problem is that aren't sufficient pollen resources available these days to support this number of hives.

Some areas have had all the willows cut out from along the streams and riverbanks, even though crack willow and grey willow were the target species. Willows are a keystone species for the spring build-up of honey bee colonies. Not much that isn't a pest plant can match willows for early pollen and nectar.

It used to be, when the Commodity Levy Act was brought in around the 1990s, that the average apiary size was around 16 hives. Some areas could only support 10 hives while others supported 20 or more. There are many more commercial beekeepers around and to accommodate these hives, the number of apiaries and the number of hives in each apiary have increased considerably.

Perhaps it's time to put some numbers in front of beekeepers. The following is excerpted from an article by Katherine Kiefer in *Bee Culture* recently (Kiefer, 2016).

BEE FACTS AND NUMBERS

A colony, from January 1 through December 31 needs 44–88 pounds of pollen (depending on quality, weather, etc.) and 150 pounds of honey (including that needed to make wax) to thrive—make the necessary brood and to collect all that they need to survive the year. Honey harvested for human consumption is above this base number of pounds for colony health, so for this example we are pulling a 55 pound average. Total requirement per colony per year is 205 pounds of honey. The general ratio of nectar to honey is 32mg of nectar yields 17mg of honey (Canadian Honey Council "How to Make a Pound of Honey"). This is dependent on weather and the nectar source. Bee math—one ounce has 28,350 mg in it. To make 205 pounds (76,586,435.763mg) of honey, the bees need to collect 92,988,000 mg of nectar. Each worker bee, weighing about 80 mg herself, can carry about 70 mg of nectar in the honey sac. So, per colony, about 1.5 million bee honey sac loads of nectar are needed annually. About 100 flowers nectar yields 17mg of honey, so 2.6 million flowers yield one pound of honey. So, to make 205 pounds of honey, workers must make 533 million flower visits. This quantity is not in your neighbor's "Bringing Nature Home" flower planting. (also *Hive and the Honeybee,* Dadant, 7th printing of 1992 edition, Honey Bee Nutrition, Ch.6)

A bee can fly about 2.5 miles from her hive, which is a circle five miles in diameter = 23.75 square miles X 640 = 15,200 acres. Average commercial beeyard has 60 colonies. For this fly zone there MUST be more wildness than say, corn, or pavement, or flower gardens, or hay fields or forest.

An important component of modern large numbers of bees in beekeeping is having natural environments large enough for the bees to survive. Large environments. Fields of bloom with good nectar and pollen.

(Note from Frank Lindsay: I haven't changed the northern hemisphere calendar or the pounds to kilograms.)

continued...

You don't produce healthy bees from pollen-deficient stock.

With all this in mind, is there sufficient forage around your hives? Some of you will be thinking, "This doesn't matter, as I feed pollen substitute". Yes, they work to a certain extent but overseas labs have been unable to rear bees on these for a prolonged period. Nothing beats real pollen. Look at the amount of royal jelly under just hatched larvae. You don't produce healthy bees from pollen-deficient stock.

So this winter, get out and talk to your farmers. Download the 'Winning with willows' booklet from the NZ Poplar & Willow Trust website: http://www.poplarandwillow.org.nz/documents/winning-with-willows.pdf. Obtain some cuttings from them and get planting in those wet spots. If possible, plant willows within 100 metres of your apiaries. It only takes a few full-grown trees of each species to sustain an apiary. Farmers also benefit as the willows will provide shelter for stock, and can be cut and used as a supplement in drought years.

It might be hard to persuade some of our new farmers to accept willows on their land, as this generation has been brought up on supplements. Farmers have cut down trees to operate the huge irrigators, but there must be somewhere where they can grow a few trees. The downturn in dairying may have sharpened farmers' minds as to what actually counts in farming. To sustain clover production in their pasture, our bees need good healthy pollen to build up on, just like their cows depend on good pasture.

Protect our queen breeders' patch

Another thing that the mānuka gold rush has an impact on is our queen breeders. A few are located in mānuka areas, and have been there long before mānuka become the 'in' product. The breeders are there because these areas are isolated. These queen breeders flood the area with drones of the breed they want, but now that beekeepers are moving in close to or beside these areas—all for the chance to get mānuka—these queen breeders can no longer guarantee a quality product.

We all rely on queen breeders for our future. Not all of us are willing or can afford to pay for instrumentally inseminated queen bees. If you move hives into an area, talk to the locals, especially queen breeders. Clearing your hives out of drones is a major undertaking, so it's better to leave the area free for the queen breeders.

We all rely on queen breeders for our future.

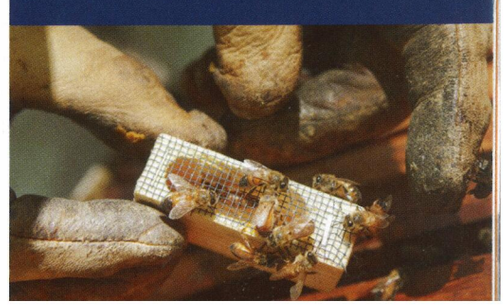
Reference

Kiefer, K. (2016, February). The politics of killing bees. *Bee Culture*, Retrieved March 10, 2016, from http://www.beeculture.com/the-politics-of-killing-bees/

Notes and further reading

Katherine Kiefer and Kim Flottum, the editor of *Bee Culture*, recommend reading the book *The new wild: Why invasive species will be nature's salvation*, by Fred Pearce. It helps with more facts worldwide.

Katherine Kiefer's e-mail address is beesweet1@gmail.com



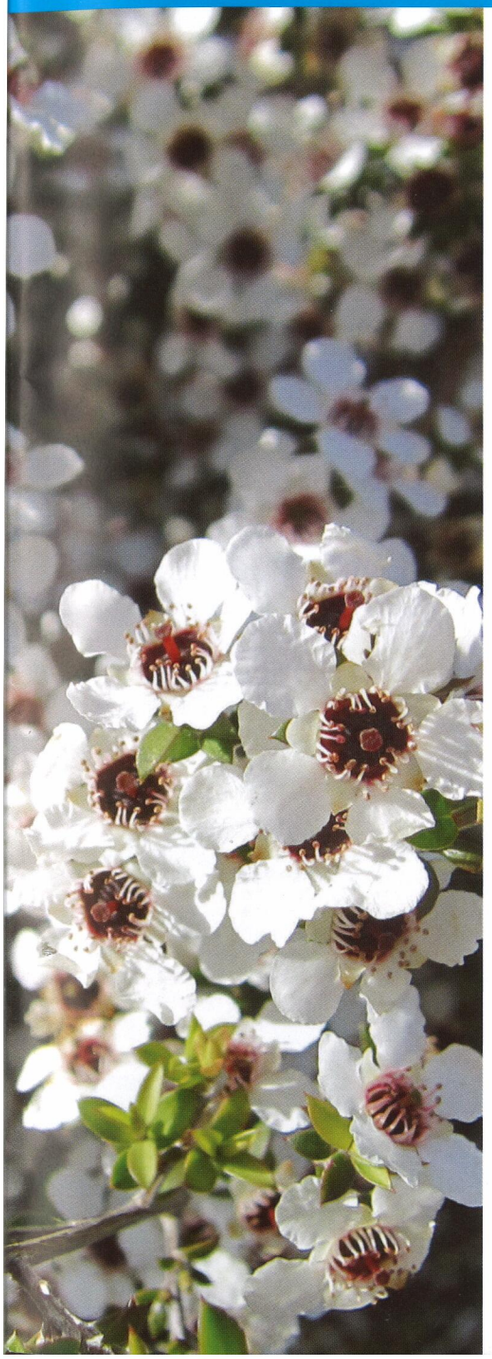
MPI

PROTECTING AND ENSURING INTEGRITY IN NEW ZEALAND HONEY

Scott Gallacher, Ministry for Primary Industries

New Zealand mānuka honey is a product that has grown significantly in value over the past few years. Our reputation for honey production and export depends on the integrity of our products and the credibility of our systems.

One bad batch or mistake can bring the integrity of not just the honey market but the well-earned reputation of New Zealand as a whole as a trusted and credible provider of safe food into question.



As an industry, everyone's in this together.

It's important to understand that, as an industry, everyone's in this together. To this end, MPI is dedicated to working with industry and overseas regulators to strengthen the regulatory systems underpinning the production and export of New Zealand honey so consumers can be confident they're getting a high-quality and authentic product.

Currently we do this in a number of ways:

- providing official assurances (government-to-government assurances that New Zealand products meet strict requirements)
- withholding official assurances for product that is not eligible for export
- providing advice to industry on labelling to ensure products meet the legislative labelling requirements.

MPI is carrying out an extensive science programme to develop a robust science-based definition for monofloral manuka honey.

Scott Gallacher.

In addition, MPI is carrying out an extensive science programme to develop a robust science-based definition for monofloral mānuka honey.

There is no agreed scientific definition for monofloral mānuka honey, so this work will provide clarity about the characteristics of monofloral mānuka honey when sold as a food and provide a scientific base for assurances.

The programme, which began in 2014, is due for completion in 2016. Once a scientific definition has been finalised, MPI will make changes to the regulations so mānuka honey sold as food can be checked and verified.

Industry support has been key to helping us secure approximately 160 single apiary-sourced honey samples so far and MPI looks forward to this continued support. We will

continued...

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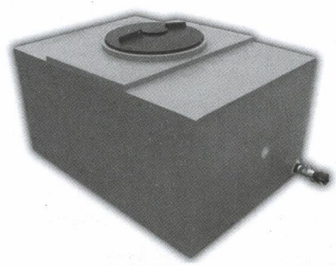

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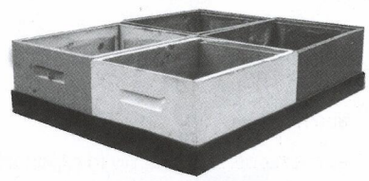

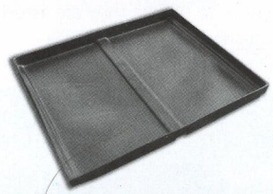

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MPI has also recently publicly consulted on and introduced new requirements for the beekeeping industry to further strengthen the regulatory framework for bee product exports

also continue to seek industry feedback and ensure science and assurance programme outcomes are fit-for-purpose and practical.

MPI has also recently publicly consulted on and introduced new requirements for the beekeeping industry to further strengthen the regulatory framework for bee product exports so our systems can continue to be best practice.

The new requirements will see an increase of audits for bee product processors to ensure processors are meeting all their requirements. The frequency of such audits will be based on performance.

In addition, the requirements mean:

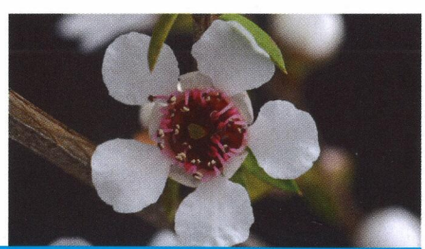
- industry will have to increase the traceability of its products by using MPI's electronic certification system
- industry will have to label all bulk honey and retail packs; and
- all beekeepers who supply to exporters will have to ensure they are listed and checked by MPI.

MPI has issued two notices under the Animal Products Act 1999 to introduce the new requirements and a transition period to allow industry to make changes to meet them.

These regulatory changes, along with MPI's science programme to find a robust scientific definition for monofloral manuka honey, will enable authentication of mānuka honey to limit the opportunities for fraud and adulteration.

Ultimately, this will reinforce the integrity of all New Zealand honey exports and uphold New Zealand's well-earned reputation as a trusted and credible trading partner.

Scott Gallacher is the Ministry for Primary Industries Deputy Director-General Regulations and Assurance.



More information on the new requirements can be found on MPI's website: www.mpi.govt.nz/exporting/food/honey-and-bee-products/requirements/

Information on MPI's Mānuka Honey Science Programme can be found here: http://mpi.govt.nz/growing-and-producing/manuka-honey/

BEEKEEPING AND THE LAW

New Zealand beekeepers have a number of legal obligations that must be met regarding American foulbrood disease, including:

1. Only keep bees in moveable frame hives.
2. Keep access to apiary sites clear from obstruction.
3. Not feed drugs or substances that mask, obscure or conceal the symptoms of AFB.
4. Not keep beehives more than 30 days in a place other than a registered apiary.
5. Register all apiaries with the Management Agency.
6. Mark all apiaries with the beekeeper registration code.
7. Change registration numbers only by the beekeeper who has the code number assigned to them, unless permission to do so is provided by the management agency.
8. Remove all identification codes when transferring the ownership of the hives.
9. Where a case of AFB is found, the owner of the hives must report to the Management Agency within 7 days of becoming aware of the case.
10. Complete an Annual Disease Return by 1 June each year.
11. Destroy equipment and bees associated with a case of AFB within 7 days.
12. Not deal with or transfer ownership of material associated with a case of AFB.
13. Sterilise beekeeping equipment only by approved methods.
14. Ensure hives are inspected for AFB by an approved beekeeper with a DECA provided to the Management Agency by 30 November (unless there is a certificate of inspection exemption).

Under certain conditions there are some exemptions for these obligations.

[Excerpted from the revised edition of *Elimination of American Foulbrood Disease without the use of Drugs—a practical manual for beekeepers,* by Dr Mark Goodwin, page 89. For more information and a video, go to www.afb.org.nz/beekeeping-and-the-law]

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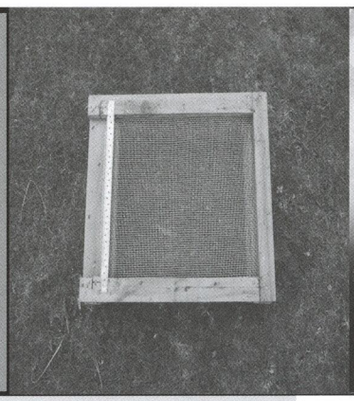

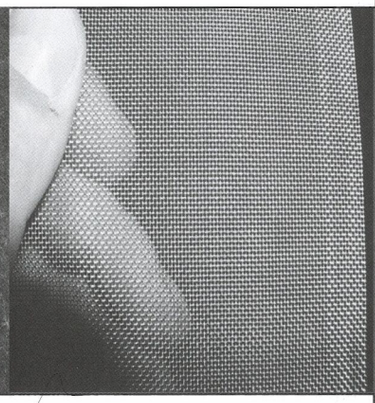

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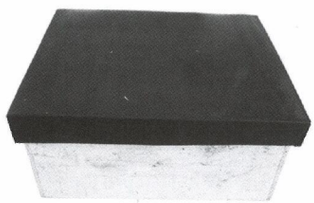

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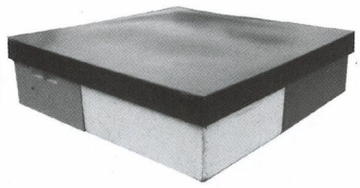

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ABOUT THE APIARY

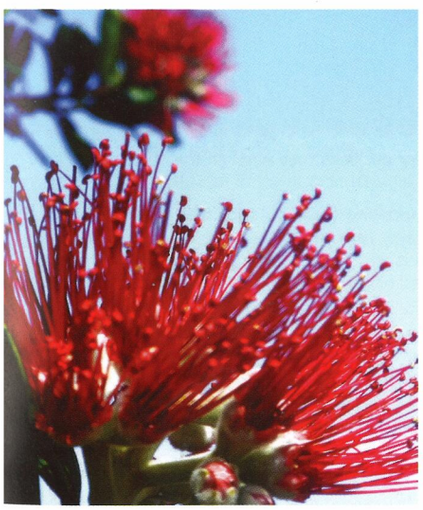
IT'S TIME TO **WINTER YOUR HIVES**

Frank Lindsay, Life Member

Autumn is upon us. Days are getting shorter. Night-time temperatures are falling; dew is appearing on the lawns overnight. The poplar and willows have turned yellow and have started losing their leaves. The skinks in the garden are growing fat tails. All these signs point to winter not being far away.

As I write this, lacebark *(Hoheria populnea)* is in full flower with bees all over the flowers; likewise koromiko *(Hebe stricta)*. Where there's been rain, catsear *(Hypochaeris radicata)* and lotus major *(Lotus pedunculatus)* are in flower. Along the railway lines, fennel *(Foeniculum vulgare)* is just finishing. Gorse *(Ulex europaeus)* has started flowering, providing much-needed pollen.

With the warm, dry summer around Wellington, the spider mites have managed to establish on the gorse but there's still a lot of gorse around.



One puzzling thing has been the lack of pohutukawa honey in the hives for the last three years. It has flowered well but hasn't produced a lot of nectar. Normally when you shake the flowers onto your hand, it will be covered in nectar, but that's not happening recently.

In the rural areas where it's been particularly dry, there's hardly a blade of grass and the bees are in defensive mode. Further north where they have had rain, the bees are fanning at the entrance in the evening, suggesting there's a nectar flow on.

Calluna on the Desert Road. Photo: Frank Lindsay.

For the first time I have seen giant willow aphids *(Tuberolachnus salignus)* on the willow cuttings in my garden. I hadn't noticed them earlier but spotted wasps hanging around so dispatched them with a spray of dishwashing liquid and water. I hope this isn't the cause of the flow in my hives further north, as it crystallises as hard as concrete. Willow honey is quite pleasant when first extracted but then becomes bitter over time.

Beyond my little patch in some select areas such as the central North Island desert, heather *(Calluna vulgaris)* continues to yield. In the South Island around the ranges, honey dew will start to be produced once it has rained.

I did a quick trip north in early March. While driving through the Desert Road, I was surprised at the number of bees that met their end when struck by our car. The apiaries there are fairly close together and very close to the road because of the difficult terrain. The bees were gathering Calluna nectar in mild, wind-free conditions, but countless numbers were being collected by passing vehicles. This must have a detrimental effect on the colonies and could affect the wintering of the hives. I was told at a garage that it also upsets the bus drivers as they have to clean their vehicles and nectar, once dried, takes a little elbow grease to remove.

While driving through the Desert Road, I was surprised at the number of bees that met their end when struck by our car.

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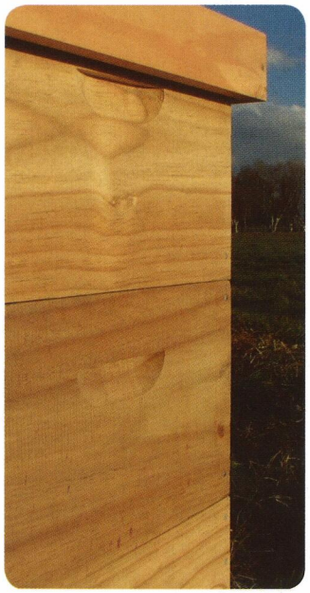

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1. In sugar syrup: add 1 ml of Nozevit+ in 200 ml of sugar syrup (in 1:1 ratio),
2. In pollen patty: add 1 ml of Nozevit+ per 500 g of patty,
3. By spraying: add 1 ml of Nozevit+ in 200 ml of sugar syrup and spray the bees in the hive with it.

Regardless of the way of usage, use Nozevit+ as a feed supplement 2 times in spring (10 days apart) and 2 times at the beginning of autumn (10 days apart).

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Advice for wintering hives

Pretty soon we will see another sign that winter is coming. When the nectar flow ceases, the queen will reduce her laying and if she is a good queen, the bees will start to expel the drones. When this happens, queen rearing for the season ceases, unless you continue to feed sugar syrup to drone colonies or make them queenless. Queen cell-producing colonies also have to be fed to simulate a spring nectar flow.

I have discussed in recent articles the requirements for wintering bees. These are:

- lots of young 'mite-free' bees filling the super(s)
- a young queen laying well and
- a good supply of honey and pollen frames in at least one full-depth super (or the equivalent if using three-quarter-depth supers).

If you don't have a full super of honey, feed now (put the feeders on after dark to discourage robbing). Some will have top feeders or division board feeders but if you don't, use a large Milo or coffee tin and put a couple of dozen small brad holes in the lid. Feed a ratio of two parts sugar to one part of water over the top super.

Make a crown board out of coreflute rather than cut a hole in your crown board. Cut a hole in the coreflute the size of the tin, upend the feeder tin and place it on a couple of runners so the bees can easily access the holes in the lid. A hive should take two litres a day, so monitor and keep feeding until the desired amount of stores is achieved.

Bees can winter in a box of any size, even a small nuc box, provided the bees completely fill the box as this allows them to regulate the temperature in the cluster.

Small colonies can die in a harsh winter if there aren't enough bees. Small colonies become stressed and Nosema can develop in the bees, shortening their life. They may have a fighting chance if the colony is placed on top of a regular hive. (The heat given off by the colony below helps the nuc bees to regulate their colony temperature). The key thing is to make sure the colony is full of bees.

Small colonies can die in a harsh winter if there aren't enough bees.

Got 'em! Photo: Frank Lindsay.

Ventilating the hive

A topic I haven't discussed in recent articles is ventilation. Bees give off water vapour, warm air rises and the water vapour can condense when it hits a cold surface. I provide a small opening in my split/crown boards to allow the moist air to get away. I need to do this because quite a few of my apiaries are not in full sun during the winter. Moisture can build up and cause mould to grow in the outside damp frames.

It may not be necessary to provide top ventilation if you have open mesh bottom boards. The bees can generally move any moist air out if these are on the hives.

Pests, including the human variety

I'm also putting out baits for the mice and rats around my apiaries, placing the baits in an empty plastic container with a fairly wide mouth (just big enough for a rat to get in). I place three baits in each and check them regularly. These bait stations (three in each apiary) are placed under the pallets or hives away from any birds.

One can tell when a rat is around, as it will move the plastic bottle a few metres away from its original position, perhaps trying to move them to their nest. By wiring in the baits, the mice and rats are required to eat the baits then and there, instead of storing for winter. I don't particularly like these rodents because they cause so much damage to supers and frames. A few mice can ruin a stack of supers by urinating all over the frames and eating away the dark wax or any with pollen.

My best total catch is 14 mice in a dead-out hive (three generations of mice in the spring). I take great pleasure in dispatching them if they have damaged my frames. I block any holes they have made and then remove a few frames at a time, gradually reducing the hive to two supers high. Mice can quickly jump out of a single super but can't jump two full-depth supers high. I gradually remove most of the frame and then use the hive tool to dispatch them as they hide between the frames.

The other nuisance species we sometimes come across, especially in public areas during school holidays, is the teenage boy. This species just likes to push over hives for a dare. They never think of the consequences and are often well away when the bees react.

An open hive is an invitation to all the nearby wasps to come to a free dinner. The only problem is that once they get the smell of a hive on them, they continue to raid all the other hives near the fallen hive, taking everything: bees, brood and honey.

Even though the best time to kill them has passed, Vespex can still do the job when all the wasps in an area are concentrating on your hives. Close the entrances and start feeding them poison baits. This stuff should work within an hour. This is the only registered product that can be used to bait wasps. It has to be monitored so that no other invertebrates are poisoned. The only alternative is to find the nest and smother it with fuel (petrol, etc). To locate wasp nests (other than standing on them), follow the wasps as they fly home. The best time is just after the bees have finished flying when the sun is low and bright.The sunlight reflects off their wings as they fly straight back to the nest.

continued...

Argentine ants around beehives. Photo courtesy of Dr Phil Lester, Victoria University of Wellington.

Wasps make.nests in dry banks and soft ground where a root has rotted. They start small and excavate the cavity as their numbers increase through the summer.

Robbing season starts when the nectar flow ceases. Twenty thousand bees with nothing to do will begin probing hives nearby for weakness. Any under-strength hives will be targeted. Close down entrances. Put robbing screens on nucs. These can be as simple as a 100-mm square of fly screen stapled or pinned across the entrance, leaving a finger-sized tunnel to the side for the bees to use. Robbers are attracted to the hive smell emulating from the entrance and will be drawn to it rather than the tunnel entrance.

Ants? I only get the tiny Australian ant that builds colonies on top of the crown boards. These are easily dispatched by hand, or sometimes I apply some formic acid to kill them. They don't like a damp environment, so a branch of green leaves left under the roof will dissuade them from returning.

Robbing season starts when the nectar flow ceases.

Improving apiary biosecurity

One thing we don't do well in New Zealand is apiary biosecurity; that is, preventing anything from spreading to another apiary.

In Australia, farmers are strict about where you go and what you bring onto the farm. We have Argentine ants in several area of New Zealand. They are becoming a problem to beekeepers there, as they take over beehives, often eating the brood and the honey.

Are our migratory beekeepers checking and cleaning ants off their pallets and under their bottom boards (using disinfectant) before moving hives? I for one don't want to see ants brought down from Northland or Gisborne to within close proximity of my hives. Once ants establish in an apiary, it makes it difficult to continue to keep bees there.

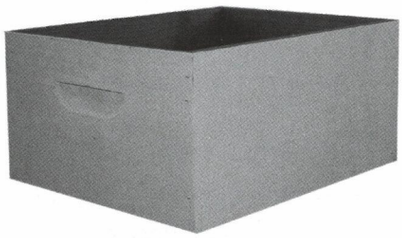
Check out Plant Health Australia's website for more information on what we should all be doing: http://www.farmbiosecurity.com.au/videos/

One thing we don't do well in New Zealand is apiary biosecurity; that is, preventing anything from spreading to another apiary.

Also check out the bee industry section of the Plant Health Australia website for more good information: http://www.planthealthaustralia.com.au/industries/honey-bees/

Plant Health Australia looks after beekeeping rather than Animal Health Australia, as bees and beekeepers relate to plants and pollination rather than cattle. Learn more at the Apiculture New Zealand National Conference at Rotorua in June.

continued...



TIP: Nothing is worse than seeing a stainless-steel plant water-stained. You can prevent staining by polishing the outside of new equipment with food grade mineral oil on a nylon stocking. Polish it well into the pours in the stainless steel. Then it's just a matter of repeating this after the final clean-down for the season.

For those with JB horizontal radial extracting plants, the rails can be polished weekly so that the frames slide easily into and out of the extractor.

Drought means possible tutin problems.

THINGS TO DO THIS MONTH

Winter down hives. Check feed, as some hives have been brooding up and could have used the honey you left on the hive. Check the effectiveness of your mite treatments. Make sure top-bar hives have 10 frames with honey in them. Feed now rather than later in the spring.

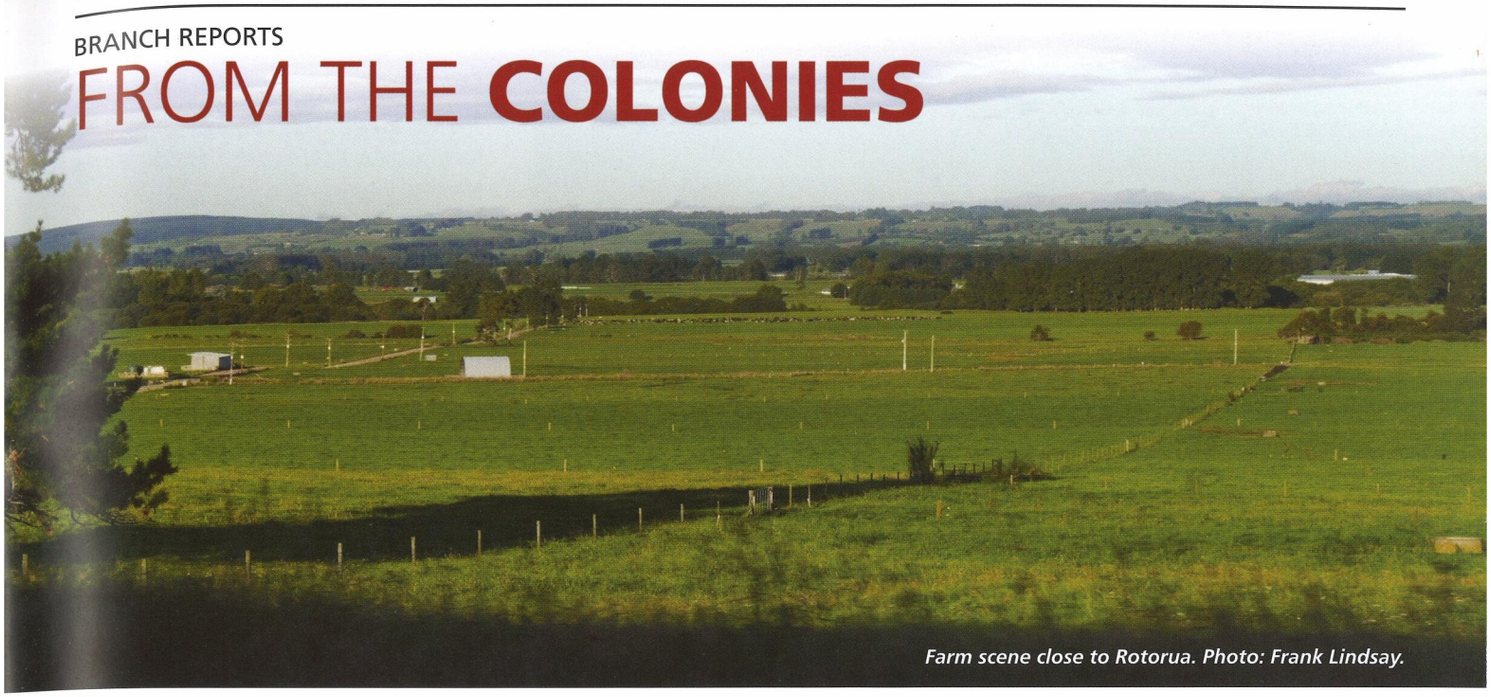
Carry out an AFB check, especially after the robbing season has finished. Slope bottom boards to the front so rain runs out of the hive. Fit mouse guards or reduce entrances to 400 mm x 8 mm. Replace rotten or damaged supers and bottom boards. Attend to fences, check for wasps and control grass.

During extraction, go through the honey supers and reject any old, dark frames you cannot see light through. Replace these with a new foundation frame. Store frames with foundation or light frames on the outside with darker ones towards the middle. Freeze stored supers to kill wax moth eggs and larvae or store in a shed that is open and well lit, and provides a good airflow through the supers. (Fit queen excluders top and bottom to prevent mouse damage.)

Drought means possible tutin problems. If you have tutu bushes within five kilometres and high passion vine hopper *(Scolypopa australis)* numbers, test your honey. From observations, numbers are high again this year. Any honey sold or bartered has to be tested for tutin. Clubs can have their members' samples composite tested to save money. Check out the new tutin regulations on the MPI website.

BRANCH REPORTS

FROM THE COLONIES



Farm scene close to Rotorua. Photo: Frank Lindsay.

Waikato

As I write this, there is a whiff of autumn in the air, a lower temperature, a chill in the wind. I think it is about time after many weeks of high temps and humidity. Even the bees do not appreciate the muggy weather and could be quite shirty when disturbed during the introduction of mite strips.

I drove to Hamilton to attend a branch meeting last week and noted how green the Hauraki Plains were, green around Morrinsville and right through to Hamilton. Green, but not a lot of evidence of bee fodder in flower. No pennyroyal, and only a little catsear and wild carrot on the roadsides.

The word at our latest meeting is that the willow aphid is back again and a real nuisance for Waikato beekeepers. It has had an effect from about mid-January, even being brought into some manuka supers, crystalline on arrival. I understand that it is nutritionally not good for the bees as it contains the wrong balance of sugars. Furthermore, it is playing havoc with extracting machinery. Some value the willow honey dew as feed honey, where the bees mix it with other autumn nectar sources such as lacebark *(Hoheria)* and koromiko *(Hebe)*. However, that does not seem to be the case in the main Waikato area. The continuance of the research programme should be of paramount importance.

There was some robust discussion at our meeting with the new organisation, RMP changes, the weather, and willow aphid the main topics prior to my leaving mid-afternoon. Ideas for guidelines for how to run regional hubs were discussed. It should be important for all branches and those with an interest in forming a hub to have input into this—members of hubs will be mainly the grassroots beekeepers who are the suppliers/primary producers of this valuable commodity, to say nothing of the important pollination service they provide.

Apprenticeship programme for UK beekeepers

At the start of this year we hosted a beekeeping student (apprentice) from the United Kingdom. Tim lived with us and worked alongside John for at least five and sometimes six days a week. Tim was the youngest of four apprentices to come to New Zealand for the first of what will be a continuing programme. Tim was very helpful and very willing to learn and we believe he expanded his knowledge base considerably during his time here.

I am the contact person for the programme, which will be happening again next summer. My UK counterpart from the British Beefarmers' Association is currently writing about the programme and the students' New Zealand experiences for their magazine and will be making the article available for publication in *The New Zealand BeeKeeper*. So keep a lookout for more information coming soon.

In the meantime, if you think you might have the time and expertise to host an apprentice beekeeper from the UK for about six weeks next summer, please register your interest with me at pjbee@actrix.co.nz

- Pauline Bassett

Bay of Plenty

I am hearing from most BOP beekeepers that it has been a challenging season. Some have labelled it the season of two-week honey flows. Most people have honey but not the quality or quantity that most people wanted. Beekeepers who walked away from pollination contracts may be questioning their decision.

The good side is that hive health seems to be pretty good, with no bad outbreaks of varroa and only the occasional mention of AFB. Conditions in the BOP are pretty warm still and we have had enough rain for lawns to be mown every week since Christmas. There is some nice pollen coming and we are making the most of the small flow of pasture honey coming in to winter down the hives. It has been one of those seasons that promised a lot but didn't deliver. Mother Nature is definitely the boss.

We are all looking forward to a break and catching up with people at the conference.

- Bruce Lowe

continued...

Hawke's Bay

February was one of the hottest ever and everyone struggled with the heat. Parts of the Bay are pretty dry, while others are wet from massive thunderstorms. Crops have been reasonable, considering the weather.

I have been enjoying the company of my English apprentice, George Davis, and will miss him. I recommend this programme to anyone who enjoys passing on knowledge as well as learning from others. *[See Waikato report.]*

- John Berry, Branch President

Southern North Island

Honey harvest reports are showing that it has not been a good year. In many cases mānuka flows have been very small; some beekeepers reported only a few frames of honey in the hives. There has been a tremendous variance even between apiaries in the same area. On the whole bush and clover flows are OK but again, not great. In my own case, the yield was about half of what I expected. The upside is that the price of honey has gone up, which softens the blow.

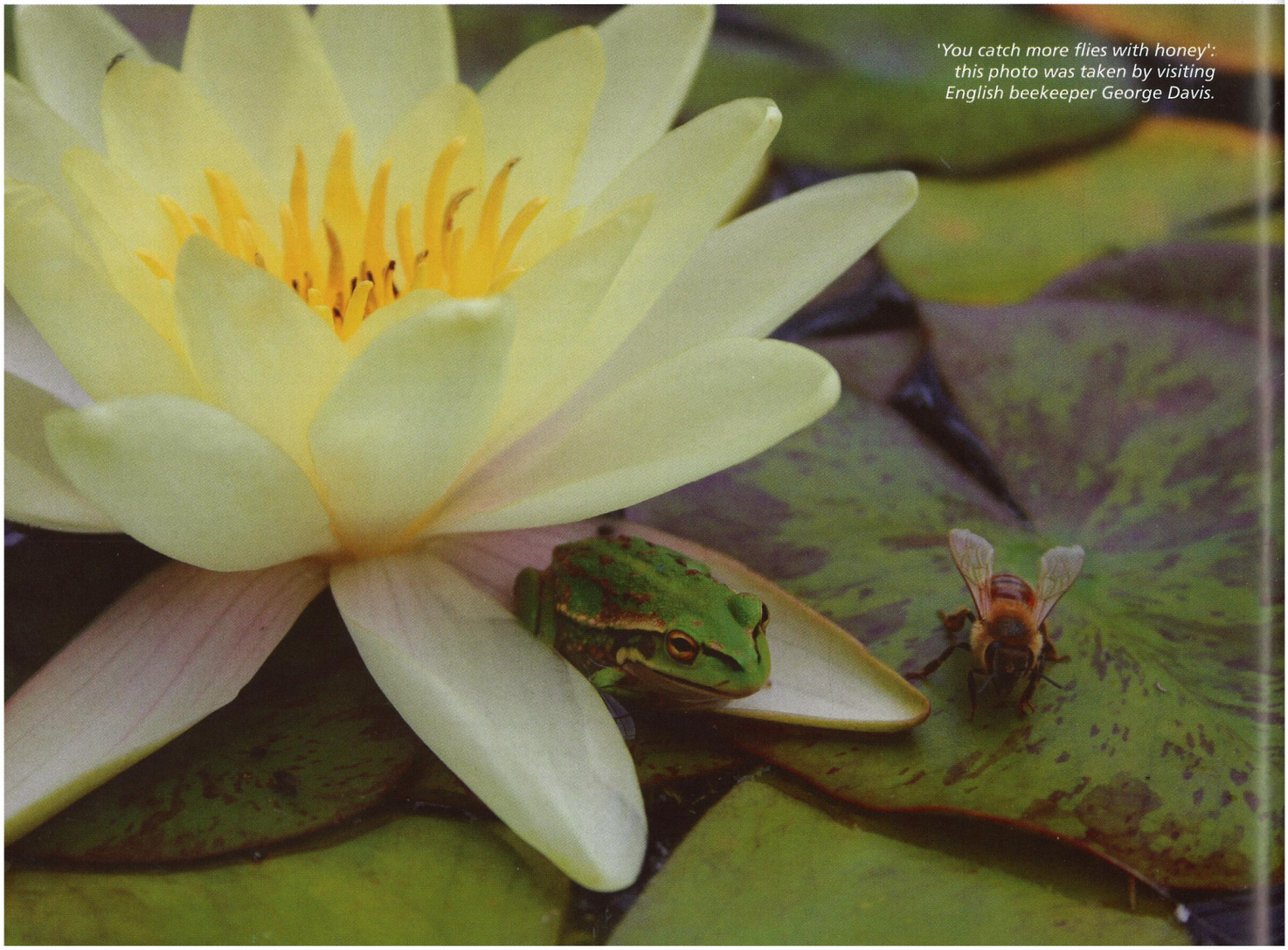
Around the Wanganui backcountry, a number of thefts have been reported. In some instances the hives have gone, but in other cases just the honey has been stolen (either the whole honey supers or the just the frames containing honey). Many beekeepers are looking into their apiary security. Often an outlay of $300 to $500 to protect and record movements on an apiary site is well worth considering, especially with the value of mānuka honey. *[Editor's note: see article on page 16.]*

Camp Rangi

The Branch held a very successful 'Camp Rangi' at the end of February. Over 110 people attended the event, which went from Friday evening to Sunday midday. The emphasis was on queen rearing, with a number of experts attending to offer advice. Our principal guest speaker was Mike Palmer from Vermont, USA. The event will be reported on in more detail in the next issue of the journal.

Voting by members on the Apiculture NZ proposal was hotly discussed during the Camp Rangi weekend. Some were strongly for the rules and merger and others were very much against, especially the new constitution. Overall there was little opposition to the proposed merging and the new body. The differences were over the details of how to finance and govern the new identity. We wait for further information.

- Neil Farrer, Life Member



'You catch more flies with honey': this photo was taken by visiting English beekeeper George Davis.

Nelson

The weather summary for February in Nelson indicated that it has been the hottest on record, with an average air temperature of 20.3°C. It has definitely felt that way when trying to do anything in a bee suit. I have also found sleeping at night more difficult but maybe I haven't worked hard enough, or been drunk enough ☺. It is more pleasant now though, with some cooler evenings happening.

Bees appear to be doing OK. Honey flows have been very mixed, with some hives doing reasonably but others poorly, so overall I think it will be a bit below par this season. Days are definitely getting shorter, and queens will begin to slow down, so we have ensured there are enough stores for the winter. Most beekeepers are harvesting, shifting hives, and beginning to put varroa strips in.

We have had a few reports of wasps causing issues. Wasp numbers need to be reduced to ensure they don't steal too much from hives or prevent bees from foraging. There are some new effective methods to achieve wasp control and all concerned about these troublesome critters should check them out.

The recent Nelson Bee Club meeting had an excellent talk and discussion concerning AFB presented by Nigel Costley. This was part of the new updated presentation, with videos from Dr. Mark Goodwin. It is definitely an improvement on the original version. The club's flow hive has finally arrived, after ordering it nearly a year ago and managing to get through Customs, after the appropriate fees. There have already been several potential issues raised over its use and long-term practicalities. Nevertheless, it will be interesting to get the flow hive established at the club apiary over the next few months, and get members to observe and experience how it works.

- Jason Smith

Above and at bottom left: visitors to the beehive. Photo: Frank Lindsay.

ATTENTION ALL DUNEDIN-AREA BEEKEEPERS!

Sarah Hight, a film student at the Centre for Science Communication at Otago University, is making a film about American foulbrood.

Sarah is looking to film beekeepers searching their hives, detecting disease and eliminating infection.

If you are a beekeeper in or near Dunedin with an infected hive(s) and are willing to be filmed, or if you are interested in learning more about the project, please contact Sarah at sarah.hight1@gmail.com

Note: Sarah only needs close ups of identifying, removing and burning the infected hive, which will keep your location and identity completely confidential and anonymous.

Canterbury

We have a continuation of dry, dry, dry, as will be the case in many areas of the country. This of course will have a flow-on effect of low returns for many beekeepers as their main clover crop will be all but non-existent, except for irrigated areas. Bees are now in robbing mode, which is making hive inspections, varroa treatments, etc more difficult to complete.

The colonies column is all about communication with our members who sometimes only read a magazine for industry information.

Recent changes to the RMP requirements will impact on a lot of beekeepers without them even being aware the situation was likely to change. It has been a bit of a surprise for some beekeepers to find audits for all RMP premises will be carried out twice a year, even for a small operator that extracts his total crop within a two- to three-month period. The requirement for all beekeepers to be listed with MPI in order that their honey may end up being exported appears to be one of those bureaucratic requirements that have little to do with the safety of food. If the listing of beekeepers is to guard against theft of hives and honey, then I think we should give thieves a bit more credit that they will find ways round the system: after all, that is what they do in being a thief.

Regarding the vote about the change of name and constitution, we wonder how many members were aware that we were voting for a new structure for the NBA. Fewer than half of our members voted. We had no choice about the change of name and some of us are concerned about what this means for the loss of the NBA's identity after over 100 years. We are also concerned that the new name means little to the general public: will they look in the phone book or Google 'Apiculture' when they have a swarm in their backyard, or will they continue to look under 'bees' or 'beekeeping' for information?

- Noel Trezise

APICULTURE NZ CLUB CONTACTS AND SPECIALTY GROUPS

AUCKLAND BEEKEEPERS CLUB
www.aucklandbeekeepersclub.org.nz
Meets second Saturday monthly at Unitec, Pt Chevalier, Auckland

Kim Kneijber
P: +64 9 418 1302
E: kimk_bees@hotmail.com

Carol Downer
P: +64 9 376 6376
E: thefairy@xtra.co.nz

Please send all correspondence to:
PO Box 44-427, Pt Chevalier 124, Auckland 1022

FRANKLIN BEEKEEPERS CLUB
www.franklinbees.co.nz
Meets second Sunday each month at 733 Paerata Rd, near Pukekohe. 10am start, for cuppa and discussion, and open the hives at 11:30. Visitors welcome.

Graham Dyche, President
P: +64 9 238 9854
E: president@franklinbees.co.nz

Joan Leitch, Secretary
M: +64 21 226 2135
E: secretary@franklinbees.co.nz
Correspondence to PO Box 1082 Pukekohe 2340

WAIKATO DOMESTIC BEEKEEPERS CLUB
www.waikatobeekeepers.org.nz
Meets every third Thursday (except January) at 7.30 pm.
For prospective members: please contact the Secretary for venue meeting place.

Peter Gray, President
P: +64 7 855 0290
E: president@waikatobeekeepers.org.nz

Cathie Breeuwer, Secretary
P: +64 829 5955
M: +64 21 061 4647
E: secretary@waikatobeekeepers.org.nz

ROTORUA HONEY BEE CLUB
http://www.rotoruahoneybeeclub.co.nz
https://www.facebook.com/RotoruaHoneyBeeClub
Meets monthly

Kim Poynter, President
P: +64 21 926 937
E: birchwoodfarm@xtra.co.nz

Ruth Thomas, Secretary
P: +64 21 180 3970
E: rotoruahoneybeeclub@gmail.com
Correspondence to: 374B Hamurana Rd, RD7, Rotorua 3907

WANGANUI BEEKEEPERS CLUB
Meets every second Wednesday each month (except Jan), at 7.30pm, at Canaan Apiaries, Mosston Road, Wanganui.

Neil Farrer
P: +64 6 343 6248
E: nfarrer@xtra.co.nz

MANAWATU BEEKEEPERS CLUB
Meets every fourth Thursday in the month at 7.30 pm
Newbury Hall, SH3, Palmerston North

President: Pat Lawrence
P: +64 6 322 8214

Matthew Telfer, Chairman & Media Liaison
M: +64 21 0273 2875
E: matt@manawatubeeclub.org.nz

Georgina Morrison, Secretary
E: secretary@manawatubeeclub.org.nz

(NB: Preferred address for email correspondence)
Mailing address: PO Box 4103, Manawatu Mail Centre, Palmerston North 4442

THE BUZZ CLUB OTAKI
Meets every third Wednesday of the month at 7pm at the Waitohu School Hall, Te Manuao Road, Otaki.

Sarah Bayliss, Chairperson
P: +64 6 364 0555

Ken Wells, Secretary
P: +64 6 364 5966
E: thebuzzclubotaki@gmail.com

WELLINGTON BEEKEEPERS ASSOCIATION
www.beehive.org.nz
Meets first Wednesday of the month (except Jan) in the Johnsonville Community Centre, Main Hall, Moorefield Road, Johnsonville. 7 pm Beginners' session, 7.30 pm main meeting.

Richard Braczek, President
5 Tyndall St, Waiwhetu, Lower Hutt 5010
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E: ibraczek@paradise.net.nz

Jane Harding, Secretary
M: +64 27 421 2417
P: +64 4 499 4123
E: janeh@xtra.co.nz

WAIRARAPA HOBBY BEEKEEPERS CLUB
https://www.facebook.com/Wairarapa.Beekeepers
Meets every second Sunday of each month (except January) at 14:00 (2 pm)

Mr. Bernard Watt, the Swarm Man and Club Coordinator
P: +64 27 256 2026
E: b.watt@xtra.co.nz
or email the secretary at: aewrootbeer@gmail.com

MARLBOROUGH BEEKEEPERS ASSOCIATION
www.marlboroughbeekeepers.co.nz
Meets the first Saturday of the month at 10 am at the Blenheim community gardens off Budge Street.

Philip Vercoe, President
P: +64 3 929 3127

Silke Powell, Secretary
M: +64 21 268 4149
E: pestpowell@farmside.co.nz

NELSON BEEKEEPERS CLUB
www.nelsonbeekeepers.org.nz
Meets first Tuesday Feb–Dec inclusive, 7–9 pm
Waimea Lounge, Richmond A&P Showgrounds
Lower Queen Street, Richmond.

Jason Smith, President
M: +64 27 249 9370

Ian Henbrey, Secretary
P: +64 3 548 6220
M: +64 27 546 8283
E: tasmanbees@gmail.com

CHRISTCHURCH HOBBYIST BEEKEEPERS' CLUB
www.chchbeekeepers.org.nz
Meets on the first Saturday of each month, August to May, (except January for which it is the second Saturday), at 681 Cashmere Road, commencing at 1.30pm.

Myrtle Davey, Secretary
E: chch.beekeepers@gmail.com

WEST COAST HOBBY BEEKEEPERS CLUB
Meets at Kumara Junction Cafe/Honey House from 10am till 12pm.
2016 club dates: 18 Jun, 20 Aug, 15 Oct and 19 Nov.

President: Sue Roper
M: +64 21 251 1861
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APINZ REGIONAL HUBS
Refer to page 75 to request details of these meetings.

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www.umf.org.nz

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M: +64 27 441 8508
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NZ HONEY BEE POLLINATION ASSOCIATION
NZ QUEEN PRODUCERS ASSOCIATION
Russell Berry
P: +64 7 366 6111

NZ COMB PRODUCERS ASSOCIATION
John Wright
P: +64 9 236 0628

NZ HONEY PACKERS AND EXPORTERS ASSOCIATION INC
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Mary-Anne Thomason
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BEE PRODUCTS STANDARDS COUNCIL
www.bpsc.org.nz

Dr Jim Edwards, Chairman
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E: jim@worldveterinaryconsultants.com

IS YOUR **CLUB** OR **GROUP MISSING** FROM HERE?
OR HAVE YOUR DETAILS CHANGED?

Contact info@apinz.org.nz. Please also send any changes or additions to: editor@apinz.org.nz

NB: listings on this page are limited to clubs and groups that are financial members of Apiculture New Zealand.

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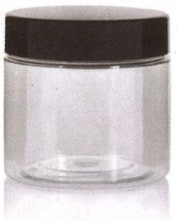
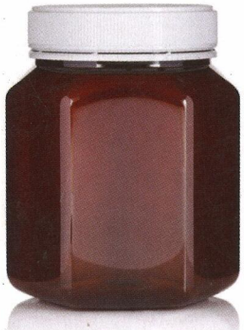


360ml Round Pot

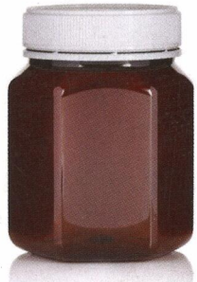
500gm Round Jar

340gm Round Jar
(coming soon)

250gm Round Jar



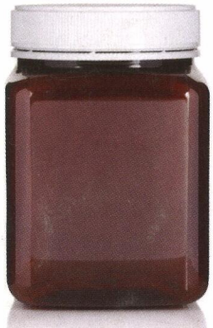
2kg Hex Jar



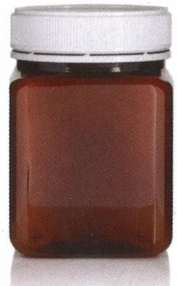
1kg Hex Jar

500gm Hex Jar

250gm Hex Jar



2kg Square Jar



1kg Square Jar

500gm Square Jar

250gm Square Jar

NEW ZEALAND'S MOST EXTENSIVE RANGE OF HONEY PACKAGING

Pharmapac's range of export quality packaging for honey has now expanded to contain square, hex & round jars. Sizes range from 250gm - 2kg.

Pharmapac is a New Zealand owned company, with more than 30 years in the business of designing, manufacturing and producing plastic packaging solutions for not only local, but an ever growing list of international clients.

All of our products are manufactured in our ISO9001-2008 accredited facility in Auckland, New Zealand.

No supply contracts are required.

Pharmapac follows well defined parameters of quality, conforming to various national and international standards. As these standards change, we work with our suppliers to continue to meet these requirements.

For more information or product samples please contact us at:

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88 Wairau Road
Glenfield
Auckland 0627

+ 64 9 444 9631
sales@pharmapac.co.nz

100% NEW ZEALAND OWNED & OPERATED

TELARC REGISTERED ™
Quality ISO 9001

* Our stock jar colours are amber & clear. Stock closure colours are white, blue, gold, green & black. For your own custom coloured closures, a minimum order of 5000 units will apply.

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NEW ZEALAND MADE

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