April 2012, Volume 20 No. 3

The New Zealand BeeKeeper

Focus on AFB

- VSH update
- Signs of EFB
- BPSC addressing serious problems
- Observation hives

The New Zealand BeeKeeper is the official journal of the National Beekeepers' Association of New Zealand (Inc.)

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Front cover: Scenes from the aftermath of the 3 March storm in the Wanganui and Taranaki regions. These photos, along with commentary, were provided by Chris Valentine of Kai Iwi Honey.
Main photo: my hives are all good but my uncle's pine forest is destroyed.
Bottom left: the situation after I cut the top of a tree off of my hives.
Bottom right: my bees are not very happy.

10 reasons **not** to join the NBA

By Barry Foster, NBA President

Twice a year—in the April and October journals—I can write to all registered beekeepers. This month I want to aim my comments specifically at those beekeepers who don't belong to the NBA or to any bee club around the country.

There are good reasons NOT to join the NBA, as follows.

1. Don't join us if you are a miserable, selfish, penny-pinching, mean, non-public-spirited sod. If you did join, you would be unbearable.

2. Don't join if you hate helping out your beekeeping mates and prefer to sponge off others. In fact, stop reading the journal altogether because it is written and largely produced by volunteers.

3. Don't join if you hate the thought of 'democratic process' and everyone having their say to make the industry better and stronger. I invite you to take an extended working holiday to North Korea instead. Your skills and personality might be better used over there to help out with food shortages.

4. Please, please, please don't join if you're 'just a hobbyist' or if you believe that the NBA's just for the fat-cat commercial guys. This is just a myth. The fact is that many hobbyists contribute a hell of a lot to the NBA and beekeeping in general. We welcome their participation and commitment.

5. Please don't join if you think that all vital research into keeping bees healthy—particularly keeping varroa under control—is a waste of time and money, and not worth paying for. Or, don't join if you're happy not to pay for it yourself, but keen to take advantage of it when other beekeepers do pay for it. We do have a budget for bee research and would, with your help, like to grow it so we can do more.

6. And on that note, don't bother joining if you'd prefer to whinge about all the industry's problems, but don't want to get involved in finding solutions. And don't join if you prefer to stay removed from an industry association that tries hard to help out all beekeepers, but whose advice, information, support and assistance you're happy to take for free.

7. Please don't join if you make it your business to place your hives so close to others on manuka sites to the extent that the resource is overloaded and no one gets a crop, as well as thinking we all don't have a potential issue with AFB when hives are so close together.

> "...the independent voice of beekeeping..."

8. Please don't join the NBA if you couldn't care about the decisions that governments and officials make that affect your bees and your business. The NBA works hard to influence government policy so that it's beneficial to beekeepers—but why should you care?

9. Don't join the NBA if you couldn't care about exotic pests, diseases, and other biosecurity risks that could cause major problems for all of us. It won't happen to us. Yeah right!

10. Last, but by no means least, please don't join the NBA if you are a "she'll be right: the NBA doesn't need me" sort. Well actually, we do need you. Unfortunately, "she won't be right without you!"

If you are none of the above, then you are welcome to join the NBA and we would very much respect and value your membership. You will gain enjoyment from the company, knowledge and camaraderie of our members that you will not find to the same extent outside of membership.

The real reasons beekeepers first established and now continue with an organisation like the NBA comes back to those intangible, often-forgotten but hugely important benefits like:

- having an independent organisation speaking out loudly for beekeepers with, for and against government
- helping to support and grow a strong industry that makes us all better and more profitable beekeepers
- sharing valuable information about best practice beekeeping that helps keep our bees safe
- fighting to keep exotic pests and diseases out of New Zealand
- showcasing to New Zealand and New Zealanders just how valuable our industry—and our bees—are to the rest of the country.

The NBA is the independent voice of beekeeping in New Zealand

I saw this very clearly at an Auckland conference in the late 1990s. It was the conference that led to the great split-up that precipitated the establishment of the Federated Farmers Bee Industry Group (BIG).

At this Auckland conference we had a presentation from a senior member of Federated Farmers about the benefits beekeepers would derive if they joined the Feds.

The mood was quite tense as obvious differences between NBA and the Feds arose

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and each conference delegate had to choose between the two organisations.

While there were obvious differences between the two, the reason the NBA survived that BIG recruitment drive—and why the NBA is so strong today—is that beekeepers value having an independent body like the NBA.

Yes, we sometimes argue amongst ourselves. True, we don't always get every decision right. Admittedly, there's a cost to being a member.

But in my mind, and in the minds of hundreds of your fellow beekeepers, many of who have been members for years—in fact, generations—there is huge value and benefit in belonging to the NBA. To me it's a bit like paying an insurance premium so that all the values the NBA stands for can be maintained.

Being independently minded (and often hard-nosed) people, beekeepers like having their own NBA.

We're the little guy punching above our weight with government. We're the battlers making sure that the big agri-sector boys don't get it all their own way. We'll do the hard yards to help out all beekeepers, big and small.

I invite you to join the NBA. Joining us will make us—and you—stronger.

The National Beekeepers' Association of New Zealand

Notice of 2012 Annual General Meeting

The AGM of the NBA will be held at the
War Memorial Conference Centre, Napier
Thursday 28 June 2012
commencing at 9.00 am

Chief Executive Officer

Important Membership Information

Members of the NBA are asked to renew their annual subscriptions by January 1 each year. Members who choose not to renew by that date will lapse.

In line with this, members who don't renew by **January 1** will not receive copies of the February and March issues of *The New Zealand BeeKeeper* journals, as has been the case previously.

However, members who renew after January 1 are entitled to receive back copies of the journal, if they are available. Due to a higher than usual level of membership renewals earlier in the year, the February 2012 journal ran out. We can email a file copy or a printed copy to any who renew from now.

Please keep an eye out for membership renewal forms that will be sent out each year from October onwards, printed in the journal and emailed to members. Renewal forms are also available on the NBA website, and on page 21 of this journal.

- NBA Executive Council

AsureQuality Apiary staff moving north!

Tony Roper, Apicultural Officer and his wife, Margaret, South Island Apiary Registrar, have decided to move back to the Bay of Plenty after 10 years in Christchurch. Their reason for shifting was not because of the recent earthquakes but to be closer to their family. Tony and Margaret will be located in the AsureQuality office at 11 Hull Road, Mt Maunganui (near the shipping port). They are keen to meet local beekeepers at every opportunity.

Both Tony and Margaret will continue to work for South Island beekeepers. Tony will support Marco Gonzalez with South Island work, especially with RMP audits and export verification. Tony will also manage the South Island Exotic Bee Disease Surveillance programme from Tauranga.

Margaret will continue to look after South Island apiary and beekeeper registrations, AFB reporting, ADRs, etc.

Their new direct number is 07 574 2596 (which they will share) and their fax number is 07 572 0839. Tony's cell number remains the same: 021 283 1829. Tony recommends that beekeepers use the AsureQuality toll free line 0508 00 11 22.

Please note that their email addresses remain the same; i.e., tony.roper@asurequality.com and margaret.roper@asurequality.com

New cappings spinner

There's something new on the market from Maxant Industries: a honey/wax separator for the larger-scale beekeepers that can separate the wax at a rate of 13 to 25 drums per day.

This is a standard-looking spinner but works something like Ward's old hummer design (which also likes a constant feed of honey). It has rotating blades in the centre that move up and down ejecting the wax flakes down through the centre, and all for US $10,000. I'd like to see one working on *YouTube*.

We normally support New Zealand producers (especially if they advertise in *The New Zealand BeeKeeper*) but in a bad year, beekeepers buy on price, throughput and reliability.

- Frank Lindsay, NBA Life Member

Bee Week: 20–24 August 2012

Every year the National Beekeepers' Association runs a National Bee Week.

This year Bee Week will run from 20–24 August.

We would like to encourage you to join in and help promote this very important week of the year to raise awareness of the value of bees to Kiwis and our country.

Head Office is currently working on the 2012 media plan and developing new competitions for newspapers and magazines.

A finalised plan will be circulated to all Branch Secretaries by mid-April.

Let's get involved, spread the word and show Kiwis how important honey bees are to New Zealand.

How to look for signs of EFB

By Marco Gonzalez, Apicultural Officer, AsureQuality Lincoln

European foulbrood (EFB) is a highly contagious bacterial disease of honey bee larvae present in all countries with a beekeeping industry. The disease has not been found in New Zealand. All castes of bees are susceptible to the disease.

Mellisococcus plutonius is the causative agent of this disease. The first indication of EFB infection is that infected larvae changes to a creamy colour and has a smooth 'melted' appearance. Infected larvae sometimes appear twisted in their cells. As the disease advances within the colony, frames with capped brood have a shotgun appearance. Unlike American foulbrood (AFB), larvae infected with EFB die before they are capped (pre-pupal stage). Larvae have a particular sour smell associated with EFB disease that is very different from the smell of AFB.

In countries where EFB is endemic, it appears as a seasonal disease, most often in the spring, and is associated with stressed beehives. The stress could be due to migratory beekeeping, malnutrition (pollen shortage), bad weather or other diseases or parasites present.

Bees will eventually build up a level of resiliency to EFB and therefore EFB rarely kills a colony but rather, reduces colony population. This 'ill thrift' can impact both pollination efficiency and honey production. For instance, in South Australia beekeepers estimate that the cost of a case of EFB left untreated in spring equals the loss of a full super of honey for that season. (Michael Stedman, personal communication September 2007).

How could EFB reach New Zealand?

Tourists are visiting New Zealand more than ever before: more than 2.5 million visitors per year arrived to our country in the year ending March 2011 (www.stats.govt.nz, accessed 20 Feb 2012). There is a chance that someone returning to or visiting New Zealand could bring in EFB through contaminated honey or other bee products and equipment. Also, there is the risk of infected swarms of bees arriving on our shores with shipping cargo or visiting international yachts or other seacraft.

If an EFB incursion were discovered, the success of any eradication attempt would depend on the circumstances around the discovery. Reducing the time between incursion and discovery would increase the chance of a successful eradication attempt. Additionally, in areas where hives are moved regularly, good records of hive movements will be critical to completing a timely delimiting survey (i.e., finding the extent of spread). Though MAF funds a surveillance programme that targets high-risk introduction points, our beekeeping industry cannot afford to be complacent. Increasing the level of passive surveillance through awareness and education will contribute significantly to minimising the time between a potential incursion of EFB and its subsequent discovery.

> "...a positive identification needs to be made in the laboratory."

Disease transmission and symptoms

EFB is highly contagious, spreads very quickly and is transmitted by bees feeding contaminated honey to larvae of up to 48 hours of age.

In nature the disease spreads naturally by swarming, drifting and robbing activities. In the apiary, the beekeeper is the main spreading agent by inadvertently moving or transferring infected bees, brood, frames and gear as well as feeding infected honey.

EFB cannot be reliably identified in the field and a positive identification needs to be made in the laboratory. Thus New Zealand beekeepers face the challenge of identifying EFB in their beehives when most signs and symptoms of this disease are easily confused with those of endemic brood diseases and disorders. (See Figure 1.) Table 1 opposite compares main symptoms of EFB with common endemic bee diseases and syndromes.

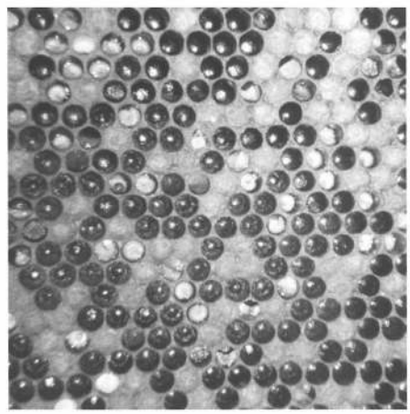

Figure 1. Typical EFB symptoms in an EFB infected hive. Source: AsureQuality Limited, 2007.

Once a beehive is identified as suspected of being infected with EFB, you must follow the same cleaning and disinfection protocol required following opening an AFB-infected beehive. This is to prevent transmitting the disease to other beehives or even to other apiaries.

Scorch your hive tools and wash your hands or gloves and smoker bellows with soapy water. Mark the suspect hive and reduce the beehive entrance to prevent robbing if necessary.

If beekeepers suspect that their hives are contaminated with EFB or other exotic pest or disease, they should report these findings **immediately** through to the **0800 809 966 MAF Hotline**. An AsureQuality Limited Apicultural Officer will follow up on

Table 1. Distinguishing features of EFB, endemic brood diseases and syndromes.

FEATURES	EUROPEAN FOULBROOD	AMERICAN FOULBROOD	HALFMOON SYNDROME	PARASITIC MITE SYNDROME	SACBROOD
Age of dead brood	Larvae usually 2–3 days old. Usually larvae die before pupation at the 'C' or pre pupal stage. Younger than AFB.	Older than EFB > 3 days Larvae usually die at pre-pupal or pupal stages after the cells are capped. Larvae never die at the 'C' stage.	Curled (younger) larvae, including capped curled larvae in advanced cases.	Similar to EFB, from the 'C' stage to the pre-pupal stage.	Larvae usually from 4 days old. Pre-pupal stage only. Cells often capped over.
Appearance of brood comb	Patchy brood pattern with larval cells not capped over. Sometimes sealed in advanced cases when there may be perforated, sunken cappings.	Pepper pot irregular cappings. Sealed brood with sunken cappings, darker in colour, irregularly perforated. Sometimes cappings completely removed.	Patchy brood pattern. Multiple eggs in many cells, eggs attached in chains joined end to end. In advanced cases, high percentage of drone brood in worker cells.	Pepper pot pattern with chewed cappings.	Sealed brood. Cappings perforated or may be completely removed, sometimes sunken.
Colour and shape of dead brood	Larvae change colour from pearly white of healthy larvae to dull white, yellow then yellowish brown. Body segmentation retained. The tracheae (or air tubes) are very white against the yellow bodies. Larvae may be twisted up the walls of the cell (corkscrew) or lie in a halfmoon scale around the lip of the cell.	Off-white, then coffee-brown, then dark brown to black. Loss of body segmentation and structure.	Off-white, yellowing to dark brown. Body segmentation retained Tracheae may be evident as lines in larvae.	White/yellow colour Body segmentation retained	Larvae change from white to yellow, coffee brown, grey, then black. Heads are usually darker than body. Body segmentation maintained.
Dead brood consistency	Recently dead larvae are watery to pasty in appearance and rarely show signs of ropiness. Old infections are usually creamy or rubbery and can rope up to 20 mm, but not to the same extent as AFB. The ropiness is due to the presence of secondary bacteria *Paenibacillus alvei*. Larvae collapse as if melting and eventually dry to form a loosely attached brown scale.	Sticky like glue when fresh and often ropes out. Once it dries it forms a black scale and is difficult to remove from the cell wall.	Watery contents and can be removed from cell. Doesn't rope out very well.	Scales can be removed. Brood never ropes like AFB.	Plastic sac, skin remains intact with watery contents. Pre-pupae easily removed from cell. May 'rope' a little but strand is not even coloured and is blotchy in appearance. Not elastic like AFB.
Odour of brood	Varies from odourless to sour or foul smell depending on the secondary invading bacteria present.	Can have foul smell (rotten, fishy smell).	Sour, urine-like.	No evident odour.	None to slightly sour.
Appearance of dead larvae and scales (dried larval/ pupal remains).	Larvae 'corkscrew' up the cell or are found lying across the mouth of the cell in an open 'C' or halfmoon shape. Capped brood can rope out (secondary bacteria). Scale dries out and is easily removed from cell.	Larvae slump down along the bottom 'V' of the cell. Often rope out. Tongue sticking up from front end of cell base if died in pupal stage. Larval scale shaped like bullet against cell floor. Scale dries out and is difficult to remove.	Larvae corkscrew up the cell or lie around the cell walls or the lip of the cell in a halfmoon shape similar to EFB. Easily removed from cell. Rubbery scale with no tongues present.	Larvae often slump along lower cell wall like AFB. Larvae can also spiral up the cell wall or coil in a 'C' shape at the cell opening. Doesn't rope out.	Can dry down to scale. Rarely ropes out. Easily removed in one piece from cell. No tongue present, but larval head may be curled upwards and resemble tongue.
Tips for identifying	Very contagious disease. (i.e., likely to be in several hives in the apiary). Usually appears when there is a low nurse bee to larvae ratio in the spring. Larvae die before capping and often twisted up the cell walls or in a 'C' shape at the entrance.	Ropiness test and tongue, hard to remove scales.	Drone brood in worker cells, multiple eggs in cells, eggs stuck end to end and often to the cell walls, some supersedure queen cells may be present. Symptoms disappear with requeening.	Varroa mite is present. Symptoms disappear after effective varroa treatment.	Disease can disappear by itself. Requeening with a resistant strain will help remove the disease.
Sample to send to lab for identification	Diseased larvae.	Diseased larvae.	N/A (submit suspect larvae to rule out EFB).	Diseased larvae.	Diseased larvae.

every report and may get suspect samples (diseased larvae) sent to MAF's Investigation and Diagnostic Centre in Wallaceville to test for *M. plutonius,* the bacterium that causes EFB as well as other exotic bee diseases, as appropriate. Technicians may examine stained smears under the microscope, or perform a test using ELISA (enzyme linked immunosorbent assay) or PCR (polymerase chain reaction) to positively identify the bacterium.

Impact on beekeepers in New Zealand

The bee stock currently present in New Zealand has never been exposed to EFB and is likely to be highly susceptible to the disease. Susceptible hives will succumb to EFB if left untreated. Bees already subjected to high levels of stress due to frequent shifting, poor management, poor nutrition and other diseases such as varroa or a combination of any of the above, will be most significantly affected by the disease.

In the absence of an effective control product (such as the antibiotic Oxytetracycline), the introduction of EFB may also seriously compromise the ability of industry to supply pollination hives that meet the currently accepted standards.

In countries where EFB is endemic, beekeepers use one or a combination of the following four control methods:

a) antibiotic treatment with Oxytetracycline (OTC)
b) shook swarming
c) destruction by burning (same as for AFB)
d) breeding resistant stock.

If EFB were found in New Zealand, the beekeeping industry may need to consider if antibiotics are required to help meet pollination and honey production commitments. The use of antibiotics would have a significant impact on the way AFB is managed in New Zealand, currently the use of antibiotics are prohibited under the Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998) (http://afb.org.nz/biosecurity-national-american-foulbrood-pest-management-strategy-order-1998).

The use of antibiotics for control of EFB could introduce all sorts of issues including antibiotic residues in honey and other bee products, and increased incidence of AFB as a result of misdiagnosis with EFB. The introduction of antibiotics for disease control could potentially damage international market access for honey exports. For example, countries such as Japan would require New Zealand honey to be tested to ensure it does not contain antibiotic residues.

Summary

EFB is a highly infectious brood disease of honey bees. The absence of EFB in New Zealand allows the beekeeping industry to operate in ways not possible in other beekeeping countries. Our enviable market access conditions, a lack of dependence on antibiotics and a world-renowned AFB control programme are all worth protecting. So, be vigilant, report anything unusual in your hives and happy beekeeping.

Acknowledgement

This article was funded by the Ministry of Agriculture and Forestry through the Honeybee Exotic Pest and Disease Surveillance Programme [see *Surveillance,* 2011, 38(3), 29-30](http://www.sciquest.org.nz/elibrary/edition/5539)

Further reading

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IN THE NEWS

Storm wallops Wanganui, Taranaki

By Frank Lindsay, NBA Life Member

The Wanganui and Taranaki regions were hit with a violent windstorm and rainstorm on 3 March.

This was reported as the worst storm in living memory for many residents. The high winds and heavy rain saw crop and property damage estimated at $5 million, with FMG clients alone lodging insurance claims for approximately $4.5 million as of 16 March.

The 'weather bomb' cut power to 30,000 homes, with some backcountry properties losing power for more than a week due to access roads being blocked. Most beekeepers reported that damage was confined mostly to hive roofs being blown off, but no substantial damage to hives. The photos on the front cover of this journal show the ferocity of the storm.

As we prepared to go to press another storm hit Northland on 19-20 March, causing significant flooding and other damage to the region. On 20 March the storm moved south to deliver another blast of rain and wind to much of the central North Island, including Taranaki and Wanganui. We will try to provide a report in the May journal.

NATIONAL OFFICE UPDATE

By the NBA Secretariat

Membership

Thank you to those of you who renewed your membership for 2012. You will have received your membership packs containing your new 2012 cards and information on the various benefit partners offering discounts to members.

Please see the notice on page 6 for additional important membership information.

NBA President visits Wellington

Barry Foster was in Wellington for the day on 29 March. He had a full day of meetings and interviews with:

- Hon David Carter, Minster of Primary Industries
- Damien O'Connor, Labour's agricultural spokesperson
- Steffan Browning, the Greens' agricultural spokesperson
- Peter Silcock, CEO HortNZ
- Frances Clement, CEO NZ Pork Industry
- David Hayes, MAF's Director of Preparedness and Partnerships
- Catherine Beard, CEO Business New Zealand Exporters Association

Barry will report in full on his discussions during that day in his President's report in the May journal.

GIA

The Industry Working Group on GIA has continued to meet and to work with MAF to iron out some of the main concerns about this important government/industry agreement. The working group, which comprises most agri-sector representative bodies, has formed a sub-committee that is responsible for dealing with the detail of the proposed changes. So far, MAF has indicated that the proposed changes don't require alterations to the legislation so things can proceed apace.

The focus at the moment is to ensure the correct 'principles' are in place. These principles state how MAF and industry will deal with each other. Industry's focus has been to shift the focus of the GIA deed away from being a legal document and to bring to the fore the principles of fair dealing, value proposition and mutual benefit etc. Underlying this approach is the view that if industry sees value in GIA it will sign up. Previously all it saw was a legal document!

The view from most participants is that this approach will encourage many industries to at least sign up with a view to testing the waters. That means they can test the value. They can always back out if the waters prove a bit rocky (this is the new approach with which MAF is happy).

MAF turns into MPI

The Ministry of Agriculture and Forestry (MAF) is changing its name to reflect the new functions of the organisation following its merger with the NZ Food Safety Authority and the Ministry of Fisheries over the past two years. The new name of the Ministry will be the Ministry for Primary Industries. The new name will come into effect on 30 April 2012.

Existing brands for MAF, Biosecurity New Zealand, The Ministry of Fisheries and the NZ Food Safety Authority will be phased out.

IAPV testing—NZ

All the diagnostic work has been completed in the IAPV survey, with negative results. MAF are intending to provide a formal stakeholder advisory on this very soon.

IAPV testing—UK

This testing is being undertaken by a bee research facility in York, UK.

Unfortunately, the testing done before Christmas was not successful. And as they can only test on live bees, testing will restart in the northern spring. A report on these results is not likely until nearer the end of 2012.

Beekeeping clubs

Late last year the Executive Council received some verbal and written concerns from beekeeping clubs in regards to the new 2012 subscription rates for clubs. The Council asked Pauline and Daniel to arrange a meeting with some prominent small beekeepers to discuss those concerns. Two teleconference calls have been had to date and significant progress made on identifying some of the issues about which clubs are concerned. The new subscription rates were just one of the issues.

As a result, a number of bee club representatives have been asked to prepare for the NBA's consideration a discussion paper outlining how the Association can add more value to the clubs. We anticipate that all bee clubs should be consulted as part of this process. The ultimate goal is to identify how the Association can work more closely with small beekeepers who are the most rapidly growing sector of the industry and who do have a lot to offer the industry.

Auckland Council

At the end of February Kim Kneijber, President of the Auckland Beekeepers' Club, alerted the NBA to a looming issue with an Auckland Council proposal to charge beekeepers placing hives on council land a consent fee of $190.

A public meeting was held on 5 March to discuss submissions in regards to the Auckland Council draft long term plan. The NBA has asked Auckland Ward representative, Neil Stuckey, to work with Kim to help address this issue.

Media

Many members will have seen the news coverage of the article from the University of Otago which listed honey among a list of foods that shouldn't be eaten. Slightly bemused by such a finding, National Office responded immediately with a news release of its own. We managed to persuade Allen McCaw to go on TV3 defending honey and we had several radio interviews and newspaper articles of our own challenging the university's findings about honey.

VSH Queens Research Extension

A video conference meeting was held recently with Jane Lorimer, NBA Research Committee, and Michelle Taylor and Declan Graham of Plant and Food Research. They were joined by SFF Senior Project Advisor, Claire Scott in Canterbury, and Kerry Gentleman, the Executive Council's research liaison. This was a very productive meeting as it set the scene for the next stage of this project, which should see commercial breeding of resistant bees. Watch this space for more information on this exciting project. *[Editor's note: see also the update on this project on page 45.]*

BAYVAROL®

Thank you

Once again we have sold in excess of one million Bayvarol strips in the last 12 months, another record year for sales. Why? Because it works and works well. We've heard of hive losses from clients who were "pressured" to use "alternative" treatments last Autumn". Some of those "alternative" products provide "inadequate" protection for Autumn – be warned and be careful, particularly when your livelihood is at stake.

There still have been no confirmed reports of resistance to Bayvarol, however, we expect one day it may come. Thank you to our customers who continue to make Bayvarol the number one varroa treatment in New Zealand.

Beeswax Wanted – Recorded Prices

up to in excess of $9.00 + GST per kg

In spite of the high kiwi dollar, we have now recently negotiated and re-negotiated with our German Beeswax buyers to bring you the highest ever prices for Beeswax. **We are paying up to in excess of $9.00 + GST per kg** for large quantities of high quality yellow cappings beeswax that meets our specifications. Please email Stuart directly at **stuart@beehealthy.co.nz** advising quantity available, treatments used and when. A photo can also be helpful.

A Wee Reminder

We are New Zealand's largest and leading supplier and stockist of bulk commercial beekeeping supplies, for example:

Alliance Woodware: Storeys, frames, bottom boards, etc

Feeders: Rotationally moulded frame type and top feeders made by EBS Ltd

Excluders: Heavy Duty USA and Italian style with galvanised or wooden frames.

Hive Strappers: Ecroyd emlock type with 4.5-metre strap – "ready to use"

Galvanised Roofs: 0.75mm and 0.95mm, spring or rivet style, one handle and two handles

Suits and Gloves: Ecroyd/Deane Suits and EBS gloves – designed and manufactured with the Commercial Beekeepers in mind

www.beehealthy.co.nz

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Sterilising AFB-contaminated equipment

By Dr Mark Goodwin, Apicultural Research Unit, Plant and Food Research, Ruakura

New Zealand legislation (National American Foulbrood Pest Management Strategy Order 1998) specifies that all bees, bee products and appliances associated with an American foulbrood (AFB) diseased colony must be burnt.

The only major exception to this ruling is people sterilising equipment in accordance with their Disease Elimination Conformity Agreement (DECA). If you do not have a current DECA that specifies how you will sterilise equipment rather than burn it, you must burn all equipment associated with an AFB diseased colony.

> "...most disinfectants do not kill AFB spores....Washing gloves in soapy water is probably the best treatment..."

Fortunately, relatively large numbers of spores are needed to infect a colony with AFB. Because of this any sterilising technique is not required to remove every last spore, but only to lower spore counts to levels that will not cause re-infection. High and low risk equipment, based on the likelihood of being infected with high spore levels, can be treated differently.

After handling American foulbrood (AFB) infected equipment, gloves, bee suits and the decks of trucks etc. (which are all likely to be carrying low numbers of spores) are best cleaned by washing them thoroughly. Some beekeepers use disinfectants (e.g. Dettol®, Savlon®, methylated spirits) to try and sterilise their gloves; however, most disinfectants do not kill AFB spores. Spores can even survive being soaked in methylated spirits or alcohol. Washing gloves in soapy water is probably the best treatment as it dislodges most of the spores that may be present.

Hive tools are best cleaned in a hot flame. This can be achieved by removing the lid from a smoker and pumping the bellows until the material inside is burning vigorously. The hive tool should then be held in the flame for several minutes (Figure 1). Some beekeepers use a small gas burner to scorch their hive tool. This has the advantage that it is quicker and probably does a better job.

Figure 1. Sterilising a hive tool.

Approved salvaging methods

There are three approved methods for salvaging infected beekeeping equipment for those beekeepers with a DECA. It is illegal to use any other methods. The economics of sterilising equipment rather than burning it needs to be considered carefully. In many cases when realistic labour costs are taken into account as well as the condition of the equipment, it is usually cheaper to burn it.

Paraffin wax dipping

The most common method used to sterilise infected hive parts is paraffin wax dipping (Figure 2). Hive parts need to be dipped in paraffin wax at 160°C for ten minutes. The time and temperature is very important so a thermometer and timer should be used. Even at this temperature there may still be the occasional AFB spore that survives. However, there will not be enough live spores to infect a colony when the equipment is used again.

Figure 2. Paraffin wax dipper.

A great deal of care also needs to be taken to ensure the wax doesn't get too hot or boil over if a fire is being used to heat the wax. Many beekeepers have met their local fire brigade after mishaps with their paraffin wax dippers, and a few have lost buildings when the burning wax flowed under walls. It is a good idea to have on hand a cover that can be placed over a wax dipper to put out any fires, and an extinguisher to put out spilt wax that may be on fire. It is important also to wear protective clothing because of the high temperature of the wax.

To check that the paraffin dipping is working the boxes should be painted immediately after dipping with a special colour. The hives the treated boxes are put on can then be followed closely to see if they become re-infected.

Floorboards, boxes, lids, excluders and wooden or metal feeders are the most common items of equipment that are sterilised by the wax dipping method. Frames are better burnt, whilst the wax is too hot to dip plastic hive components in.

Sodium hypochlorite

Plastic hive parts and frames of foundation can instead be sterilised using sodium hypochlorite. Janola® contains 3% sodium hypochlorite while some swimming pool products contain about 35%. Sodium hypochlorite is mixed with water and so →

has very limited penetrating power. Anything that is to be treated needs therefore to be free of wax and propolis. Because of the air pockets that develop in cells it is not possible to sterilise drawn comb using hypochlorite.

Equipment to be treated should be immersed in at least 0.5% hypochlorite for 20 minutes. Care should be taken with dipping metal as hypochlorite can dissolve some metals, as we have found out to our cost. Similarly, continually dipping leather gloves can be expensive as it causes them to rot. Sunlight breaks down sodium hypochlorite so it is important to keep it in the dark.

Irradiation

The third approved sterilisation method is irradiation. This is a method commonly used in Australia. We have only one irradiation plant in New Zealand situated near Wellington. If irradiation is going to be used, it is important that all the equipment is sealed in plastic so that bees do not get access to it. Irradiation has the advantage that comb can be treated as well. Brood comb should, however, be burnt rather than treated.

There are a number of other methods that are used overseas to attempt to sterilise AFB infected equipment; e.g., scorching boxes and steam chests. These are not recommended and should not be used because they are not sufficiently effective.

[Editor's note: This is the fifth article of a series that has been written for the Management Agency for the American Foulbrood National Pest Management Strategy. These articles were first published in 2003, and have been reviewed and updated where necessary. The original title was 'Sterilising equipment contaminated with American foulbrood spores.'

We will run these articles on a regular basis over the year. The articles will cover a range of aspects of American foulbrood control, including how to inspect for and identify diseased colonies, the management of colonies to prevent American foulbrood and a beekeeper's legal obligation with regard to American foulbrood.]

A big thank you to Jane Lorimer

Jane is stepping down as Chairperson of the NBA Research Committee as her mother is terminally ill with cancer. Jane will remain as a member on the Research Committee, to which she has given an enormous amount of time and commitment over many years. We are very fortunate to have someone of Jane's experience and calibre working within what is an increasingly vital committee within the National Beekeepers' Association.

NBA Executive member Kerry Gentleman will take over her role as Chairperson.

On behalf of myself, the NBA Executive Council, Research Committee members and Secretariat, I would like to extend a heartfelt thank you to Jane for all the work she has done as Chairperson of the Research Committee.

Kind regards,
Barry Foster
President, National Beekeepers' Association

Unregistered sites found

By Rex Baynes, AFB NPMS Manager

In December 2011 the Management Agency, in partnership with the Bay of Plenty Branch of the NBA, undertook an aerial surveillance operation on the East Cape to check beekeeper compliance with the AFB NPMS.

This operation was on a shared-cost basis with an independent person undertaking the aerial survey. The helicopter flight in total lasted about four hours, with a stop for refuelling in the car park outside the local garage at Waihau Bay.

Approximately 215 apiaries were plotted by GPS during the time in the air, covering a wide area from Opotiki to Te Araroa towards the top of the East Cape.

The exercise is considered very cost effective, especially considering the time in the air versus sites plotted and unregistered sites located.

The GPS data obtained was then downloaded onto a mapping facility that allowed direct comparison between 'actual' apiary location details and the information that is held in the apiary database. A number of inconsistencies were identified which warranted further investigation.

In early February 2012 a ground operation was commenced that involved AP2s from outside of the region spending three days attempting to locate the unregistered apiaries, with the objective being to identify both the owners and ascertain the disease status of the hives in question. Further, notices to register the apiaries were placed under the hive lids reminding the beekeeper concerned that hives must be registered under clause 15 of the Order in Council. The beekeeper was also left in no doubt that under clause 25 the hives can be destroyed.

On the lighter side, I have been informed that our intrepid AP2s were confronted with a range of obstacles, not the least being a hungry and particularly nasty guard dog and an irate farm manager's wife.

The AP2s provided AsureQuality Limited with a detailed report of their findings, which have been used to track down the owners of the apiaries. In some cases these apiaries were registered but the co-ordinates in the database were incorrect, and in other cases the apiaries were unregistered. Owners were identified for all but one of the apiary sites.

AsureQuality Limited has passed this information back to the Management Agency, which will assess the seriousness of each non-compliance and take appropriate action.

Did you know?

By Rex Baynes, AFB NPMS Manager

Year	Registered beekeepers	Number of apiaries	Number of beehives
2000	4,864	21,633	299,712
2001	4,550	20,993	320,113
2002	3,973	20,258	305,152
2003	3,649	20,228	300,729
2004	3,211	19,592	292,530
2005	2,911	19,281	294,886
2006	2,694	18,954	300,728
2007	2,602	19,228	313,399
2008	2,589	20,439	343,155
2009 (22 Jun)	2,663	21,593	365,709
2010 (7 Sep)	2,944	22,432	377,574
2011 (10 Mar)	3,251	23,395	388,369
2012 (6 Mar)	3,750	25,126	420,916

AFB NPMS statistics

By Rex Baynes, AFB NPMS Manager

The Management Agency is pleased to report that as at 6 March 2012 there is a 91.1% Annual Disease Return (ADR) compliance rate.

This is due to some hard follow-up work from both staff at AsureQuality Limited and from within the Management Agency. It is also worthwhile noting that in the last 12 months registered beekeepers have increased by 15.3%.

Reported AFB percentage levels are down to 0.17%. This result is especially pleasing given the increase in ADR compliance (greater level of reporting), not to mention the increase in registered beekeepers, apiary and hive numbers.

Statistics Courtesy of AsureQuality Limited.

	2007	2008	2009	2010	2011	2012
Percentage of beekeepers with a Disease Elimination Conformity Agreement (DECA)	79%	79%	59%	64%	58%	59%
Percentage of DECA approved beekeepers who have completed the competency exam.	49%	62%	100%	100%	100%	100%
Annual Disease Return (ADR) compliance (best for year)	83%	91%	88%	89%	92.7% (2010 ADR)	91.1%
Certificate of Inspection (COI) compliance	22%	30%	64%	68.8%	62%	Not available as yet
AFB percentage levels	0.30%	0.32%	0.27%	0.25%	0.22%	0.17%

By the numbers

0.17%
Reported rate of AFB infection for the 12 months ending 6 March 2012

454
Beekeepers attended an AFB Recognition Course from 1 January 2011 through 31 December 2011.

45
AFB Recognition Courses were held from 1 January through 31 December 2011.

100%
Of DECA Holders have passed the AFB Recognition Course Test.

49
Certificated AFB Recognition Course trainers (36 in the North Island and 13 in the South Island).

3,750
Registered beekeepers as at 6 March 2012.

25,126
Registered apiaries as at 6 March 2012.

420,916
Registered hives as at 6 March 2012.

2,230
Hobby and commercial beekeeping operations holding a DECA.

62.1%
Of the 1,248 Certificates of Inspection sent out in August 2010 have been returned.

1.8 %
Percentage of apiaries where AFB has been reported.

15.3%
Increase in the number of registered beekeepers in the last 21 months.

8.4 %
Increase in hive numbers in the last 12 months.

90.2 %
Annual Disease Return compliance rate.

1207
New beekeepers with less than two seasons' experience.

32%
Of the beekeeping industry has less than two seasons' experience. This compares to 27% at the same time last year.

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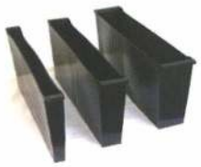

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AFB Recognition Courses planned for 2012

By Rex Baynes, AFB NPMS Manager

We are providing non-DECA holders with the opportunity to attend a course and take the test. This is an essential step to becoming a DECA holder.

KATIKATI, BAY OF PLENTY
Date: **28 April 2012 (Saturday)**
Host: Bay of Plenty branch of the NBA
Facilitator: Gerrit Hyink
Venue: Katikati Resource Centre
45 Beach Road, Katikati
Start: 9.00 am
Cost: Course $30.00 plus $30.00 to sit the test (total $60.00)
Contact: Tania van der Vegte
(07) 549 0399 or
ace@katikatiresource.co.nz
Remarks: It is acknowledged that you may only have a few days' notice of this course, please make contact as early as possible if you wish to attend.'

TAURANGA, BAY OF PLENTY
Date: **8 September 2012 (Saturday)**
Host: Bay of Plenty Branch of the NBA
Contact: Ross Carroll to register interest
(07) 552 4585 or
robro@farmside.co.nz
Venue: Te Puna Hall
State Highway 2, Te Puna
Start: 9.00 am
Finish: 2.00pm
Cost: To be confirmed.
Registration Deadline: 10 August 2012 (Friday)
Catering: Tea and coffee provided:
Lunch BYO

RAMARAMA, AUCKLAND
Date: **12 May 2012 (Saturday)**
Host: The Franklin Beekeepers Club
Contact: Graham (09) 239 1177 or
graham@thewheelers.co.nz
Registration Deadline: 1 May 2012 (Tuesday)
Start: 9.30 am sharp.
Conclusion: 3.30 pm (approximately)
Cost: $60.00 per person includes sitting test.
$30.00 for refresher.
Catering: Morning tea and lunch provided
Remarks: Full details upon receipt of the registration request and payment.

AUCKLAND
Date: **15 September 2012 (Saturday)**
Host: Auckland Beekeepers Club (Inc)
Venue: TBA (Auckland)
Start: 9.30 am
Cost $60.00 includes course and test.
$30.00 refresher course only
Catering: Morning tea/coffee provided, BYO lunch.
Contact: Kim Kneijber,
email: kimk_bees@hotmail.com
Registration Deadline: 10 August 2012

KERIKERI, NORTH AUCKLAND
Date: **May (exact date to be confirmed)**
Host: Management Agency American Foulbrood Pest Management Strategy
Facilitator: Dan Lambert
Contact: Dan Lambert (027) 352 9295, (09) 407 8226 or
beekeeper266@hotmail.com
Venue: NorthTec, Kerikeri
Start: 9.00 am
Remarks: Dan requires a minimum of 6 beekeepers before this course can be confirmed and set. Please advise Dan as soon as possible.

HAMILTON, WAIKATO
Date: **26 May 2012 (Saturday)**
Host: Waikato Branch of NBA
Venue: Matangi Hall
Matangi Village, Tauwhare Road
Start: 9.00 am
Finish: 3.00 pm
Cost: $25.00 for the course plus $30.00 to sit the test. (Total 55.00)
Catering: BYO lunch, coffee and tea provided.
Contact: Tony Lorimer (07) 856 9625
Registration Deadline: 12 May 2012 (Saturday)
Note: Applications received after this date cannot be accepted as it takes a minimum of 10 days to generate individual test papers and mail them to the person running the course.

NAPIER, HAWKE'S BAY
(Included as part of the National Beekeepers' Association of New Zealand (Inc.) Seminars and Conference)
Date: **27 June 2012 (Monday)**
Host: National Beekeepers' Association of New Zealand (Inc) Hawke's Bay Branch, in partnership with the Management Agency AFB NPMS.
Venue: Napier War Memorial Conference Centre
48 Marine Parade, Napier
Course Director: David Woodward
Start: 8.30 am
Finish: 1.00 pm
Cost: $60.00 to attend Course and sit the test
$25.00 to attend as a refresher and not sit the test.
Catering: Morning Tea provided.
Registration Deadline: 13 June 2012 (Wednesday)
Contact for Course Registration:
Mary-Ann Lindsay
26 Cunliffe Street
Johnsonville, Wellington 6037
Ph. (04) 478 3367
Email: lindsays.apiaries@clear.net.nz
Payment Options: Direct Credit:
F or MA Lindsay, TSB Bank Direct 15-3959-0146898-00; or cheque made out to Mary-Ann Lindsay.
Important Note: Applications to attend the course will not be accepted after 13 June 2012 (Wednesday), nor will they be accepted on the day of the course.

PALMERSTON NORTH, MANAWATU
Date: **16 June 2012 (Saturday)**
Host: Manawatu Bee Club
Venue: Newbury, Rangitikei Line (Hall entrance from west, first entrance on the left.
Start: 9.30 am
Cost: $30.00 for course plus $30.00 to sit the test.
Catering: BYO lunch, tea and coffee provided.
Registration Deadline: 1 June 2012 (Friday)
Contact: Frances Beech (06) 367 2617 →

or francesbeech@compassnet.co.nz
Andrew Beach (04) 904 1634 or
andrewbeach@hotmail.com
Course Duration: 4 hours plus the test.
Remarks: An application pack will be mailed to all non-DECA holders in the immediate area prior to the course which will include payment details.

JOHNSONVILLE, WELLINGTON

Date: **16 June 2012 (Saturday)**
Host: Wellington Beekeepers' Association
Venue: Johnsonville Community Centre Hall
Start: 10am - 1pm
Cost: Course & Test $60
Refresher / course only cost $30
Catering: Morning tea / coffee provided
Contact: John Burnet
johnburnet@xtra.co.nz
Registration Deadline: 1 June 2012 (Friday)
Note: Reading of yellow AFB book a pre-requisite.

CARTERTON, WAIRARAPA

Date: **7 July 2012 (Saturday)**
Host: Southern North Island Branch of NBA
Venue: Wairarapa Manuka Ltd Factory
Francis Lane, Carterton
Contact: Judi Ferris (06) 379 5558 (Factory)
Registration Deadline: 21 June 2012 (Thursday)
Start: 9.00 am
Cost: $60.00 course and test
$30.00 refresher only
Catering: Morning Tea provided, BYO lunch

TIMARU, SOUTH CANTERBURY

Date: **10 November 2012 (Saturday)**
Host: Agribusiness Training Ltd
Facilitator: Phil Sutton
Contact: Phil Sutton (03) 686 1513 or
(027) 491 7243
Venue: Agribusiness Training Ltd
Washdyke, Timaru
Start: 9.30 am
Cost: To be advised

CHRISTCHURCH, CANTERBURY

Date: **24 November 2012 (Saturday)**
Host: Canterbury Branch of the NBA
Facilitators: Lindsay Moir and Jeff Chandler
Contacts: Lindsay Moir
brightonmoirs@xtra.co.nz or
(03) 388 3313
Jeff Chandler
jchandler38@gmail.com or
(03)385 5375
Note: Jeff Chandler will not be available from 27 May through 3 October 2012.
Cost: $35.00.
Note: You will need to request a test paper which at present is $30. Details of this will be given nearer the time of the course. It is possible to do the course only and make your own arrangements to sit the test at some later stage.
Remarks: To register your interest, please contact Lindsay or Jeff with your details as requested below:

- Given name
- Family name
- Landline phone number
- Mobile phone number
- Physical address
- Email address
- Wish to attend course plus test

CROMWELL, CENTRAL OTAGO

Date: **6 October 2012 (Saturday)**
Hosts: Central Otago Beekeepers Club and the Management Agency American Foulbrood National Pest Management Strategy
Venue: To be advised
Facilitator: David Woodward, Agribusiness Training Ltd
Start: 9.30 am
Catering: Morning tea, lunch provided.
Contact: David Woodward (03) 4898800 or (027) 418 2385 or
davidw@agribusiness.ac.nz
Remarks: An application pack will be mailed to all non DECA holders in the immediate area prior to the course which will include payment and registration details.

Important

The course information highlighted above is what is planned to date at time of going to print. Certain arrangements still needed to be confirmed on some courses.

Should beekeepers who fall outside of the regions mentioned above require a course(s) I am more than willing, given there is reasonable support to organise additional courses. Please email me at rbaynes@ihug.co.nz with your location details.

If you are planning on attending an AFB Recognition Course, it is strongly recommended that you obtain a copy of the booklet titled Elimination of American Foulbrood Disease without the Use of Drugs, *commonly referred to as the 'yellow book'.*

This worthwhile publication can be obtained from:

- Your local beekeeping supplier
- National Beekeepers' Association (Inc.)

PO Box 10792, Wellington
Phone: (04) 4716254
Email: secretary@nba.org.nz
Cost: $31.50 (includes $1.50 postage)

Attendance at AFB courses

By Rex Baynes, AFB NPMS Manager

With beekeeper registrations continuing to exceed all expectations (806 registrations since September 2010), the Management Agency continues to honour its commitment to make available to beekeepers AFB Recognition Courses nationwide.

Since 1 January 2010, 78 courses have been convened at which 945 beekeepers attended. This is not a bad effort given we are reliant in the main upon beekeepers who give of their time to facilitate the training.

It is appropriate at this time that I acknowledge the exceptional support I receive from my AFB Recognition Course trainers.

Thank you.

AMERICAN FOULBROOD NATIONAL PEST MANAGEMENT STRATEGY

New Zealand beekeeper, apiary and hive statistics by apiary district as at 6 March 2012

Apiary Register Location	Category 0-5 Hives		
	Beekeepers	Apiaries	Hives
Blenheim	242	279	494
Canterbury	436	499	837
Hamilton	175	192	334
Otago/Southland	274	309	670
Palmerston North	582	654	1084
Tauranga	148	185	298
Whangarei	592	656	1162
New Zealand	2449	2774	4879

Apiary Register Location	Category 6-10 Hives		
	Beekeepers	Apiaries	Hives
Blenheim	31	52	250
Canterbury	36	69	264
Hamilton	22	37	165
Otago/Southland	55	83	430
Palmerston North	80	130	615
Tauranga	36	52	296
Whangarei	109	188	867
New Zealand	369	611	2887

Apiary Register Location	Category 11-50 Hives		
	Beekeepers	Apiaries	Hives
Blenheim	30	95	784
Canterbury	53	178	1108
Hamilton	23	59	580
Otago/Southland	46	111	1125
Palmerston North	75	259	2173
Tauranga	51	104	1313
Whangarei	90	238	1907
New Zealand	368	1044	8990

Apiary Register Location	Category 51-250 Hives		
	Beekeepers	Apiaries	Hives
Blenheim	14	201	1772
Canterbury	28	429	3697
Hamilton	20	166	2194
Otago/Southland	26	256	3241
Palmerston North	41	415	5605
Tauranga	46	350	5200
Whangarei	54	429	6302
New Zealand	229	2246	28011

Apiary Register Location	Category 251-500 Hives		
	Beekeepers	Apiaries	Hives
Blenheim	11	271	4425
Canterbury	26	747	10557
Hamilton	8	271	4340
Otago/Southland	13	342	4893
Palmerston North	20	323	6626
Tauranga	29	413	9179
Whangarei	20	355	7504
New Zealand	127	2722	47524

Apiary Register Location	Category 501-1000 Hives		
	Beekeepers	Apiaries	Hives
Blenheim	13	543	8801
Canterbury	13	594	9286
Hamilton	10	433	9246
Otago/Southland	20	925	14012
Palmerston North	16	724	12978
Tauranga	24	578	15083
Whangarei	12	477	9186
New Zealand	108	4274	78592

Apiary Register Location	Category 1000+ Hives		
	Beekeepers	Apiaries	Hives
Blenheim	8	711	13000
Canterbury	14	1389	29541
Hamilton	13	1463	38848
Otago/Southland	15	1397	27738
Palmerston North	15	2595	55921
Tauranga	23	2104	47956
Whangarei	15	1861	38279
New Zealand	103	11520	251283

Apiary Register Location	Total		
	Beekeepers	Apiaries	Hives
Blenheim	349	2152	29526
Canterbury	606	3905	55290
Hamilton	271	2621	55707
Otago/Southland	447	3366	51109
Palmerston North	829	5100	85002
Tauranga	356	3778	79075
Whangarei	892	4204	65207
New Zealand	3750	25126	420916

AFB RECOGNITION & COMPETENCY COURSE

The Franklin Beekeepers Club will be hosting a Test / Refresher on 12th May 2012 to be held at Ramarama, Auckland.

Register by 1st May with
Graham Wheeler on 09 239 1177
or graham@thewheelers.co.nz

Upon receipt of the registration and payment, a detailed agenda and map with the venue details will be mailed out.

The session starts 9.30 sharp. Morning tea, and lunch around 12.30, are supplied, and the course concludes about 3.30pm.

Cost per person of full course is $60.00, and for refresher only $30.00.

We look forward to your participation.

Win $500 worth of beekeeping products

Answer the following question:

Where and when is the 2012 NBA Conference being held?

Post or Email answers to:

National Beekeepers' Association
PO Box 10792
Wellington
E: competition@nba.org.nz

One entry per person.

Prize of $500 products to include cost of freight to winner.

Open to members and non-members.

Closing Date: Postal entries close Friday 8 June 2012. Entries will be accepted by email and at the conference until 3 pm on 27 June 2012.

Prize will be announced at the conference.

Winners will be notified. Entries must include correct postal and email address details.

NBA Executive has final say on eligibility of entries. The NBA will use the address information for its own purposes.

National Beekeepers' Association of New Zealand
2012 Member and Journal Subscription Form

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Postcode: _____ Phone No: _____

Email Address: _____ No of Hives: _____

☐ Existing Member ☐ New Member ☐ Life Member

Sub. encl: $ _____ or Internet banking date: _____ (**Please use surname as reference**) Receipt required: ☐

The membership year runs from 1 January – 31 December. There are 11 issues of The Beekeeper journal from February to December. A journal subscription is included in the membership fee.

Tax Invoice GST No. 14-437-525

Categories	Total hives	GST Incl.	Please Tick
Standard Hobbyist	1-10	$145.00	
Sideline Commercial	11-50	$180.00	
Small Commercial	51-250	$355.00	
Commercial Level 1	251-400	$570.00	
Commercial Level 2	401 - 800	$1045.00	
Commercial Level 3	801-1200	$1545.00	
Commercial Level 4	1201-1500	$1900.00	
Commercial Level 5	1501-3000	$3790.00	
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Belief and integrity in manuka honey

By John Rawcliffe, UMF Honey Association

The manuka honey industry has, by any standard, been very successful to date. It could, however, be argued that that success could be far greater, and its ability to protect its world market position a lot stronger.

In particular, this would be the case were it to promote and increase its inherent strengths without influence from the vested interests that have been involved in the industry to date. This would further enhance the medium- and long-term security of manuka honey products and it would continue to be a world leader.

The research science

The body of research around manuka honey is primarily coming from overseas. Overseas laboratories are also leading the work to identify the unique elements and supporting standards. In late 2011 the UK's leading government laboratory was commissioned to verify the uniqueness that is New Zealand manuka honey.

The chemical profile contained phenolics, methylglyoxal, DHA and other components that clearly demonstrate its uniqueness. In early 2012 AsureQuality Singapore was able to test for non-peroxide activity using both an outcome-based assay and detection of the chemical marker methylglyoxal. It also tested the level of heating honey samples had been exposed to using the marker HMF. Its testing validated Waikato University's correlation and showed that its testing was in line with both New Zealand laboratories and the UK laboratory.

For the first time, in two key overseas markets and linked to the New Zealand laboratories, we are able to communicate to the world that this is a unique product, with a distinct chemical profile. That leads us to an understanding as to the potential modes of action, that this mode of action is more than just simply antibacterial, and that we are able to capitalise on, and protect this position in our key markets.

Undermining the position

The array of medical claims that currently exist, ranging from recommending direct application to wounds to curing cancer, while being illegal for one thing, also start to erode the credibility of the product. They have the potential to halt exports and destroy the integrity and reputation of the entire industry. These claims are not needed to sell this product.

Further undermining the industry is the counter-positioning of marketers claiming *"my test is better than your test", or "this is the test which describes the honey's true value".*

A recap on testing

- The well diffusion assay measures an outcome
- Methylglyoxal is a prominent chemical marker
- There is a correlation between the two; however, it is not linear (i.e. presents diminishing returns)
- The calculation used by Hills Laboratory is IANZ accredited and verified by a number of international laboratories
- A quality standard behind this honey is that it cannot be excessively heated, as this increases the level of methylglyoxal but destroys enzymes that are present and unbalances the chemistry within the honey, reducing the non-peroxide activity over time
- There is research currently underway on developing an assay that will detect if chemicals have been added to mimic the natural chemical markers

Protecting our position of strength

The above highlights fundamental science that can fortify the integrity of the New Zealand manuka honey industry. This is not a temporary gold rush or a hit-and-run pseudoscience miracle cure. This is something that is real, sustainable and has the potential for clinical research and real benefits to those in need.

A product this unique is deserving of an industry, particularly through its leaders, that understand this: *there is real value present in manuka honey and the focus needs to shift away from personal ownership or marketing counterpositions—**it is the honey itself which is important.***

This will be key in strengthening the integrity behind manuka honey, in the growth of your industry, and in protecting and enhancing the unique opportunity that has been gifted.

Who do you call?

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www.afb.org.nz
Ph: (04) 566 0773

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Email: derryb@asurequality.com

South Island – Margaret Roper, Registrar
Ph: (07) 574 2596
Email: roperm@asurequality.com

Independent review of kiwifruit imports

Media release, 24 February 2012

The Ministry of Agriculture and Forestry (MAF) today released the Terms of Reference and details of the person who will conduct the independent review of the importation of kiwifruit pollen, plant material, fruit, nursery stock and horticultural equipment.

The review is a response to kiwifruit industry concerns about biosecurity measures and the kiwifruit vine disease Pseudomonas *syringae pv. Actinidiae* (Psa) first detected in New Zealand in November 2010.

The review will be conducted by David Moore, the Chief Executive of Sapere Research Limited, an independent Australasian strategic analyst consultancy. Mr Moore has extensive senior public sector and private sector experience. Throughout the review he will report to MAF Director General Wayne McNee.

Mr McNee says the review comes at the request of the kiwifruit industry body Kiwifruit Vine Health Inc (KVH) and the Minister for Primary Industries.

"The report will be provided to me by the end of April 2012 and its findings will be made public within an appropriate timeframe," Mr McNee says.

The full Terms of Reference document is available at: http://www.biosecurity.govt.nz/files/pests/psa/review-report-tor.pdf

There will be no further MAF comment on the review until it is complete.

Source

MAF releases scope of independent review of kiwifruit imports, Media release from Lesley Patston, Senior Communications Adviser, Ph. 029 8940163; Email: Lesley.patston@maf.govt.nz

MAF highlights industry importance

By Daniel Paul, NBA Joint CEO

The value of New Zealand's beekeeping industry is well understood within the Ministry of Agriculture and Forestry, and working with beekeepers collaboratively is a priority for officials.

That's the message from recently appointed Deputy Director-General Compliance and Response, Andrew Coleman.

Andrew is responsible for four distinct operational areas—Compliance, Preparedness (incursion planning), Partnerships (which includes work around GIA) and Response.

He says the increasingly positive working relationship between the industry and the Ministry means issues and solutions can be addressed much more effectively. And that will benefit beekeepers.

"I'm aware of some of the history but I think we're moving past that.

"There are always going to be issues on which we will disagree, but the main thing is that the Ministry appreciates the overall importance and value of the industry and takes appropriate steps to protect that."

Andrew says industry won't always like all of the decisions officials have to make, "but it's important that we try and explain the logic behind them so industry at least understands our position and what drives our decision-making."

Andrew is keen to hear from beekeepers about issues and "where to from here".

"I am very keen to engage and discuss things," he said.
"The more we do that, the less we get ourselves into positions of conflict because that's not helpful for anyone."

He says the work that has been done in recent months around the GIA is evidence of the Ministry's desire to work more closely with agri-industry bodies and to develop value propositions that appeal to all parties.

Andrew also notes that final decisions around the importation of Australian honey are still some way off.

"We are not yet in a final place on that matter. We are working to anticipate what we have to do to keep bees safe and we want to collaborate with industry as part of that process."

The Ministry is soon to undergo a change of name to the Ministry for Primary Industries (MPI).

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Buzzy Bee supports Bee Week. The NBA logo has been placed onto Buzzy Bee and a percentage of the profit on the products sold is contributed to the NBA.

NBA Photo Library

Often the NBA requires photos for media, newsletters, Bee Week and general enquiries. We currently hold only a very few photos on file.

If you have what you consider may be a prizewinning photo or two and you wouldn't mind them being used publicly and without copyright, please email them to secretary@nba.org.nz Photos must be attached as a jpg file. Please email each photo with a title and/or caption, and don't forget to add your name so that we may credit you.

See page 3 for more info.

2012 Tutin Standard Review

By Jim Sim, Animal Products Group, MAF

I have a strong sense of déjà vu as I write this, but each time we look at how we best manage tutin, it is with more data and more knowledge which should make for better risk-based standards.

The Food (Tutin in Honey) Standard 2010 came into effect on 1 January 2011. (Refer to http://www.foodsafety.govt.nz/industry/sectors/honey-bee/tutin/index.htm)

MAF is in the process of analysing the information that's been collated from the beginning of 2011—and we have found some interesting things.

> "...most beekeepers are not sending their tutin testing results to MAF as the tutin standard requires."

The highest tutin levels reported from testing done in 2011 were only around four times the limit. This could either be due to environmental factors or changes in beekeeping practice where beekeepers are relocating hives away from the worst tutin areas because of the test results now available. Hopefully it's the latter!

From summary data obtained from the commercial testing laboratories it is clear there is a lot of tutin testing being done, which is reassuring. Some beekeepers are testing individual samples in an effort to better understand the risks around their crop. Where individual samples have been tested, a lot contain low levels of tutin. This is consistent with the testing done in previous years where individual samples have been tested.

Others are testing composite samples to provide assurance that their product is safe, without knowing exactly how much tutin is present. While generally a cheaper option, the information this provides may not be as useful in the longer term.

What is very clear is that most beekeepers are not sending their tutin testing results to MAF as the tutin standard requires. Only around 20% of samples submitted to laboratories have been reported to us by beekeepers with the required apiary location information. Where apiary location information has been provided, it is often not in a usable form. This makes the information that has been supplied essentially useless for us to determine whether there are areas of the country currently covered by the tutin standard that could be exempted.

Options for consideration

It would appear that the only way for apiary location information to be collected and accurately collated with tutin testing results would be through mandatory laboratory reporting. The only available mechanism for this is under the Animal Products Act rather than under the Food Act.

Alternatively, the requirement to report results and apiary locations could be removed altogether. This would leave little prospect of the areas of New Zealand covered by the tutin standard being able to be changed in the foreseeable future. However, beekeepers would still be able to identify apiary sites themselves which don't produce significant tutin through testing over three consecutive years. Testing can then be scaled back to a bare minimum in areas demonstrated to not have a tutin problem. Some beekeepers may already have three years of data that can be used to support this approach.

These options will be discussed further in the upcoming review.

The data collection process has, however, not been entirely futile. Some interesting things have emerged from information submitted to us by beekeepers. One was a six-drum batch that contained 5mg/kg reported, which we followed up to find out more. It turned out that the honey was all from a single area that the beekeeper is now not going to collect from.

It is also interesting to compare the data submitted to us with the laboratory information, although we only have a rough breakdown of beekeeper location with summaries of results available from the laboratories. As an example there were a number of tutin levels over the limit reported by the laboratories from beekeepers in the top part of the South Island, none of which were reported to us directly by beekeepers with location information. Perhaps the top of the South Island isn't quite as free of tutin in honey as some might like to think?

Finally, I want to encourage you all to look out for the Tutin Standard Review document that comes out later this year. Make sure you have your say.

Erratum re. Jeyes Fluid

In a boxed notice entitled 'Repel bees from the honey house' (March 2012), Frank Lindsay advised that spraying a 50/50 mixture of water and Jeyes Fluid would deter bees.

Unfortunately, Jeyes Fluid is not registered as an approved chemical compound under the list compiled by the NZFSA (now part of MAF). This means that if you have an RMP, you cannot use Jeyes Fluid.

We apologise for the error.

- Publications Committee

Prepare for the National Honey Show

By Maureen Maxwell, President Apimondia Oceania Commission

Honey shows are a prime opportunity to showcase your bees' abilities and your talents to produce the finest honey and hive products in the land.

How has your honey flow been this year? Perhaps not so good? It is paramount that you maximise the return from your crop. Innovation, quality techniques and marketing just may be the answer.

Now is the time to start preparing for the third annual National Honey Show, which will take place as part of the next NBA conference in the Hawke's Bay, on Tuesday 26 June 2012.

Entries must arrive at the conference venue, no later than 5 pm on Monday 25 June.

Honey is a luxury product. Only a small number of people in the world still enjoy nature's unadulterated SUPER FOOD.

Honey shows and competitions are an excellent way to improve your harvesting, packing skills and promote our industry's pride in 100% Pure NZ HONEY.

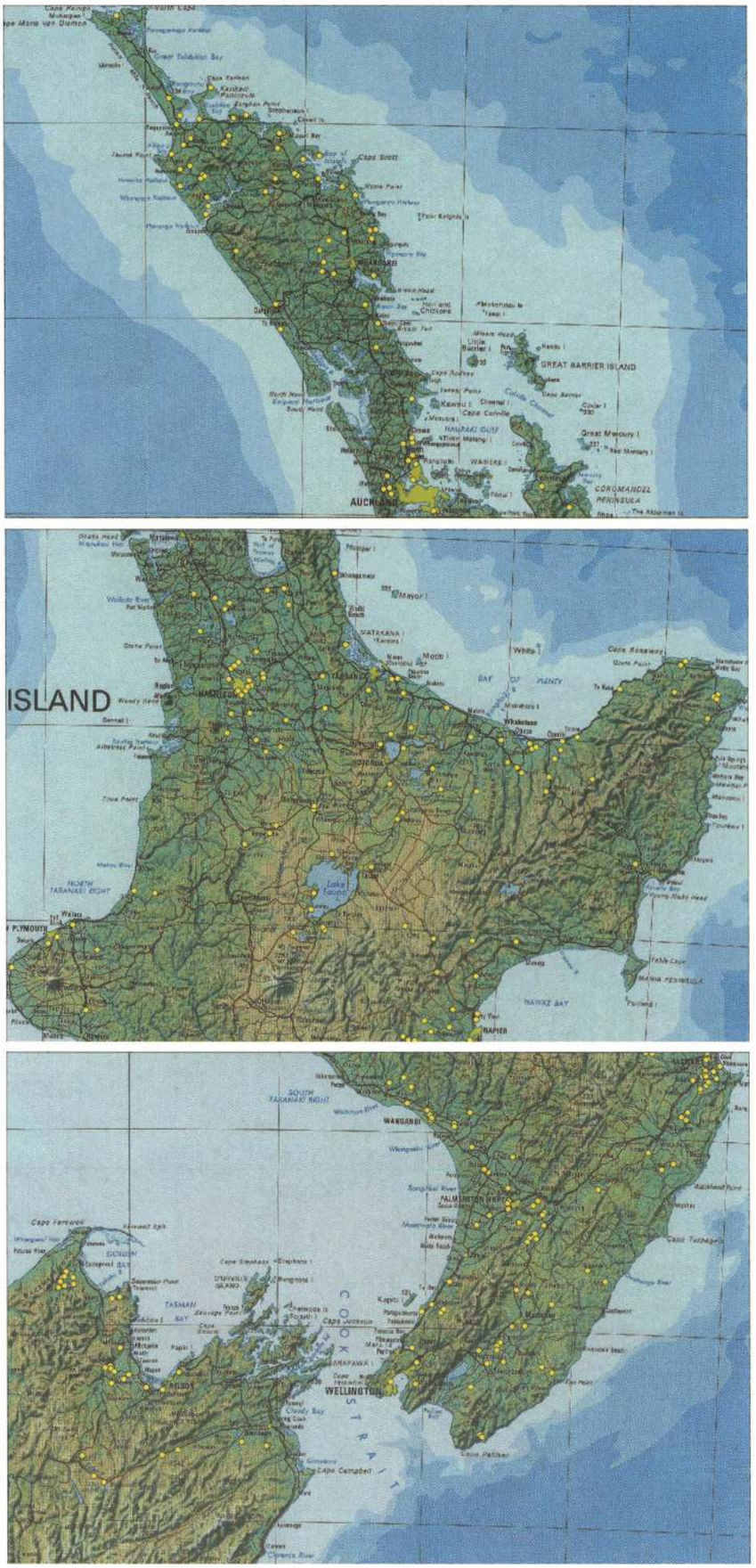
Visit www.nba.org.nz (look under News & Events) for the honey competition schedule of classes, entry forms, harvest declaration forms, hints and tips, show rules and regulations.

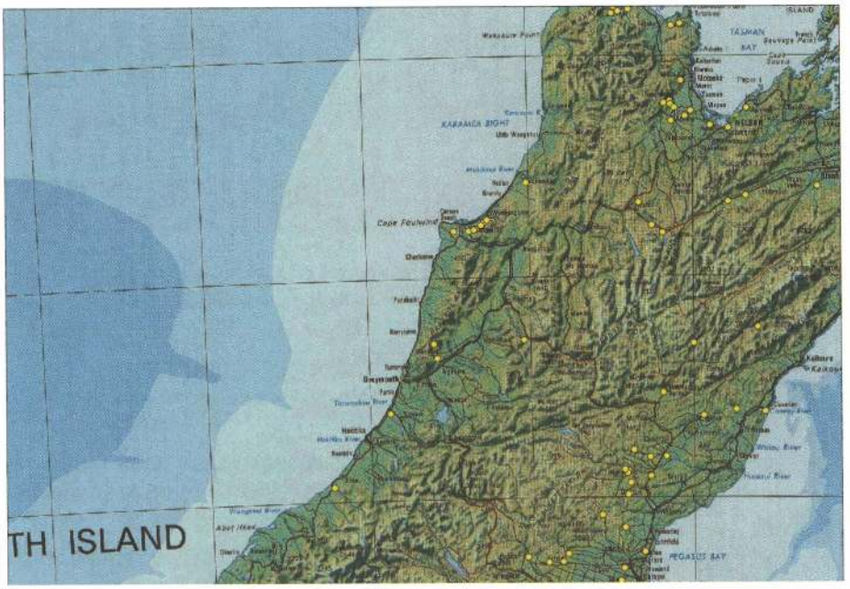
Judges Peter Bray and Maureen Maxwell at work at the 2011 National Honey Show, Auckland. Photo supplied by Maureen Maxwell.

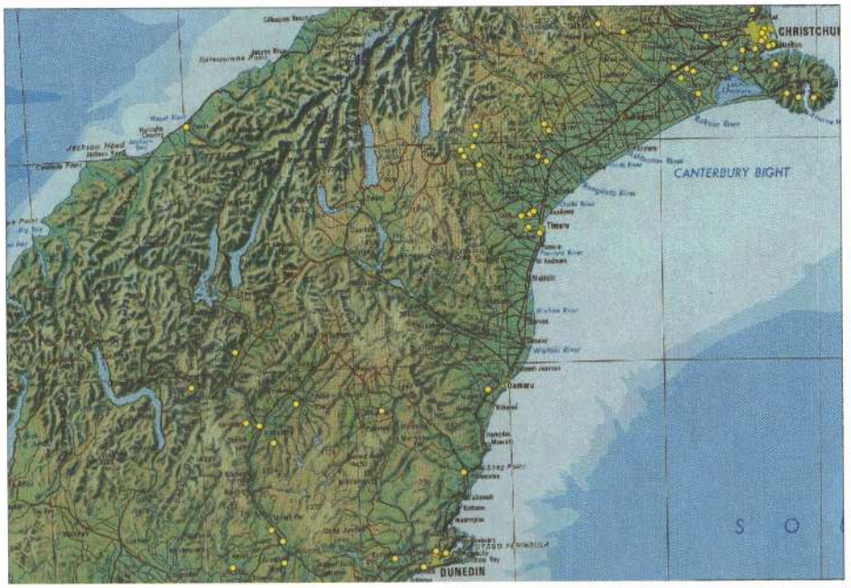
For the Airborne Commercial Monofloral Class details, visit www.airborne.co.nz (See advertisement below.)

BEE Proud, BEE Pro-active and reap the benefits of AWARD-WINNING HONEY!

AFB incidence in the 12 months to 12 March 2012







Maps courtesy of AsureQuality Limited

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3. Feed Protector CODE HDC040 ($1.95 – $2.40 + GST)
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4. Top Feeder Tray 9.5L CODE HDC041 ($5.50 – $8.35 + GST)
Tough food-grade polypropylene construction. Roughed surfaces for bee grip.

5. Feeder Box CODE HDC043 ($5.75 – $7.90 + GST)
Thick insulating 25mm wood surround, assembled and paraffin dipped.

6. Vented Bottom Board CODE HDK001 ($12.65 – $16.85 + GST)
Monitor for resistance quickly and easily! Reduces hive moisture and disease areas without compromising feed usage. Integrated entrance system simplifies winter, summer and closed positions without any additional equipment. Pest monitor trays sold separately.

7. Em-lock Hive Strappers CODE HDC140 ($5.65 – $11.90 + GST)
Available bare with rolls of coiled strapping or assembled with 4.5 meters of hive strap.

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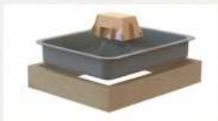

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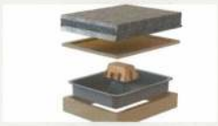

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BPSC working on serious problems

By Dr Jim Edwards ONZM, Chairman, Bee Products Standards Council, www.bpsc.org.nz

The Bee Products Standards Council (BPSC) is working on some very significant problems that will begin to impact on many beekeepers because of market rejections of New Zealand honey.

The BPSC needs your strong support if these problems are to be addressed.

If you have been affected by a market rejection, please report it (http://www.foodsafety.govt.nz/industry/exporting/export-non-conformances.htm) so that the BPSC can gauge the economic impact and put priority on solving these problems.

Sugar testing

There have been recent market rejections of New Zealand honeys in USA and China that have failed the international tests for sugar content. Due to these recent failures, overseas border testing agencies are becoming more vigilant about testing New Zealand manuka honey.

The Council heard a report from Dr Karyne Rogers (GNS Science) that in recent work, 22 of 52 manuka honeys failed the standard AOAC 998.12 C4 sugar test used when exporting honey; then four failed when 22 honeys were retested using her modified method which eliminates false positive results.

Karyne was very concerned about common feeding practices using sugar syrups and protein feeds (containing sugar) that have the potential to contaminate the honey produced by bees fed using these products when not managed correctly.

The Council is supportive of a GNS proposal calling for further sugar research to sort through the test problems and improve the international test method, but needs funding to support this necessary work.

Dr Karyne Rogers will be a featured speaker at the NBA conference in Napier 26–27 June. Please come and hear Karyne's presentations yourself, so that you can look at how your management may be affecting the honey you produce.

Tutin

Please refer to Jim Sim's article on page 26 of this journal.

The Council continues to monitor the management of the tutin toxicity risk to try to prevent another honey poisoning episode. The Council will participate in the reviews of the Tutin limits (Food Standards Australia New Zealand) and Compliance Standard (MAF) this year. The Council is continuing to work with FSANZ and the work being done to investigate and manage the risks posed by tutin.

When considering what is currently available, the Council agreed that an authoritative video about tutin and minimising its risks should be produced for the public good. Such a video may be placed on the MAF website and links to it from other sites such as the BPSC would be encouraged.

PA project

The Council is proceeding with its investigation into the risks posed by pyrrolizidine alkaloids (PAs). These very toxic compounds are produced by a number of plants including Vipers Bugloss. Overseas markets are now testing for these compounds (there are more than 200 different PAs) and some of these have been detected in some New Zealand honey.

With support from the Ministry of Science and Innovation, the BPSC has engaged Jane Lancaster of Catalyst R&D Ltd to manage this huge project for the industry. An application has just been sent to the Sustainable Farming Fund and if successful, a contract for this work will be signed in June this year. While work has already been under way, the major part of this project can then proceed.

This will require significant support from the industry.

Honey standards

Further to previous work that has been done and which can be seen on the BPSC website, the Council has been working with Standards New Zealand who will consult with industry parties to finalise formal New Zealand standards.

This is an important project if New Zealand is to maintain its pre-eminent position in the global market. The Council recognises the need to lead the way and protect New Zealand's position from rival claims, especially for the high value honeys such as manuka.

Again, significant funding is required for this work to begin. Hagen Kerr from Standards New Zealand will also be speaking at the NBA conference in June.

BPSC members meeting at Federated Farmers, Wellington, 7 March 2012. Photo supplied by Dr Jim Edwards ONZM.

The problem with EFB/honey imports

By Colin McLean, Great Barrier Island

Who is pushing for honey imports? The Australian-owned supermarkets? The Australian government? The New Zealand Government?

Given the problems facing the beekeeping industries in both countries, you would think both our governments would be doing more to protect them.

It would seem that MAF is intent on developing an import health standard for honey. They have obviously spent a lot of money and time on this and are probably intent on carrying it though.

This is a policy decision (in my view) and is really a political decision, not an economic one, or even a biosecurity one. It would seem that this is to comply or be seen to comply with international trade rules that want free and unrestricted trade. The biosecurity aspect is managed in a way that 'demonstrates' that the risk is low. There are some significant problems in the way this risk is assessed and the consequences of another pest or disease incursion. By the term 'consequences', you only have to see what Psa has done to the kiwifruit industry. I would assume that a risk/benefit analysis has been done? And if you look at the fact there have been three major bee pest and disease incursions in the past 25 years with no incursions for 75 years or more prior to that, then statistically you would have to say the system is failing.

There is also a problem if the import health standard is managed so that the risk appears to be low. Even if it is not, if the risk is not presented as being low, then MAF would not be able to approve honey imports.

If we import honey from Australia, the general public will assume they can bring in honey themselves. Many will see it as their right to do so and for a hundred reasons will do so without declaring it. The intention to streamline the access for travellers so they do not go through the current biosecurity measures will definitely allow people to easily come through with a pot or two of honey.

If one infected pot of honey is exposed to bees it is highly likely they will contract EFB, and we will have it. It is not possible to eradicate it.

Once you have EFB there are some major issues. Initially a lot of hives will fail due to being exposed to a new organism. The only way to prevent this is feeding antibiotics, which creates more problems. One is that it masks AFB, it prevents AFB spores from germinating but when you stop treating, AFB will develop and in certain situations will become widespread. This in itself is a threat to the AFB NPMS, a strategy formed under the Biosecurity Act that is being put at risk. In many areas it would be impossible to supply pollination hives without feeding antibiotics.

> "There is no such thing as free trade; someone pays the price, somewhere."

Another major issue, as I understand it, is that you cannot export honey to the EU if the hives have been treated with antibiotics (or with severe restrictions). This in itself threatens our export markets. The Japanese market would also likely to be closed.

Another significant problem is the likelihood of importing other strains of AFB and chalkbrood from Australia, which has had these diseases come into Australia with Chinese honey or pollen. It won't be possible to heat treat for AFB, so what happens to that risk?

The problems we are now having with varroa becoming resistant to some of our treatments is going to create a second wave of hive losses that will be difficult to prevent, and how are you going to control re-invasion of resistant mites from collapsing hives? When people who have been around bees all their life start getting very concerned about the situation, you know you've got a problem. If you don't believe me, then you should consider that the USA once had five million beehives; they now have two million. How is the pollination industry going to cope with another exotic incursion?

It seems strange to me that you would sacrifice an industry in the ideology of free trade. There is no such thing as free trade; someone pays the price, somewhere.

Australia and New Zealand should recognise their global importance in food production and protect their primary industries to do this. Contrary to the rhetoric about not wanting competition that we so often hear from politicians, it should be acknowledged that there is plenty of honey available in New Zealand and the local market is very competitive: it's not as if you are supplying an offseason product. Why would you risk an industry for one pot of honey, because that is all it will take for us to get EFB.

In terms of biosecurity, it is the responsibility of importers and the government to ensure New Zealand's pest- and disease-free status. They still consistently fail to do so with new incursions continuing to happen. The idea that an industry should contribute to the cost of an exotic incursion because they would 'benefit' from doing so is a flawed philosophy. Primary producers lose in every way and our country is also losing its ability to be a competitive and cost-efficient producer of food.

The high cost structure that has grown over time has meant that if we are not at the top end of the market then we are not competitive within the world market. The increased costs in controlling new pests and diseases and the loss of production is something that has not been addressed by government or MAF.

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FROM THE COLONIES

Auckland Branch

This has been the season that never came to what it could have been. So much promise for a boomer of a crop but turned out to be an average flow. Autumn has now arrived.

Our new mega council has produced a plan for the long-term future of Auckland and its rural areas: it is a three-volume plan. In the third volume on page 147 there is a one-line statement which reads: Keeping of bees (consent fee) $190.00, along with the keeping of pigs and poultry.

We really don't know what this means, whether keeping bees on council land or if paying for beehive sites on regional parks. A park manager asked a beekeeper about the idea of paying a percentage of the crop of honey collected. We hope that this does not mean a site regulation fee similar to MAF requirements. I feel we all must be watching our local body legislation to see how it affects your area.

-Graham Cammell, Branch President

Bay of Plenty Branch

Autumn weather arrived sometime in late February in the Bay of Plenty. The bees in the home apiary and local floral crops are behaving like it's late autumn already. Most of the bee trucks in the area have sugar tanks on board busy feeding hives. Most people I have spoken to are very disappointed in the honey crop, especially manuka. All areas seem to be well down on last year.

Do you find it difficult to accurately position your apiaries on the Apiweb website map or don't have the old 260 series topographical maps? I came across a tool to convert Latitude/Longitude coordinates derived from Google Maps to a coordinate format that Apiweb will accept. Go to http://apps.linz.govt.nz/coordinate-conversion/

Google Maps uses the coordinate system World Geodetic 1984 (WGS84), and can give you coordinates in North/East order & decimal degrees (just 'right mouse click' on a Google Map position). Using the Linz conversion tool, click on 'Advanced Options' and setup to convert from the above to New Zealand Map Grid (NZMG), East/North & Degrees/Minutes. The output coordinates can be entered into the Apiweb system. *[Disclaimer: I don't have anything to do with the Apiweb system other than I am required to use it ☺]*

- Greg Wagstaff

Poverty Bay Branch

After a very short summer, autumn started about a month early with a lot of wet cloudy days and very little sunshine. Hopefully there will be enough sunny days to get autumn queens mated; only time will tell.

With the poor manuka crop behind us now it is time to get varroa numbers down and the hives in good condition to face winter.

Varroa numbers have been low this autumn and with all the larger beekeepers alternating treatments there are no reports of resistant mites in this district yet. A mix of chemical and organic treatments are being used with most beekeepers using three or four different treatment families.

Hopefully there will be enough dry days so that hives can be accessed to be wintered down properly before the end of the season.

-Paul Badger, Branch President

Hawke's Bay Branch

Normally in February the weather is perfect but it is too dry and there are no flowers left. This year it was the other way round and while we have not had the floods that some places have had, it would have to be the coldest, wettest February I can remember. It certainly hasn't helped the honey crop. I have had many mixed reports with some areas (especially coastal) doing exceptionally well and others quite poorly, but I would expect most people around here to get at least an average crop.

Varroa numbers seem to be generally quite low this autumn, which is good in that the AFB outbreak this past spring seems to be largely under control.

I gave a friend a hand the other day to check his hives for AFB. He took the honey off while I checked the brood. He then put one-way bee escapes on the hives and put the honey boxes back on top. It wasn't till the last hive that I noticed he was putting the bee escapes on upside down.

Conference update

Conference planning is well advanced and we have a well-rounded group of speakers with the emphasis on the positive side of beekeeping. Don't forget to save some of your Epicurean delights for the honey competition.

- John Berry, Branch President

Southern North Island Branch

Generally the honey harvest in our area has been below normal standards. In some areas beekeepers have reported on satisfactory honey harvest but in most it is around 50 percent of expectations. The weather has not been kind to us, with a lot of rain and cooler periods. Manuka harvest has been poor and in many areas the clover has not yielded as well.

Beekeeping clubs are in the middle of taking honey off: most of the club members have hives in the residential areas and they have had a good season. In my own hives around Wanganui city I have taken off at least two boxes of honey and often three boxes—very different from the rural sites. Clubs report a growing interest from new beekeepers with membership growing. There are ongoing discussions with NBA over affiliation, which are not resolved at this stage. Generally club members appreciate the greater work of NBA with research and Government lobbying, but members are also asking what other benefit is there for them for the extra monies/levies suggested by NBA.

Requeening, either by using queen cells or mated queens, has been undertaken by most of the commercial beekeepers. Many have reported a good uptake by the hives of the new queens, in spite of the weather variations. By the time you read this wintering down will be well under way.

Our Branch executives are having trouble at the moment. Treasurer Mary-Ann Lindsay is recuperating from a shoulder operation and Chairman Peter Ferris is waiting for a similar operation. Consequently it will be a while before we have a branch meeting.

The intended "Camp Rangi" educational weekend on beekeeping will be deferred to 2013.

- Neil Farrer, Life Member

Nelson Branch

With the Nelson weather bombs over, the crop appears to be reasonable with good tonnage reported in inland areas.

As beekeeping becomes more difficult and costly it's good to see the demand for our products and services increasing in value.

With the fruit industry going through some hard years and Psa at the door, most businesses are under constant change. Let's hope everyone operates with good manners and integrity.

- Gareth Ayers

Canterbury Branch

After a very promising start to the season, the season has pretty much finished on a whimper here in Canterbury. The weather since Christmas and right into March has been pretty much overcast, albeit warm and wet. I feel sorry for the local grain farmers: the damp overcast conditions are really trying their patience and some crops are starting to sprout in the paddock. All the signs are here for a long cold winter. Even though the autumn queens have been slow, the bees are in good condition and should winter well.

As with most beekeepers, I was disappointed with the latest list of unhealthy foods recently published. Well done to all those who came to honey's rescue. To me it is unbelievable that suddenly honey can make this list after being mankind's first sweetener, and probably mankind's first brewed beverage and natural medicine. It's a pity that these benefits haven't been acknowledged and given the credit that they deserve in getting mankind to the healthy lifestyle we enjoy today. It is only now, when we are arrogant enough to think that good health comes out of a bottle, that this attitude to natural foods can prevail.

- Brian Lancaster, Branch President

Otago Branch

Given that the latter half of summer has been anything but summery, Otago beekeepers feel very lucky to get such a good crop. With bees timing is (almost) everything.

A wet and warm November set the ball rolling early with prolific growth and flowering across the province. Plenty of moisture in the ground got us through a very sunny December and early January before the inevitable dry began. Later rains kept the flowers coming but finally the cloud cover and cool weather all but stopped play.

By then, however, the crop was in the bag. The sometimes seven days of good gathering for us was more like seven weeks this year and bees did splendidly.

It seems much of the top-grade clover is fast leaving the south for the strong Asian market at record prices. It is hard not to smile, eh? I guess we all get a good year once in a while to keep us hooked and this year was Otago's turn.

For those of you where it didn't work quite so well this season, I am sure by next spring you will be fired up once again.

- Peter Sales, Branch Secretary

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Time to winter down

By Frank Lindsay, NBA Life Member

The last of the late sources of nectar and pollen are now in flower.

Gorse is providing valuable pollen while there is a dribble of nectar coming in from lacebark and koromiko. I have also seen clover, buttercup and catsear flowering since recent rains. Some farmers have let ragwort get away which is also providing a little nectar in some districts.

Inside the hive, the queens are still producing brood that will mostly be the bees that survive most of the winter. Meanwhile, the foragers are out gathering the last of the nectar and pollen and storing this around the brood nest where the bees will cluster for the winter. You can tell when the bees are closing down for winter as they start driving out the drones.

Winter preparations

Once the robbing season is over, do a complete inspection of the brood frames and set the hives up for winter. It's very important to check the brood and areas where the brood is emerging for AFB. Your strong hives could have robbed a weak hive and brought back AFB spores. Luckily most will never see this, but always check as this gives peace of mind and early detection can save it from spreading. You can open up and inspect a hive if it's comfortable to have your arms bare. More experienced beekeepers will work hives when it's cooler but they open the hives for only a short time.

The on-again, off-again weather in some areas has confused the bees into thinking it was spring and some have used the stores left when the honey was removed by turning it into bees. This will have to be replaced either by putting more honey frames into the hive, or sugar feeding so each hive has a super of honey to winter over on. Some beekeepers can leave less than a super but it will depend upon what spring sources you have close to your hives (willows, barberry, hawthorn, cabbage tree, etc.) to provide early nectar and whether you intend to feed the hives sugar syrup. I tend to err on the heavy side and leave a lot on honey on the hives. Honey is the bee's natural food, containing minerals and vitamins that the bees need. A hive that dies from starvation dies from neglect and shouldn't happen.

You can winter bees in anything from a small nuc all the way up to two or three high full-depth Langstroth hives. The important point to remember when wintering colonies in small nuc boxes is that the bees must completely cover all the frames as well as having adequate supplies. Often with nucs it's necessary to check mid-winter to see that they still have stores. Replace the outside frames with honey frames but don't disturb the cluster.

> "A hive that dies from starvation dies from neglect and shouldn't happen."

Weak hives should have a strong hive united on top of them. That way the bees from the strong hive going down through the sheets of newsprint will dispatch the old queen if you haven't been able to do this yourself.

Protecting honey frames

For most hobbyists, the season is done and dusted. Treatments are in the hives, the honey supers have either been put back on the hive(s) for the bees to clean out or put away for safe storage. Don't be complacent. If you look on the side of your hive(s) you will often spot the odd wax moth waiting until night when it can slip into the hive and lay eggs. Luckily the bees detect most of these eggs and kill them or the very small larvae. But some eggs will be laid in cracks and in tight spaces where the bees can't get to: these will hatch and then burrow into the brood comb and grow, spinning a protective web to stop the bees getting at it. Your unprotected honey supers are an easier target and can quickly be destroyed.

One method to protect your honey frames is to freeze them for 24 hours. This is not practical for those with more than a few hives so supers have to be stored as is. I tend to leave the extracted supers on the hives until it gets cold as the bees protect the frames. For those that don't, wax moths don't like bright airy places (preferring dark and still places), so stack your supers in a light airy environment such as a partly open shed. I generally stack my honey supers on pallets with a queen excluder top and bottom to allow a good airflow and prevent mice getting into them. Queen excluders are reasonably expensive but this is a small cost when a pair can protect a stack of eight supers valued at $30 per super.

When your varroa treatments are removed, fork out some brood or check the natural mite fall to determine how successful your treatment has been. I checked some of my apiaries last month while putting in strips. In some apiaries, only the outer hives had high mite numbers (according to the slides under the mesh bottom boards) but when inspecting all the hives I found some hives where the bees were emerging with deformed wings and I could see the odd varroa mite running around on the frames. You have to look to know and be prepared to have to treat again in some areas. For those who had high rates of swarming, it might pay to put in another treatment again in May when the feral hives will start collapsing from varroa.

Things to do this month

Winter down hives. Check feed and the effectiveness of mite treatments. Do an AFB check. Slope bottom boards and fit mouse guards. Replace rotten or damaged supers and bottom boards. Attend to fences, check for wasps and control grass.

Freeze stored supers to kill wax moth eggs and larvae or store in a shed that is open and has a good airflow through the supers. Those in the North Island and perhaps the top of the South will have to watch more closely for wax moth infestation. Those in the southern parts of the South Island can smile, as they do not have wax moth problems.

The permanent observation hive

By Jeff Murray, 115 Pearl Street, Cambridge, MA 02139, USA. Email: jnj.murray@verizon.net

This is the first part of an article focusing on how thermoregulation defines the architecture of honey bee colonies and how it applies to observation hives.

Observation hives have often been considered temporary, and used primarily for the purpose of scientific experiments or commercial displays. Even when established as a more permanent exhibit, most often they have been operated as the satellite of a regular Langstroth hive from which frames are taken or put back.

My experience has been different. I have been able to keep them, sometimes for years, wintering over with just two frames at a time with a queen and a few hundred bees. How is this possible? The answer, I believe, can be found in the principles of honeybee thermoregulation.

I have no formal training as a biologist. I started out in the usual way as a hobbyist beekeeper. Quite by chance, after seeing an observation hive in a museum, I decided I had to have one in my house for the benefit of my children. I have been working with observation hives, on and off, for about 30 years now. The last 10 years have been the most rewarding because I have been able to set up first one, and then two, such hives in the Boston public schools. Without this experience, especially the help of the teachers and my friends, this paper could never have been written.

Luckily for me, I blundered upon observation hives without knowing their reputation for being fragile and temporary—if I had known, I might not have been working with them at all. Instead, I set about first learning how to make them work and then trying to figure out why they worked at all.

I also started reading extensively about bees, and subscribing to a trade magazine (the *American Bee Journal*), to try to understand how a hive functions in general, and how observation hives do in particular.

Early on, I felt heat loss was going to be a problem in cold weather, with all the cold conducting glass exposed to a cold room where I kept my first one. At first I had the notion that by surrounding the glass with a heating element, as you might protect some pipes from freezing, I could find the ideal temperature for the hive.

I quickly realized that the bees were so good at adjusting to their thermal environment that all I had to do was offset the conductivity of the glass by placing foam insulation on it, and they would take care of the rest. Gradually I realized what a great resource an observation hive could be and wondered why there were so few used in schools, or anywhere.

I. Thermoregulation

Thermoregulation, the ability of these social insects to maintain a constant temperature between 33–36°C in the brood nest despite a very wide spectrum of ambient temperatures, is one of the great evolutionary accomplishments of the honey bee (*Apis mellifera*). So crucial is the perception of temperature change to bees that an individual worker is able to pick up changes to within 0.25°C using receptors located on her antennae (Mathis & Tarpy, 2007).

Thermal homeostasis is a state of equilibrium between different interrelated elements of the honey bee colony to maintain a constant temperature in the brood nest between 33–36°C. How this happens in cold and hot weather for all hives and how it applies to observation hives in particular is the subject of this paper.

There is a continuum of changing density of bees within a given space as the temperature increases from cold to hot. At the cold end, they totally surround the warm core of the cluster with the outermost surface of bees getting as close to each other as physically possible, heads facing in, in an outer layer of protective insulation. In the middle of the temperature range they stay close to each other so they can maintain the brood-rearing temperature. As the temperature gets warmer, they get further and further apart, until some of them actually move out of the hive altogether.

A. Population and thermoregulation in the winter cluster

To survive in winter, bees form a 'cluster'. They must occupy an area of empty comb so that the whole volume—including the empty cells and the bee space between them—is packed with bees, directly under and distinct from their stores of honey.

As Edward Southwick points out, "the clustering phenomenon itself precipitously reduces surface area for heat exchange from the sum of the surface area of individual bees down to the outermost surface area of the cluster." What he means is that the outside insulating 'skin' of the cluster, formed of bees packed as close as possible with only their abdomens showing, reduces the size of the surface presented for heat exchange between the cluster and the cold interior temperature of the hive T(h). By exposing their rear, instead of their whole body, to the cold, they have considerably reduced the surface exposure (Southwick, 1983). On the continuum of closeness in relation to temperature, this is at the bottom of the scale.

In earlier research, Charles Owens conducted an experiment during five consecutive winters in Madison, Wisconsin. By placing 192 heat-sensing thermocouples in each one of several hives, parallel and perpendicular to their fronts, he was able to map out the shape, comportment, and distribution of the population at each temperature level (what he calls an "isotherm") inside the cluster.

Between the measured temperatures, he isolated a specific population of bees and

observed their behavior in the cluster as they moved or became less dense. He then compared three different types of hives, each modification being defined as a "treatment".

One of the significant facts in the article is that if the temperature inside the hive T(h) was modified either by insulation (the "packed" treatment), or by a heating element (the "tape" treatment), the size and shape of the cluster would grow larger, particularly between the first two isotherms (Owens, 1971).

Owens also contends that, to survive, a colony must be "strong" rather than "weak" so as to be able to reach food outside the cluster. I interpret "strong" to mean a large population, and "weak" to mean a smaller one. This suggests that at a given temperature, a colony must have a critical mass of bees to insure that the core of the center remains at brood rearing level; otherwise they cannot counter the heat loss caused by the ambient temperature, even with the protection of the hive, the insulating shell between the first two "isotherms", and the requisite food (Owens, 1971).

Has the size of this critical population been quantified? In *The ABC and XYZ of Bee Culture*, Morse puts an actual number of 12,000 to 15,000 bees (4 or 5 pounds or 1.814 to 2.268 kilograms) for such a population (Morse, 1990, p. 475). Most of this research is site specific without saying so explicitly. It would be interesting to find out (if it has not been done already) whether, for example, in a warmer climate where, the winters were very mild, the size of the cluster and the stores of honey would vary.

Heat generation is an essential feature of the cluster. While it was always assumed that the warm interior was a source of heat only because of the oxidation through the digestion of honey, in 2002 Anton Stabentheimer, Pressl, Papst, Hrassnigg, and Crailsheim et al., using new infrared technology, were able to measure the temperature of the individual parts of bees' bodies, and show that there were also some workers who actually made heat (thermogenesis) by "shivering" (activating their wing muscles) (Stabentheimer et al., 2003).

Finally, another factor is a source of fuel (honey) to maintain temperature by digestion. The hive must accumulate enough food to feed itself during the period that nectar is not available to survive. Seeley mentions a volume of 40L as the preferred choice of scout bees searching for a new home site if they want to store enough honey for this purpose (Seeley, 2010, p. 56).

So far, then, the three factors involved in the bees' strategy to deal with the cold are:

1. being inside a protective structure (natural or artificial)
2. heat generation by a large enough population to overcome the cold hive temperature T(h), as it is affected by the ambient temperature T(a), and
3. enough food to allow this to happen.

B. The sphere: how the shape of the volume affects thermoregulation

But there is an additional, fourth, factor: the shape the colony takes during the winter cluster. It usually coincides with the shape of the brood area. (There are some exceptions: clusters that are separate from brood areas, as referred to by Taber & Owens, 1970.)

To describe the shape of the cluster, the brood area is a good place to start. Many readers are familiar with the brood pattern in a Langstroth hive's deep supers. The center frames usually have the largest circumference of brood. The further away from the center, in either direction, the greater the reduction of the brood circumference pattern on the frames—until it practically disappears to nothing on the very last ones. If somehow you could take an X-ray of only the bees, it would tend to look more and more like a sphere.

Southwick (1983) speaks of the shape used to reduce heat exchange surface as the "spherical cluster". Tabor and Owens, in their experiment with small colonies, where bees were allowed to build their own combs in an empty cube, postulate after statistical analysis that the "ideal shape for embryo colonies of bees is a sphere" (Tabor & Owens, 1970).

Here is the full quote:

> The hypothesis, tested by the analysis of variance, is therefore advanced that *the ideal shape for embryo colonies of bees is a sphere.* For such a shape, the correlation of weight to height, *height to length, and width to height should be positive and significant for all population groups. In our test, of the twelve correlations (omitted because of length), seven were positive and five were negative, but only one difference was significant at the five per cent level of confidence.* (Tabor & Owens, 1970, p. 630) [emphases mine]

In other words, the sphere is the form that the bees prefer for the brood nest, and by extension the cluster. (Even though, as it often happens, they do not quite get to this perfect shape.)

Why a sphere? For thermal reasons, I believe. We have already seen from Southwick (1983) that the outer layer of bees, by coalescing tightly together, offers the least space for heat exchange between warm and cold locations in the hive. In a sphere, all the bees on the outer shell of the cluster are equidistant from the warm center, and by the same token, the center is equally insulated from the cold. This does not mean that the cluster does not move around or take somewhat different shapes, but the thermal character of the sphere still applies.

To give an idea of the implications of different cluster shapes on heat conservation or heat loss, take, for example, a tetrahedron: a pyramid made up of four equilateral triangular sides. If the cluster had that shape, the bees at each one of the points of the pyramid would be colder than all the bees in the center of the pyramid. They would be more and more exposed to the outside cold as they moved further and further toward the tip of the points, and away from the interior. The interior would, at the same time, be exposed to three 'cold spots' where the points join the center of the pyramid.

To generalize: the more the shape of a cluster is spherical, the more it can conserve heat, and conversely, the less spherical, the more it loses. In an irregular polyhedron this would even be more so. This means that the cavities chosen as home sites must allow for a more or less spherical cluster; otherwise, the advantage of a large population that Owens has described and Morse has quantified will be lost.

Continued on page 41

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The Beeswax Specialists

Continued from page 39

So, not only the size of the population, but also the shape it takes in the winter cluster, is crucial for successful thermoregulation. Architecture does matter!

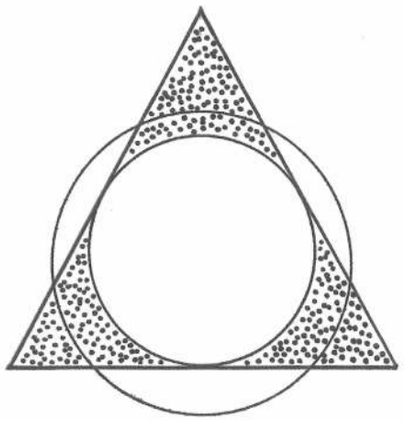

Figure 1. This figure represents a cross section of a tetrahedron pyramid cut perpendicularly from the apex to the base. The outer circumference represents a cross section at the center of the sphere of approximately equal volume to that of the tetrahedron. For example, if the side of tetrahedron is 5, then the volume will be 16.263015; if the radius of the sphere is 1.96875, then the volume will be 16.235689, approximately the same size volume. In the tetrahedron, you can see certain areas that are more exposed than the sphere of the same volume.

The inner circumference represents a cross section of the center of a sphere inside the tetrahedron where all points are equidistant from the center. The shaded areas show locations where a cluster of this shape would be most vulnerable to the cold.

C. Ambient temperature [T(a)] and temperature within the hive [T(h)]

In discussing thermoregulation, there are two different temperatures to keep in mind: ambient temperature or T(a), the temperature outside the hive, and T(h), the temperature inside the hive.

We have seen that bees at different temperature levels of the cluster (which Owens calls "isotherms")—particularly bees between the outer layer at the surface of the cluster at 44°F (6.66°C) and the next measured layer of 60°F (15.5°C)—react differently to Owens's different treatments. When he modified the interior temperature, T(h), by adding insulation (packed treatment), or electrical heating tape (tape treatment), the shape of the cluster expanded. (Bear in mind, as Owens has demonstrated, that the cluster is often moving around in the hive.)

Another example of the effect of modifying the T(h) is in Morse's description of hives in cellar wintering, a technique that was often used at the turn of the past century. While only one of the variables of the equation, food consumption, is measured, the hive temperature, T(h) increased, when they are moved to a relatively warmer place. When the hives are outside they consume 49 pounds (22.3 kilograms) of honey during the season, but when they are placed in a cellar they only consume 15 to 29 pounds (6.8 to 13.2 kilograms) (Morse, 1990, p. 473).

Even with his different treatments, Owens was modifying the T(h) in a relatively small range (the winter temperatures of Madison, Wisconsin). What would happen if the modifications were more extreme: as in observation hives kept in a warm 68°F (20°C) room, or in a cooler setting with foam insulation on the glass, both set ups having an opening to the cold outside; where the temperature was raised significantly above cluster forming temperature of 57°F (14°C), or if brood was present, where the necessary thermal level is easily maintained? These are precisely the kind of modifications that we have used in the last 10 years. (More on the results in the second part of this article).

Before closing the subject of temperature, let us consider the special importance of ambient temperature, or T(a). T(a), gives all colonies essential cues from the environment. First, whether it is too cold to fly below 54°F (12.22°C) (Morse, 1990, p. 178). Second, and more importantly, when to start preparing for winter the queen will stop laying, bees will move closer together, and more nectar will be stored around the brood area). Third, as the nursing needs diminish when the queen stops laying, the ingested protein that the workers take in is turned into an egg yolk-like substance, vitellogenin, instead of being used to generate royal jelly. This will prepare the surviving bees to live through the long winter.

Another essential environmental cue, not related to temperature, is the amount of light coming through the hive opening. The days are longer after the winter solstice, triggering increased brood rearing by the queen (Morse, 1990, p. 473).

Now let us look at how thermal homeostasis plays out in cold weather.

D. The thermal homeostasis equation in cold weather

We first present the equation, which defines thermal homeostasis in cold weather for all hives. We can express this as follows:

P(SV)+ F / T(h) = Thermal Homeostasis (in cold weather)

where P is Population, SV is Spherical Volume, F is food supply, and T(h) is temperature inside the hive.

This relationship assumes:

1. population as a critical mass able to generate enough heat to overcome the cold temperature in the hive
2. volume, more or less in the shape of a sphere to assure the most efficient use of the heat generation in the cluster, and
3. enough food as a fuel to allow this action to take place.

Since all these variables need to increase as the temperature gets lower, we can say that the three variables: population, spherical shape, and food supply need to be larger as the T(h) gets smaller. We can say that they are inversely proportional to each other.

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Continued on page 43

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Neville Marr
Chartered Accountant

An accountant who understands your business!

I'm a Blenheim based chartered accountant, hobbyist beekeeper, and business partner with all of my clients. What's important to me is understanding my clients business and bringing that personal touch. Please contact me confidentially and without obligation if you'd like to discuss how I can assist you and your business this year.

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I'm 24 years old and I am a beekeeper.
I'm looking for a seasonal job for 3-6 months.
To contact me, my email address is:
ale.tonolo @ gmail.com

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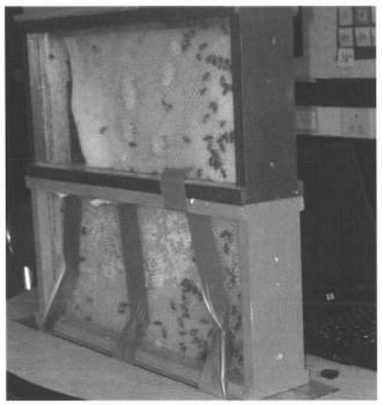
PA & SC Steens Ltd, Masterton has vacancies for experienced beekeepers. Minimum of 2 years commercial beekeeping experience essential. Term from August 2012 to May 2013. Drivers licence essential. HT class licence advantageous as could lead to permanent position. Wage to be negotiated. Applicants for this position should have NZ residency or a valid NZ work permit.

Please send your covering letter, cv & qualifications to sarah@steenshoney.co.nz



Two frames freestanding on a table with the bees inside. Photo: Jeff Murray.

Continued from page 41

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[Editor's note: Part 2 of this article will look at how thermal homeostasis plays out in hot and warm weather and in observation hives in cold and warm weather.]

IN THE NEWS

Experts agree on robust manuka honey test

Media release from Manuka Health New Zealand, 5 March 2012

Scientific experts agree that measuring the level of the active compound—methylglyoxal—in manuka honey is a robust test of its anti-bacterial activity.

"Testing for methylglyoxal is a clear and unambiguous way of letting consumers know that the antibacterial activity of the honey is the genuine, special type of activity for which manuka honey is famous," says Professor Peter Molan, director of the University of Waikato's honey research unit.

Professor Thomas Henle of the Technical University of Dresden, who identified methylglyoxal in 2006 as the compound responsible for manuka honey's unique antibacterial properties, also says testing for methylglyoxal levels in manuka honey is a reliable, quantitative method.

"A labelling system has to be scientifically sound, based on a method which is published and can be used in any laboratory. This is definitely the case for methylglyoxal manuka honey labelling."

The methylglyoxal rating system measures actual levels of the compound responsible for manuka honey's antibacterial activity, methylglyoxal.

Both experts agreed that the special activity of manuka honey was its non-peroxide, antibacterial activity and that the level of that activity was in line with the level of methlyglyoxal.

However, both professors said the correlation between the two was approximate and should be used only as a guide for rating manuka honey.

Professor Henle, whose visit to New Zealand was sponsored by Manuka Health New Zealand Ltd, recently outlined his group's new research into manuka honey in lectures at the Universities of Waikato and Auckland

The Dresden study examined the possible health risks of consumption of naturally-occurring methylglyoxal in manuka honey.

Professor Henle said the research showed unambiguously that methyglyoxal in manuka honey was not absorbed into the body and did not pose a dietary risk for consumers. Methyglyoxal was rapidly degraded to lactic acid in the small and large intestine.

"Our research shows that dietary methylglyoxal in manuka honey is stable in conditions of the mouth, throat and stomach where it has antibacterial activity, killing "bugs" that can cause infection and that it is safe to eat."

Manuka Health New Zealand Ltd is the only company worldwide to market MGO™ Manuka Honey products, with certified levels of methlyglyoxal.

The company has led the way in developing an accurate testing regime to measure methylglyoxal levels in manuka honey. The methylglyoxal content is shown on the label and is measured using a reliable testing system.

Manuka Health's New Zealand extraction facility has ISO 17025 certification and accreditation by International Accreditation New Zealand (IAANZ). Its test method has been cross-validated with the test method used at Dresden Technical University's Institute of Food Chemistry.

Source

Media release from Manuka Health New Zealand Limited entitled 'Experts agree on robust test for manuka honey'. Inquiries to Liz Glasgow, ph 09 422 9569, 021 269 9440 or liz.glasgow@yahoo.com

VSH programme update

By Michelle Taylor, Warren Yorston and Mark Goodwin, The New Zealand Institute for Plant & Food Research Limited

The Varroa Sensitive Hygiene (VSH) Honey Bee Breeding programme was established in September 2004 by Plant & Food Research (PFR) at the request of the National Beekeepers' Association (NBA).

The programme was funded through financial and 'in-kind' contributions from individual beekeepers, PFR, ZESPRI Group Limited and the Avocado Industry Council, as well as matched funding from MAF's Sustainable Farming Fund (SFF). These contributions have enabled a VSH breeding programme to be developed that creates an opportunity for industry to produce honey bees that interrupt the cycle of varroa reproduction, making current varroa control techniques more sustainable.

The aim of this research was to provide a varroa control tool to reduce the amounts of chemicals we use in our colonies, thus slowing the development of chemical resistance. However, with chemical resistance it is important to slow the build-up of varroa populations between chemical treatments, so they do not cause damage to the nurse bees that are raising the next generation. The damage is caused by viruses that the mites transmit. Therefore, controlling the varroa in a colony will reduce the spread of viruses and increase the health of the colony.

The primary mechanism of VSH is the ability of bees to detect and either disturb or remove varroa with offspring that are inside sealed pupae cells. If the mother mite is removed or escapes without the honey bees damaging the pupa, the bees will re-seal the cell with the pupa intact. Once varroa are disturbed by the cells being uncapped, only a few continue to produce female offspring. The degree of the VSH trait occurring in a colony is identified by calculating the percentage of 'non-reproducing mites' within a frame of purple-eyed pupae; e.g., 40% VSH means that 40% of the mites did not produce viable offspring during that cycle.

> "The damage is caused by viruses that the mites transmit."

The aim of the programme was to answer the following four questions:

1) is the VSH trait present in New Zealand?
2) can we increase the amount of VSH being conducted by a single genetic line of bees?
3) how long can VSH colonies survive without treatment?
4) can this VSH trait be maintained naturally in the field?

The answers to these questions would determine if honey bee populations containing the VSH trait could be maintained by industry.

Methodology and results

Sixty-five queens, from numerous geographic regions, were purchased from around the North and South Islands of New Zealand. These queens were deemed by queen producers to be genetically diverse, which would increase the likelihood of finding the VSH trait. The queens were established in colonies of commercial size and analysed for the VSH trait once the majority of the workers had been produced by the queen. This process takes a minimum of two full brood cycles (40 days).

The VSH trait was found in 23 of the New Zealand queen lines. Eighteen of these displayed between 10% and 36% VSH behaviour, so these lines were used to establish a closed-mating, VSH breeding programme.

Artificial insemination was used to select for the VSH trait in each of the queen lines. Daughter queens were mated with semen loads from two brother drones. Single-drone inseminations proved to be unsuccessful, although a few were conducted successfully in 2010. Because of the timing of drone maturity, some lines were crossed with drones from sister lines. No observations of detrimental brood symptoms were made. The highest rate of the VSH trait increased from 36% to 65% VSH in one year (two generations of artificial insemination). This was then increased to 80% by the end of the following year.

For the next two years we began to look at how long the VSH colonies could survive without treatment and tried to determine if a VSH population could survive on an offshore island with only limited intervention. In December 2007, 48 colonies with varroa, from which all drones had been removed, were moved to Great Mercury Island (GMI). The owners of GMI, Sir Michael Fay and David Richwhite, generously supplied labour and resources to assist with maintaining the colonies on GMI for three years. Queen cells from the three highest VSH queens were placed in the colonies and allowed to mate naturally with drones from these VSH parent colonies. Two colonies survived the year without being treated for varroa. The first was treated at 16 months and the second was treated at 23 months. The other 46 colonies required treatment or died. Because the treated colonies were unable to control the varroa, it suggests that the VSH trait was not passed on to all of the daughter queens. Therefore, to determine whether the VSH trait is present in a queen an assessment needs to be conducted on her workers.

The parent lines were maintained at PFR Ruakura by mating virgins in nucleus colonies on GMI with drones from these VSH colonies and transferring them to commercially sized colonies at Ruakura. At least two generations were completed without identifying the rate of VSH in the parent colonies from which the drones and daughters were selected. This resulted in the highest rate of VSH being reduced to 65% and the lowest to less than 10%. This shows that without regular selection pressure the VSH trait within a closed population will reduce. →

Incidents over the years that reduced the number of lines containing the VSH trait included wasp damage, starvation, poor drone production and two wet springs followed by short summers. We also out-crossed some of the VSH queens (by accident rather than design). However, one benefit of this was the introduction of additional genes to the lines.

We re-selected for the VSH trait from this smaller gene pool and naturally mated the VSH virgin queens on GMI using drones from five VSH drone colonies. The VSH lines had 50%, 50%, 52.8%, 62.5% and 100% non-reproducing mites.

The selection for the VSH trait was the primary focus but we also partially selected for the following characteristics:

a. bee temperament: by not wearing gloves when working the colonies
b. low maintenance over winter: by not breeding from colonies that needed excessive feeding in winter
c. healthy queens: by excluding queens with diseases such as chalkbrood.

A request for Expressions of Interest to maintain the VSH stock was published in *The New Zealand Beekeeper* journal, October 2010. Five responses were received but these were to assist with the programme rather than take it on. As the programme was to finish in July 2011, we were granted a one-year extension to the SFF funding to enable queens produced by PFR to be sent to beekeepers for comparison.

In May 2011, 36 queens from the five VSH lines were mated on GMI and sent to six beekeepers within the industry for analysis. An additional 36 VSH queens that were mated naturally with random drones in the Waikato were also sent to the same beekeepers. The beekeepers did not know which queens were fully VSH and which were half-VSH.

In September 2011, there were 43 surviving VSH queens. These were assessed for the number of varroa per 300 bees, colony size, brood health, temperament and rate of VSH. This analysis was repeated at the start of February 2012 and the amount of honey produced was recorded. Each beekeeper also conducted the above assessments on five of their own colonies. All six beekeepers have currently supplied the information they collected and these data will be reported in the June 2012 issue of *The New Zealand Beekeeper* journal. This comparison will provide industry with a snapshot of the abilities of the bees carrying the VSH trait in comparison to other bee populations.

A single frame of purple-eyed brood was removed by PFR from each surviving VSH colony by mid-December 2011. The percentage of mites not reproducing was analysed. PFR also analysed frames from the remaining three mother colonies and three drone colonies.

PFR produced drone colonies in spring 2011 and maintained these for five months to supply VSH semen to any beekeeping outfit that showed interest in undertaking the programme in some capacity. Betta Bees purchased 250 µl (microlitres) of VSH semen from PFR for addition to their breeding stock. This was approved by NBA and PFR with the understanding that if the VSH stock died, VSH semen could be purchased from Betta Bees at a price comparable to that at which Betta Bees initially bought it.

The Management Agency - Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998
Special Purpose Financial Statements Year Ended 31 May 2011

INDEPENDENT AUDIT'S REPORT

To the Minister of Agriculture:

We have audited the special purpose financial statements of The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998 on pages 3 to 6. The special purpose financial statements provide information about the past financial performance of The Management Agency Biosecurity (National Foulbrood Pest Management Strategy) Order 1998 as at 31st May 2011. This information is stated in accordance with the accounting policies set out on page 7.

Executive Committee Responsibilities
The Committee is responsible for the preparation of the special purpose financial statements which fairly reflects the financial position of The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998 as at 31st May 2011 and of the results of their operations for the year ended 31st May 2011.

Auditor's Responsibilities
It is our responsibility to express an independent opinion on the special purpose financial statements presented by the Committee.

Basis of Opinion
An audit includes examining, on a test basis evidence relevant to the amounts and disclosures in the special purpose financial statements. It also includes assessing:

- the significant estimates and judgments made by the Committee in the preparation of the special purpose financial statements; and
- whether the accounting policies are appropriate to The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998 circumstances, consistently applied and adequately disclosed.

We conducted our audit in accordance with New Zealand Auditing Standards. We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to obtain reasonable assurance that the special purpose financial statements are free from material misstatements, whether caused by fraud or error. In forming our opinion we also evaluated the overall adequacy of the presentation of information in the special purpose financial statements.

Other than in our capacity as auditor, we have no other relationship with or interest in The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998.

Unqualified opinion
We have obtained all the information and explanations we have required.

In our opinion:
- proper accounting records have been kept by The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998 as far as appears from our examination of those records; and
- the financial report on pages 3 to 6 and the notes on page 7 comply with generally accepted accounting practice

in New Zealand and fairly reflects the financial position of The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998 and the results of its operations for the year ended 31st May 2011.

Our audit was completed on the 10th January 2012 and our Unqualified opinion was expressed as at that date.

Auditors: RHB Chartered Accountants Limited
Address: 525 Cameron Road, Tauranga

The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998
Statement of Financial Performance
As at 31st May 2011

	Note	*2011* $	*2010* $
INCOME			
Penalty on Levy		17,191	26,365
PMS Bio Security Levy		282,455	257,552
Interest Received		3,664	1,636
AFB Recognition Course Income		-	564
		303,310	286,117
Levies - Charged Next Year to 31 May	1(b)	338,934	301,260
Less Income in Advance		(338,934)	(301,260)
Total Income		303,310	286,117
LESS EXPENSES			
Accounting & Reporting		6,185	6,026
Administration Fees		5,006	5,171
Aerial Surveillance		4,225	6,217
ADR Admin		9,061	6,897
ADR (AsureQuality)		32,935	39,014
AFB Recognition Courses		20,734	1,451
AFB Counselling (AsureQuality)		7,182	6,000
AFB Counselling & Audit Admin		9,977	11,984
AFB Audit Inspec (AsureQuality)		17,113	22,287
AFB Hive Inspection		40,638	18,264
AP2 Recruitment & Training		3,297	3,435
Apiary database upgrade		3,009	10,435
Audit Fees		4,245	4,654
Bad Debts written off		2,942	41,067
Bank Fees		118	88
Beekeeper Communication		2,770	4,349
Beekeeper Education		1,790	3,400
Biosecurity NZ		3,577	-
Chargeable Surveillance		2,157	-
COI Admin		6,805	3,282
COI (AsureQuality)		12,709	13,677
COI Default Inspections		4,874	3,262
Compliance Costs		1,495	945
Conference Attendance		1,617	577
Debt Collection Expenses		6,112	-
DECA (AsureQuality)		9,687	15,086
DECA Scheme Admin		2,261	2,270
EFB Strategy Development		1,590	3,472
Mgt Agency AsureQuality Audit		4,068	-
Plant & Food Research		1,908	15,618
Suspect substance test		510	-
Insurance		945	773
Legal Expenses		3,504	3,558
Magazine Expenditure		1,718	7,883
Management Agency Appointments		898	0
Manager Regional Visits		8,384	5,311
Management Agency Meeting Exps		5,847	5,226
Postage Printing & Stationery		14,634	10,010
Reporting Government		2,540	1,439
Telephone		4,966	4,722
Travel and Accommodation		2,344	7,712
Website		1,603	959
Total Expenses		278,071	296,520
NET SURPLUS/(DEFICIT)		25,239	(10,403)

NOTE: This statement is to be read in conjunction with the Notes to the Financial Statements.

The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998
Statement of Movements in Equity
As at 31st May 2011

	Note	2011 $	2010 $
EQUITY AT START OF PERIOD		(55,699)	(45,296)
SURPLUS & REVALUATIONS			
Net Surplus (Deficit) After Tax		25,239	(10,403)
Total Recognised Revenues & Expenses		25,239	(10,403)
OTHER MOVEMENTS		-	-
EQUITY AT END OF PERIOD		(30,459)	(55,699)

The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998
Statement of Financial Position
As at 31st May 2011

	Note	2011 $	2010 $
CURRENT ASSETS			
Cash at Bank		194,932	202,304
Term Deposits		50,000	0
Accounts Receivable	1(b)	127,177	94,530
Total Current Assets		372,109	296,834
TOTAL ASSETS		372,109	296,834
CURRENT LIABILITIES			
GST Payable	1(c)	27,866	16,193
Accounts Payable		35,768	35,079
Income in Advance		338,934	301,260
Total Current Liabilities		402,568	352,532
TOTAL LIABILITIES		402,568	352,532
NET ASSETS		(30,349)	(55,699)
Represented by;			
EQUITY			
Funds Settled		(52,064)	(52,064)
Retained Earnings		(21,605)	(3,634)
TOTAL EQUITY		(30,459)	(55,699)

Treasurer _____ Chairperson _____

Date: 22/12/2012 Date: 1/1/2012

NOTE: This statement is to be read in conjunction with the Notes to the Financial Statements.

The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998
Notes to the Financial Statements For the Year Ended 31st May 2011

1 REPORTING BASIS AND NATURE OF BUSINESS

The National Beekeepers Association is a non-profit organisation that acts for and facilitates on industry matters for the benefit of its members.
Further to this it has been appointed as the Management Agency for the AFB NPMS. The duties relating to this appointment are set out in the Blosecurity (National American Foulbrood Pest Management Strategy) Order 1998. Levies used to pay for the running of the AFB NPMS are collected through the Biosecurity (American Foulbrood - Apiary & Beekeeper Levy) Order 2003. Pursuant to the Biosecurity Act 1993 the Management Agency must provide transparent financial records with respect to the management of the AFB NPMS Levy Order and this is what is reported in these statements.

The Management Agency; Biosecurity National American Foulbrood Management Strategy is a non-profit organisation.

The accounting principles recognised as appropriate for the measurement and reporting of earnings and financial position on an historical cost basis have been used, with the exception of certain items for which specific accounting policies have been identified.

a. Changes in Accounting Policies

There have been no changes in accounting policies. All policies have been applied on bases consistent with those used in previous years.

b. Receivables

Receivables are stated at their estimated realisable value. Bad debts are written off in the year in which they are identified.
Member levies for the year ended 31 May 2012 have been charged prior to 31 May 2011.
The amounts unpaid at 31 May 2011 are included in the Accounts Receivable balance. An adjustment for levies charged in advance is shown in the Statement of Financial Performance.

c. Goods & Services Tax

These financial statements have been prepared on a GST exclusive basis with the exception of Accounts Receivable and Accounts Payable which are shown inclusive of GST.

2 AUDIT

These financial statements have been subject to audit, please refer to Independent Auditor's Report.

3 CHANGES IN THE COMPARATIVE YEAR'S FIGURES

The analysis of last year's comparative expenses figures has been amended to match the analysis being used for the current year.

4 CONTINGENT LIABILITIES

At balance date there are no known contingent liabilities (2010:$0).

5 SECURITIES AND GUARANTEES

There was no secured overdraft as at balance date nor was any facility arranged. The Management Agency Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998 has not granted any securities or guarantees in respect of liabilities payable by any other party whatsoever.

CLUB CONTACTS AND BEEKEEPING SPECIALTY GROUPS

WHANGAREI BEE CLUB
Meets first Saturday each month (except January)
Time: 10.15 am, wet or fine (we are keen)

Contact: Mike Maunder, Phone: 09 437 5847
Arthur Tucker, Phone: 09 436 1631
Kevin & Melissa Wallace
Phone: 09 423 8642 (Wellsford)
Email: whangareibeeclub@xtra.co.nz

AUCKLAND BEEKEEPERS CLUB INC
Meets second Saturday monthly at Unitec, Pt Chevalier, Auckland.

Contact: Kim Kneijber, President
Phone: 09 418 1302
Email: kimk_bees@hotmail.com

NB: All correspondence to be directed to
PO Box 44427
Pt Chevalier 124
Auckland

Sue Beguely, Secretary
(09) 835 4205
Email: sue@triplecoilscript.co.nz

Website: www.aucklandbeekeepersclub.org.nz

FRANKLIN BEEKEEPERS CLUB
Meets second Sunday of each month at 10.00 am for a cuppa and discussion.
10.30 am open hives.

Contact: The Secretary
PO Box 1082
Pukekohe Auckland 2340
Email: franklinbeekeepers@gmail.com
Website: https://sites.google.com/site/franklin-beekeepersclub/Home

WAIKATO DOMESTIC BEEKEEPERS
Meets every third Thursday (except January) at 7.30 pm *For prospective members: please contact the Secretary for venue meeting place.*
NB: We hold the Sept and March meetings at the club's hives.
Contact: Peter Gray, President
Phone: 07 855 0290 Email: graypj@xtra.co.nz
Maryanne Partridge, Secretary
Phone: 07 825 2691 Email: partridge4@xtra.co.nz

HAWKE'S BAY BRANCH
Meets at 7.30 pm, Arataki, Havelock North for workshops or meetings as advised to the members

Contact: Mary-Anne Thomason, Branch Secretary
Phone: 06 855 8038
Email: hbnba.secretary@xtra.co.nz

John Berry, Branch President
Phone: 06 877 6205

TARANAKI BEEKEEPING CLUB
Contact: Stephen Black
685 Uruti Road RD 48, Urenui 4378
Phone: 06 752 6860
Email: beeclub@beesrus.co.nz

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

Contact: Neil Farrer, Secretary/Treasurer
Phone 06 343 6248

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

Contact: Paul Jenkin, Chairman
Phone: 06 376 8543 (after hours)
Email: paul@manawatubeeclub.org.nz
Leon Sullivan, Secretary & Media Liaison (Acting)
Email: secretary@manawatubeeclub.org.nz
(NB: Preferred address for email correspondence)
Mobile: 021 348 201
Phone: 06 364 3631
Mailing address: PO Box 4103, Manawatu Mail Centre, Palmerston North 4442

WAIRARAPA HOBBYIST BEEKEEPERS CLUB
Meets the second Sunday of the month except January, Norfolk Road, Masterton, 1.30 pm.

Convenor: Gerald Atkinson
06 377 0741 or 027 448 1518

WELLINGTON BEEKEEPERS ASSOCIATION
Meets first Wednesday of the month (except January) at 7.30 pm in the Johnsonville Community Centre, Main Hall, Ground Floor, Moorefield Road, Johnsonville. All welcome.

Contact: Richard Braczek, Chairman
5 Tyndall St., Waiwhetu, Lower Hutt 5010
Email: ibraczek@paradise.net.nz

John Burnet, Treasurer
21 Kiwi Cres, Tawa, Wellington 5028
Phone: 04 232 7863
Email: johnburnet@xtra.co.nz
Website: www.beehive.org.nz

NELSON BEEKEEPING CLUB
Meets first Tuesday of every month, 7pm
Waimea Lounge, Richmond Park Showgrounds
Lower Queen Street, Richmond
Contact: Scott Williamson, President
Ph: 03 544 9737 / 021 172 4181
Email: tasmanbees@gmail.com

MARLBOROUGH BEEKEEPERS
Contact: James Jenkins, President
159a Budge St., Blenheim
Phone: 03 577 5433
Mark Biddington, Secretary
8 Belvue Crescent
Witherlea, Blenheim 7201
Phone: 03 578 9746
Email: amandab@xnet.co.nz

SOUTH CANTERBURY REGION

Contact: Peter Lyttle
Phone: 03 693 9189

CHRISTCHURCH HOBBYIST CLUB
Meets on the first Saturday of each month, August to May, except January for which it is the third Saturday. The site is at 681 Cashmere Road, commencing at 1.30 pm

Contact: Helen English, Secretary
Email: chch.beekeepers@gmail.com
Website: http://www.chchbeekeepers.org.nz

NORTH CANTERBURY BEEKEEPERS CLUB
Meets the second Monday of April, June, August and October in Rangiora.

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4/76 Tennyson St., Sydenham, Christchurch 8023
Phone/fax: 03 337 3587
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Jo Boyd
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John Rawcliffe, General Manager
St Heliers, Auckland
Phone: 09 575 3127
Cellphone: 027 441 8508
Email: rawcliffe@actrix.co.nz

NZ COMB PRODUCERS ASSOCIATION

Contact: John Wright
Phone: 09 236 0628

DUNEDIN BEEKEEPERS CLUB
Meets on the first Saturday in the month September–April, (except January) at 1.30 pm. The venue varies so check phone or email contact below.

Contact: Margaret Storer, Secretary
Phone: 03 415 7256
Email: flour-mill@xtra.co.nz
Website: http://dunedinbeekeepersclub.org

NZ HONEY BEE POLLINATION ASSOCIATION

Contact: Russell Berry
Phone: 07 366 6111

NZ HONEY PACKERS AND EXPORTERS ASSOCIATION INC
Contact: Allen McCaw
Phone: 03 417 7198
Email: amccaw@clear.net.nz
or
Mary-Anne Thomason, Phone: 06 855 8038

NZ QUEEN PRODUCERS ASSOCIATION

Contact: Russell Berry
Phone: 07 366 6111

BEE PRODUCTS STANDARDS COUNCIL

Contact: Dr Jim Edwards, Chairman
Phone: 06 362 6301

Is your group or Branch missing from here? Or have your details changed? Please contact secretary@nba.org.nz
Please also send any changes or additions to: editor@nba.org.nz

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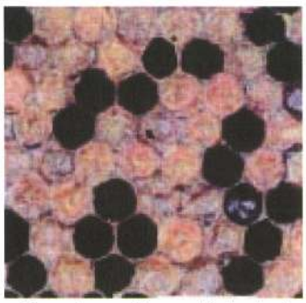
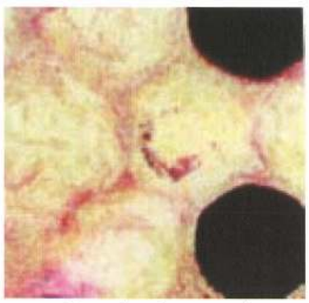
If your details have changed, please email editor@nba.org.nz and secretary@nba.org.nz so that we can update your details in the journal and the NBA website.

AFB RECOGNITION & COMPETENCY TEST PHOTOS

Unfinished cappings of healthy brood (yellowed)

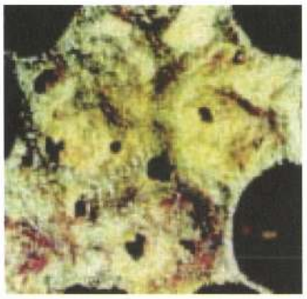


Cappings of brood infected with AFB

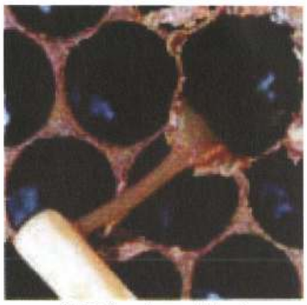


Bee chewing apart prior to emerging

AFB diseased larvae



Holes in cappings of brood infected with AFB



AFB "ropiness" test

PMS larva with varroa

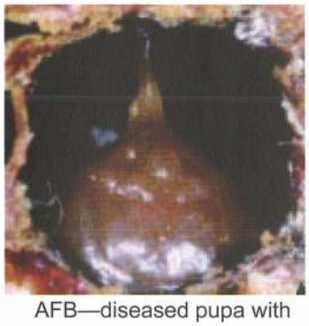
AFB—older, darker, diseased pupa

Removing PMS larva

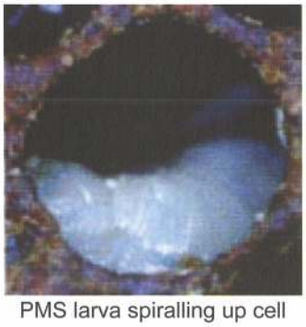
Chalkbrood—white mummy

Healthy prepupa

Sacbrood—coffee-coloured larva



AFB—diseased pupa with tongue



PMS larva spiralling up cell

Sacbrood—swollen larva

Photos taken by Dr Mark Goodwin for the AFB NPMS. First printed in 1994.