October 2013, Volume 21 No. 9

The NEW ZEALAND BeeKeeper

Playing our part

Celebrating 100 Years SINCE 1913 NATIONAL BEEKEEPERS ASSOCIATION

- Focus on AFB
- Bee Aware Month

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Front cover: Wanganui Beekeepers' Club member Gerard Wills at the club's stand at the Saturday market. Gerald designed a photo caption competition for primary students as part of Bee Aware Month activities. The Mackintosh brothers were asked to select winning entries from the box to receive a pot of honey as a prize. Full story on page 19.

We all have a role to play

By Ricki Leahy, NBA President

Crikey, it doesn't take long for the month to fly by when we are busy with our bees. And isn't it great when you cage those first overwintered queens from your mating nucs?

We've been opening up our hives and so far they're looking really good. Sam and the boys are reporting lots of healthy brood and young bees, so it's certainly a great start to the season with the potential to do heaps with all that bee power. The good thing is I'm hearing the same from beekeepers all over the place after what has been a remarkably mild winter. But remember to keep an eye on those stores, as there is nothing worse than finding a lovely strong hive starved out.

While talking about bees, I feel I should be mentioning the wee bit of grief happening overseas with some of our New Zealand honeys. There was the *Hong Kong Affair* (sounds like a James Bond movie), where it was alleged that traces of sugar were found in some tests of honey. It's probably not my place to comment but I certainly have heard that some top-grade, active manuka honeys, produced with absolutely no history of sugar feeding, are failing these sugar content tests. Seems a bit fishy to me, and I'm convinced that perhaps there is something else happening. Dr Karyne Rogers of GNS Science, as we all know from articles published in previous editions of this journal, certainly thinks there is and has proven it with her 'false-positive' theories regarding apparent C4 sugars. Her bee-related research work is by no means complete, with the need to find solutions to matters such as why certain native nectars display these peculiarities.

The NBA fully appreciates Karyne's contributions to the industry. We definitely recognise the importance of her endeavours and recommend that research funding be allocated so her vital work may continue.

Can we also contribute? I believe we can. For a start, we can make sure that our beekeeping practices are up to speed, especially when it comes to feeding sugar to our hives. We should strive to produce honey that has an absolute minimum of sugars and, if possible, no trace whatsoever.

Maybe we should think through all the consequences of our practices and find better ways of doing things. We must realise that if we are to attain good value for our products, then we may need to put more effort into producing those very products. Otherwise, where's the actual value in the product? Let's also consider how our scientists may feel if, after all their good work in helping us, they discover that consistently unacceptable sugar levels continue to be found.

> "... think through all the consequences of our practices and find better ways of doing things."

But that's not all. What about the *Manuka Troubles* with accusations of, and problems with, honey being misrepresented with poor labelling? Maybe honey is simply being described as something that it isn't. I wish it were that simple. By the time you read this journal, I hope that the Bee Products Standards Council will have managed to get a long way towards reaching an agreement about the definition of manuka honey, and indeed all of our other world-class monofloral type honeys.

For all of us (and maybe especially those who are new to beekeeping), it must be understood that even making a quick dollar is all about marketing. Often that involves leveraging off the market that others have built up over a considerable time. Surely investment in marketing is all about long-term returns. We all need to be careful about what we claim any of our honeys to be so that those investments, long-term returns and indeed the good name of our New Zealand honeys are protected.

Bee Aware Month

Thanks very much to everyone who did their part to contribute to a very successful Bee Aware Month. As a result of your efforts, many more people will now appreciate the very important role of bees and the need to protect and improve their environment.

Happy beekeeping.

Jacques Thornley took this photo in August. He reports, "A lot of pollen and warm conditions in mid-Canterbury have provided a good start for them. Should be a good season. Fingers crossed."

AGMARDT helping to eradicate AFB

By Rex Baynes, AFB NPMP Manager

On 15 July 2013, the Management Agency received advice from AGMARDT (the Agricultural and Marketing Research and Development Trust) that an application for part-funding of a video production addressing AFB under their Agribusiness Innovation Grant Programme had been successful.

The $12,500 grant will assist greatly in the production of a video (DVD) for New Zealand's beekeeping industry. Thank you, AGMARDT.

The Management Agency believes we are breaking new ground as no user-friendly DVDs are currently available that demonstrate inspection techniques, differential diagnosis, sample taking, legal requirements, hive destruction and laboratory diagnosis under the Biosecurity Act 1988.

The Management Agency has entered into an agreement with Dr Mark Goodwin of Plant and Food Research. Dr Goodwin has agreed to coordinate filming by way of Plant and Food's video production unit, with assistance from Byron Taylor of AsureQuality Limited. Work is now under way on the production of a video (DVD) covering key elements in the elimination of American foulbrood.

The DVD will be in modular form as set out below.

- Introduction
- Pest Management Plan
- History of AFB control
- Legal requirements (reporting AFB, etc.)
- Description of the disease
- Differential diagnosis
- Inspecting colonies
- Means of spread
- Destroying AFB-infected hives
- Laboratory testing
- Conclusions

Once in place, we believe that this resource will improve industry awareness and highlight the importance of early intervention through identification and control of AFB, both for new beekeepers entering the industry as well as for those who have been in the industry for a longer period but have not participated in training workshops.

AGMARDT

The video can also be used as a resource. When beekeepers have a question around AFB, want to train staff or better understand the risks around spreading AFB, they will be able to go online and get an immediate answer.

Distribution and availability

The DVD will be available on the revised AFB website www.afb.org.nz. It will also be available through building the DVD into training via PowerPoint presentations in a modular format for New Zealand beekeepers.

Note: Each year AGMARDT invests around $2.7 million into developing world-class capacity and capability within the agribusiness sector.

IMPORTANT NOTICE TO CERTAIN BEEKEEPERS

If you do not hold a Disease Elimination Conformity Agreement (DECA) this notice applies to you.

You are required by law to have your hives inspected by an approved beekeeper by on or before 30 November 2013 (Saturday).

Clause 32
Biosecurity (National American Foulbrood Pest Management Strategy) Order 1998

Failure to comply will result in:

- The Management Agency arranging for your hives to be inspected by an Authorised Person Level 2 (AP2) under the Biosecurity Act 1993.
- Your details will be forwarded to MAF Biosecurity.
- The Management Agency considering undertaking a prosecution under section 154 (q) of the Biosecurity Act 1993.

Proposed AFB NPMP budget

The input of beekeepers is sought on the proposed AFB NPMP 2014/2015 Operational Budget.

The budget covers the period 1 June 2014 through 30 May 2015.

Biosecurity (American Foulbrood – Apiary and Beekeeper Levy) Order 2003. Payment of levy

Section 16: Consultation on how Levy is spent.

(1) The Management Agency must, before the start of each levy year, consult with beekeepers on how the levy money is to be spent.
(2) The Management Agency must use the following process to consult with beekeepers.
(a) it must send to every beekeeper a proposed budget for the levy year's expenditure; and
(b) it must give every beekeeper an opportunity to make submissions to it on the proposed budget; and
(c) it must send to every group or association of hobby and commercial beekeepers known to it a copy of the proposed budget.

The budget outlines how the Management Agency intends to spend levy income for the above period.

If the Budget is approved, the levy will be set at $20.00 per beekeeper and $14.00 per apiary.

Please note: the levy remains unchanged from that of the previous year.

Important: If you wish to make a submission on the proposed budget, then please do so in writing by 1 December 2013 to:

Rex Baynes, AFB NPMP Manager, PO Box 44282, Lower Hutt 5040
Email: rbaynes@ihug.co.nz

Proposed AFB NPMP Operational Budget 2014–2015

Income:	Penalty on levy	$7,000.00	
	AFB NPMP levy	$464,000.00	
	Bad debts recovered	$10,000.00	
	Interest received	$6,000.00	
	Total Income		$487,000.00
Expenditure:	Accounting and reporting	$4,000.00	
	Aerial surveillance	$4,000.00	
	ADR administration	$12,000.00	
	ADR (AsureQuality)	$43,800.00	
	AFB Recognition Courses	$11,000.00	
	AFB counselling (AsureQuality)	$8,500.00	
	AFB counselling and audit administration	$5,000.00	
	AFB audit hive inspections (AsureQuality)	$31,500.00	
	AFB hive inspection (undertaken by industry members)	$170,000.00	
	AP2 recruitment and training	$9,000.00	
	Apiary database upgrade	$6,000.00	
	Audit fees (Rodewald Hart Brown Ltd)	$5,700.00	
	Bad debts written off	$15,000.00	
	Bank fees	$50.00	
	Beekeeper communication	$1,400.00	
	Beekeeper education	$1,800.00	
	Biosecurity New Zealand	$1,500.00	
	Certificate of Inspection Administration	$9,000.00	
	Certificate of Inspection (AsureQuality)	$18,500.00	
	Compliance costs	$1,000.00	
	Conference attendance	$1,000.00	
	Debt collection expenses (Legal)	$9,000.00	
	Disease Elimination Conformity Agreement (AsureQuality)	$15,500.00	
	Disease Elimination Conformity Agreement (Administration)	$7,000.00	
	Honoraria	$6,500.00	
	Retail honey pack sampling (Plant and Food Research)	$6,500.00	
	Spore testing (Plant and Food Research)	$14,000.00	
	Suspect substance tests (Plant and Food Research)	$2,000.00	
	Insurance	$900.00	
	Legal Expenses	$2,500.00	
	NBA Journal (April and October issues: Postage)	$6,500.00	
	Management Agency appointments	$4,000.00	
	Manager regional visits	$6,500.00	
	Management Agency meeting expenses	$8,000.00	
	Postage, printing and stationery	$15,500.00	
	Reporting to Government	$1,000.00	
	Telephone	$4,500.00	
	Travel and accommodation	$5,500.00	
	Website	$5,000.00	
	Total Expenditure		$480,150.00
	Surplus		**$6,850.00**

Background to the AFB NPMP review

By the Ministry for Primary Industries

This article summarises changes made to the Biosecurity (American Foulbrood – Apiary and Beekeeper Levy) Order 2003.

This summary was prepared as a result of the 10-year review of the AFB National Pest Management Strategy, now referred to as the AFB National Pest Management Plan (AFB NPMP).

1. AFB has been managed by the beekeeping industry via a National Pest Management Plan ('the Plan') since 1998. The Plan is a programme developed to reduce the incidence of American foulbrood in managed colonies (i.e. beehives) in New Zealand. The Plan provides regulatory powers required for its effective implementation.

2. The current Plan had a duration of ten years, and was scheduled to expire in 2008. MPI initiated a review of the Plan in 2008 as it reached the end of its term. Under the review provisions of the Biosecurity Act 1993, a Plan remains in force while a review is under way. Progress on the review has been slow due to other priorities and because the existing Plan was managing the risk adequately.

3. A number of issues had been noted with the existing Plan over the ten years of its implementation, and the mandatory review presents an opportunity to amend the Plan to address these issues, to ensure that it remains fit for purpose. Most of these changes are incremental improvements rather than major modifications, and the overall approach to managing the disease remains unchanged.

4. The amended objective of the Plan is to manage AFB on a national basis so as to reduce the reported incidence of AFB by an average of 5% each year.

5. Summary of changes in the amended Plan:

Issue	Change	Explanation
Top-bar hives	Amend definition of 'moveable frame hive' to encompass all hive designs, as long as frames and combs can be removed for inspection.	This issue has emerged since the consultation period, and was not addressed in any submissions. MPI considers the proposed changes clarify the status quo, rather than change the status of top-bar hives.
Objective	Reduce target for annual disease incidence reduction from 10% annually to 5% annually.	The previous objective was overly ambitious, and has not proven to be achievable. There was no consensus among submitters on a revised objective.
Principal measures	Include in the order in council a short 'principal measures' section outlining the responsibilities and obligations of beekeepers and the management agency.	Many submitters expressed frustration with the generally poor understanding of the Plan in the bee industry, while some submissions displayed fundamental misunderstandings of how the Plan operates.
Powers	Add power to declare controlled areas under section 131 of Biosecurity Act 1993.	Three out of four submitters in the second submission round supported this change. MPI does not consider this is a significant change, as the Plan already has section 130 powers to declare restricted places.
Risk hives	Simplify notification process needed before risk hives are destroyed.	The management agency and other submitters strongly criticised the lengthy process currently required to destroy abandoned hives that pose a disease risk.
DECA	Require that the management agency can only enter into Disease Elimination Conformity Agreements with beekeepers who have completed a course in AFB recognition.	The management agency has already instituted this change in its operational plan, in response to concerns that DECA holders were inadequately managing AFB.
Reviews	Amend the requirement for the management agency to review certificate of inspection exemptions, to bring it into line with available resources.	MPI concluded the current requirements that the management agency review all DECAs annually is impractical, and this was supported in submissions.
Audits	Provide more flexibility for the management agency to target inspections and audits.	The existing Plan requires audits to be randomly targeted, preventing the management agency from focusing resources on problem areas.
Reporting	Require authorised persons to report AFB cases to the management agency as well as hive owner.	'Authorised persons' are beekeepers trained and contracted by the management agency to carry out disease inspections. This clarifies their reporting obligations.

AFB Recognition Courses planned for 2013

By Rex Baynes, AFB NPMP 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.

Please note that at the time of going to print certain arrangements still needed to be confirmed on some courses.

Nelson/Marlborough: 12 October 2013 (Saturday)

Venue: NMIT
Richmond Campus, Queens St.
Time: 10.00 am to 2.00 pm
Contact: Nigel Costley
Phone (03) 548 3101 or Email:
costleymarr@xtra.co.nz
Note: Limited to 20 participants. Bring lunch. Tea and coffee provided.

Manawatu Bee Club: 19 October 2013 (Saturday)

Venue: Manawatu Bee Club
Palmerston North Recycling Centre, Maxwell Line.
Time; 9.30 am
Contacts: Andrew Beach: Email:
andrewbeach@hotmail.com or
Phone (04) 904 1634;
Frances Beech: Email:
francesbeech@compassnet.co.nz
or Phone (06) 367 2617

Cromwell: 19 October 2013 (Saturday)

Venue: Presbyterian Church
10 Elspeth Street, Cromwell
Time: 9.30 am
Contact: David Woodward
Mobile: (027) 418 2385
or Email:
davidw@agribusiness.ac.nz
Cost: $60 for course and test. $30 for course only

Invercargill: 2 November 2013 (Saturday)

Venue: Boardroom, Venture Southland
143 Spey Road
Invercargill
Time: 9.00 am
Contact: David Woodward
Mobile: (027) 418 2385
or Email:
davidw@agribusiness.ac.nz

Timaru: 9 November 2013 (Saturday)

Venue: Agribusiness Training Ltd
Time: 9.00 am
Contact: Phil Sutton
Phone: (03) 686 1513 or
Mobile: (027) 491 7243
Cost: $80 course and test. Tea and coffee provided.

Kerikeri 16 November 2013 (Saturday)

Venue: NorthTec
Bay of Islands Campus
Corner of Kerikeri and Hone Heke Roads
Kerikeri
Time: 9.00 am to 3.00 pm
Contact: Dan Lambert
Mobile: (027) 352 9295,
Phone (09) 407 8226 or Email
beekeeper266@hotmail.com
Bring your bee suit. Tea and coffee provided; BYO lunch. Course limited to 30.

Dunedin: 8 December 2013 (Sunday)

Venue: Momona Hall
Corner of Centre and Nichols Roads, Momona
Contact: Brice Horner
Agribusiness Training Ltd.
Phone (0508) 247 428 extn. 1

Important information

The course information highlighted above is what is planned to date and at time of going to print. 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 book 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) 471 6254
  Email: secretary@nba.org.nz
  Cost: $37.50 (includes GST and Postage)

AFB NPMP report, 1 July 2012–30 June 2013

By Rex Baynes, AFB NPMP Manager

The following report was presented on 20 June 2013 to the Annual General Meeting of the National Beekeepers' Association (Inc.) of New Zealand at its annual conference in Ashburton.

Introduction and background

New Zealand has had legislation to control AFB since 1906. The most recent change in that legislation occurred in 1998, when the Biosecurity (American Foulbrood National Pest Management Strategy) Order was passed into law. The Order established an American Foulbrood Pest Management Strategy (AFB NPMS) under the Biosecurity Act 1993.

Note: on 4 October 2012 the Biosecurity Law Reform Bill came into effect, with the various amendments it introduced to the Biosecurity Act now being law. One change is that pest management strategies are now pest management plans.

The Biosecurity Act 1993 allows New Zealand agricultural industries affected by a pest or disease to determine their own goals and strategy for its control, and to use legal powers to ensure the plan is carried out. In the case of AFB, the National Beekeepers' Association (Inc.) being the pre-eminent organisation representing the beekeeping industry, developed the AFB NPMS (now the AFB NPMP), and went through the process of having the plan approved by government.

The Management Agency for the AFB NPMP is the NBA. The NBA has a statutory responsibility to implement the AFB NPMP, which comprises a range of regulatory and educational programmes. The plan is funded using income generated from a mandatory levy on beekeepers and apiaries through the Biosecurity (American Foulbrood – Apiary and Beekeeper Levy) Order 2003.

The Management Agency

The Management Agency for the reporting period consisted of the following:

Mr Frans Laas (Chairman)	Otago
Mr Neil Mossop	Bay of Plenty
Mr John Hartnell	Christchurch
Mr Stephen Black	North Taranaki
Mr Chris Shaw	Te Anau

Total reported American foulbrood

There has been an increase of about 28,000 hives in the last 12 months, with an annual reported AFB disease rate sitting at 0.25% of hives and 2.10% of apiaries.

Beekeeper, apiary and hive numbers

[Editor's note: Rex Baynes presented a schedule to the AGM detailing beekeeper, apiary and hive statistics by apiary district as at 13 June 2013. This table was updated in August 2013 and is presented at the bottom of this page. The table has been abridged due to journal formatting considerations.]

As with the last few years, the industry has continued to grow over the reporting period. The bulk of the beekeeper growth is in the hobbyist sector (those beekeepers owning five hives or fewer). The increase in the hobbyist sector seems to be driven by a 'back to basics' attitude that is gaining favour, particularly across city dwellers.

Disease reports

Between 1 June 2012 and 31 May 2013, 1128 cases of AFB were found by beekeepers and/or AsureQuality staff in 582 apiaries. This is an average disease rate of 0.25% of hives.

Disease Elimination Conformity Agreements (DECA)

As at 10 June 2013, 59% of beekeepers held a DECA.

Since September 2008 beekeepers have been required to sit and pass the AFB competency exam prior to applying for a DECA.

Certificate of Inspection (COI)

As at May 2013, 72.46% of beekeepers who hold a Certificate of Inspection; in other words, non-DECA holders had their hives inspected.

From the following table it is noted the Management Agency has made significant inroads in the last four years with respect to compliance, despite large increases in beekeeper, apiary and hive numbers.

Annual Disease Returns (ADR)

Clause 27 of the Order in Council requires all beekeepers to provide the Management Agency with an Annual Disease Return (ADR) updating their hive information. This information provides the basis for New Zealand's statistics on beekeeper and hive numbers and AFB incidence.

	2007	2008	2009 (June)	2010 (June)	2011 (June)	2012 (June)	2013 (August)
Registered Beekeepers	2,602	2,694	2,663	2,957	3,265	3,802	4,242
Number of Apiaries	19,228	18,954	21,593	22,440	23,356	25,309	27,475
Number of Beehives	313,399	343,155	365,709	376,672	391,540	425,498	459,129

Year	AFB Cases (Reported)	Number of Apiaries	Percentage
2003–2004	870	422	0.30%
2004–2005	778	421	0.26%
2005–2006	952	482	0.32%
2006–2007	952	540	0.30%
2007–2008	980	552	0.27%
2008–2009	1117	557	0.32%
2009–2010	515	348	0.27%
2010–2011	1093	579	0.28%
2011–2012	762	499	0.18%
2012–2013	1,128	582	0.25% Hives 2.10% Apiaries

The Management Agency is delighted to report that overall compliance rates remain high; however, these results are only achieved by exhaustive follow-up.

For the year ended 31 December 2012, ADR compliance stood at 93.4%.

AFB Recognition course training

Application for funding to MPI Sustainable Science Fund and AGMARDT

The Management Agency made an application for funding to MPI to assist in the development of a video presentation covering all aspects of AFB. The application was subsequently declined.

An application was then made to AGMARDT, resulting in an invitation to put a more detailed proposal to the AGMARDT board, which in itself is encouraging. Work is currently under way in this regard. The Management Agency has already given approval for work to commence. As previously reported, this will be done in partnership with Dr Mark Goodwin and his team, the latter making his organisation's production unit available at a greatly reduced cost than going public. Mark is strongly in support of this initiative.

The DVD will cover differential diagnosis of American foulbrood from other endemic diseases, how to differentiate these diseases from the more serious AFB, methods of identification, taking samples for laboratory analysis, hive destruction and hive husbandry to control future spread. The DVD will also cover sterilisation of equipment and laboratory identification as well as legal obligations. The Executive will note that technology transfer to industry will still be through the currently run AFB Recognition Courses delivered throughout the country; the DVD will be an additional tool.

Upon completion a DVD will be produced in required quantities to be handed to new entrant beekeepers, AFB recognition course attendees as well as the industry generally on an as-required basis.

[Editor's note: see page 7 for an update about the DVD.]

Review update

A decision has been taken by the Management Agency to review the way in which AFB Disease Recognition training and the associated examination is provided to the beekeeping community. This came about as a result of certain beekeepers expressing concern as to the availability, timing, method of delivery and the interrelationship between this training and the negotiation of a Disease Elimination Conformity Agreement.

Terms of Reference have been prepared and agreed to by the Management Agency.

The Review Team consisting of:

- David Woodward — Apiculture Technical Adviser and AFB trainer
- Brice Horner — Agribusiness and AFB trainer
- Paul Badger — AFB trainer
- Rex Baynes — AFB NPMP Manager
- Byron Taylor — AsureQuality (replaced Dr Chris Shaw)

has already met (11 May 2013) as a committee and has prepared numerous recommendations and actions that are currently being worked on by individuals and subgroups as appropriate.

Website upgrade

Running alongside the AFB Recognition Course training review and development of a DVD is the complete upgrade of the AFB website.

The intention is for the site to be a 'one-stop shop' for matters relating to AFB. It will contain the DVD both in modular (individual topic) format.

Dedicated AFB inspectors

The Management Agency, given its responsible financial management over the last five years, is in a position to meet commitments made to beekeepers to allocate greater funding to AFB inspection work. A recent initiative that is proving popular is the placement of AFB Inspectors throughout the country retained to carry out AFB inspections at my direction or that of an AsureQuallity staff member. The expectation is for inspectors to check during 'lifting lid season' at least two to three apiaries per week and to respond to serious concerns within a 24-hour period, as well as giving advice as appropriate.

Continued on page 15

Year	Beekeepers	Apiaries	Hives	Compliance Rate
2004	845	1650	14776	----
2005	741	1476	14916	14%
2006	577	1188	11465	18%
2007	534	1187	12027	22%
2008	537	1092	11062	30%
2009	1090	2559	32081	29%
2010 (March)	1298	2400	23186	64%
2011 (June)	1286	2353	14205	76%
2012 (June)	1561	2362	16773	65%
2013 (May)	1771	2772	21017	72%

Continued from page 13

In addition, Certificate of Inspection (COI) default inspections will also form part of the inspectors' brief.

To date the Management Agency has representatives based out of Whangarei, Opotiki, Napier, Wanganui, Paraparaumu and Timaru. Work is under way to have representation on the West Coast, Otago, Southland, Nelson and Christchurch plus North Canterbury.

Court action to recover outstanding debt

It is with disappointment that we report that it was necessary during this period to initiate court action to recover significant debt. During the reporting period the Management Agency has initiated 16 court actions.

Acknowledgement

As the AFB NPMP Manager, I am fortunate to have supporting me such a dedicated and able group of people who make up the Management Agency.

My appreciation to you all for your continued guidance, direction and advice.

Conclusion

I believe the plan is meeting both its objectives and targets; however, the Management Agency cannot do it alone—it requires total support from the industry.

The international code for marking queens. A quick way to remember the code. The numbers in column 3 refer to years:

When	White	1/6
You	Yellow	2/7
Requeen	Red	3/8
Get the	Green	4/9
Best	Blue	5/0

As a result of recent amendments to the Biosecurity Act, the American Foulbrood Pest Management Strategy is now referred to as American Foulbrood Pest Management Plan.

Controlling varroa

By Rae Butler

Setting up a research laboratory and a selective breeding programme within a commercial enterprise is no mean feat.

However, Rainbow Honey (part of Nelson Honey group) has taken up the challenge and is achieving promising initial results in its first year. Project leader Rae Butler says the set-up phase has been hard work.

"We have put a lot of effort and financial resources into the project, along with a lot of hope that it would work. It's great that we are now starting to see the rewards for our efforts."

Rainbow Honey has been working with Cawthron Institute and Plant and Food Research to establish a database for collecting data on the presence of varroa-sensitive hygiene (VSH) trait, along with other desirable characteristics. The aim is to selectively breed using instrumental insemination in order to produce bees with the VSH trait, while maintaining genetic diversity and other traits desirable for the industry.

The programme started with three hives from Plant and Food Research that had an average of 30 percent presence of the VSH trait. Results so far indicate that we have gained 10 percent in the VSH trait, with an average of 40 percent in the next generation. The top six percent of these bees will be deployed back into the breeding programme where heritability and correlation of traits can be mapped.

The programme is supported by AGMARDT and the Honey Trust. Go to http://www.nelsonhoney.com/about-nelson-honey-and-marketing-ltd/queen-breeding-programme/ for more information.

Queen bee longevity reduced

By Frank Lindsay, NBA Life Member

Queen bees in America are lasting only six months on average.

Recent USDA research by Jeff Pettis's group at the Agricultural Research Service (ARS) has revealed that the queens are mated but in some, 50 percent of the sperm in the spermatheca is non-viable.

Other queens, he said, had 'plumbing problems'. The queens have mated well with viable sperm but the sperm is not being deposited on the eggs as they pass through the vagina. The bees detect a problem with the queen and instigate supersedure.

Further research is required to determine whether it's a queen or a drone problem and what is causing it. Jeff Pettis recommended that before beekeepers kill a non-performing queen, they remove the spermatheca, roll back its covering and check its colour. If it's clear, it means it's not been mated; if creamy yellow it's been mated.

Reference

Summary of a presentation by Jeff Pettis USDA-ARS Research Leader, entitled Factors in Failing Queen Health. Presented to the Eastern Apicultural Society (EAS) conference 2013, West Chester, PA, 5–9 August 2013.

Bee health: a guide

By Neil Farrer, NBA Life Member

Have you ever wondered how some firms manage to keep their bees healthy and get a good crop each year?

Here are some management tips provided by a large commercial beekeeping firm.

Start with the basics: woodware

All boxes, whether for brood or honey, should be in excellent order. There should be no cracks or gaps that can leak bees at awkward moments. It is beneficial for bee health to live in an environment without extra holes letting in cold air or other pests. So repair or burn old boxes.

What about bases? Are they sound, with runners in good condition? Have you thought about keeping your hives on pallets? That extra few centimetres off the ground lifts the bees above the cold damp air around the grass and the base does not rot as readily.

Look at the crown board and roof. Do they fit properly? There should be no extra entrances that will let wasps in to rob and kill.

It does not matter whether you use internal frame feeders or top feeders, but they need to be kept clean as dead bees can create disease problems. Plastic feeders should either be put through a steam chest or a hot water blaster to remove old wax and propolis. Internal frame feeders will need a new supply of fern or gutter guard for the bees to be able to walk around and feed without drowning. Old wooden feeders are either burnt or blasted with hot water to remove old wax and propolis.

As a matter of principle, think of your beehives as you would your home. Keep them free of draughts. Burn old rotten woodware. Look for moisture and mould build up, especially in winter. A top feeder or a small opening to allow moisture to escape assists the bees to maintain a dry healthy home.

> "You … are the guardian of the bees."

Frames

Many commercial firms use plastic frames but wooden ones also need attention. Points to consider:

Wooden frames: are they old? Check the condition of the wood: if cracked or chewed by mice or partially rotten, use them for firewood. If the wax cells are black old wax filled with many cycles of brood, etc., remove and either burn or melt out. If the woodwork is good enough for reuse, rewire and put on new foundation.

Plastic frames: as for wooden frames, over time the wax cells will turn to hard, old black wax and 'gunk'. Plastic frames can be scraped back to the base layer of plastic or put through a steam chest or a hot water blaster to get rid of all the old material. Then the cleaned plastic frame can be rewaxed and put back into circulation.

As a general policy, consider one new box with eight to 10 new frames per hive each year.

Bee health

Now that you have thought about the frames and woodware, think further about bee health.

Nutrition: do your bees have enough pollen and honey stores? If not, then feed. Pollen frames can be swapped between hives but the preferred method is to feed a pollen substitute patty. Hobbyists can, and do, give frames of honey back to the bees but in most commercial businesses it is better and cheaper to feed sugar syrup. Also, by supplying pollen patties and sugar syrup, you lessen chances of inadvertently introducing disease into the hive through pollen frames and honey that could contain spores.

You, the beekeeper, are the guardian of the bees. Every time you are at the apiary, check all hives. There's nothing like lifting lids to see what is happening inside. If there are too many bees, either make a split or add another box. If there are not enough bees, ask why. Is it varroa? If so, treat. Is it a failing queen? If yes, the remedy is to put in either a new queen or queen cell.

Finally, think about your apiary site. Bees prefer a warm, sunny location, preferably sheltered from prevailing cold winds from the south. Also, either fence the apiary to keep out stock or strap all hives. Many hives are lost through being knocked over by cattle, especially in the colder months.

Deadlines for articles and advertising

Reservations for advertising and articles are due on the 6th of the month prior to publication. Material received after the 12th of the month prior to publication may not be published.

In order to be fair to all advertisers who occasionally offer deals for a limited time period in their ads, there will be no exception to these rules.

Contacts for advertising, articles and membership/subscription enquiries are given on page 3.

BAM an outstanding success for the NBA

By Daniel Paul, Chief Executive Officer

Phew! Bee Aware Month is over and we can catch our breath.

It's been an amazing ride and has done tremendous things to raise awareness of our Kiwi bees. Thank you to everyone who contributed.

Highlights have been:

- dozens and dozens of media interviews, resulting in a truly amazing amount of national coverage in the daily mainstream media (and on two occasions in trans-Tasman media)
- website hits nearly doubling for the month of August
- over 300 Facebook likes: a not inconsiderable achievement seeing as how we started from scratch. This is something we will continue to build upon
- some of our Facebook posts had over 2,000 viewers!
- the distribution of over 110,000 packets of bee-friendly wildflower seeds
- the creation of a bee-friendly community garden unveiled in Auckland
- the donation of $20,000 to the NBA
- the donation of $3,000 of prizes to the winners of our children's video competition (which also attracted TV coverage)
- The Warehouse and Placemakers have moved to stop stocking the controversial neonicotinoid pesticides with the support of Green MP Steffan Browning
- a letter from Auckland Mayor, Len Brown, acknowledging the plight bees and supporting the hives on Auckland Town Hall. You can view this on our Facebook page https://www.facebook.com/pages/Bee-Aware-Month/155550234605563.

We couldn't have done it without our benefit partners and the support of NBA members, branches, beekeeping clubs, business, individuals and the New Zealand communities around the country that got on board, ran their own initiatives, supported Bee Aware Month and donated to our research projects.

Mossop's Honey and Annabel Langbein sponsored Facebook prizes, while Little and Loved, De Winkel, Annabel Langbein and Ecostore and Palmers ran additional promotions over the month.

We would like to thank the schools and students that entered and passed on their bee knowledge through their videos: see winners at www.beeaware.org.nz. Many of these schools, like second-placed Limehills, are now looking at getting their hives and building and improving their school gardens with the aim of attracting bees.

So thank you to our sponsors:

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Other National Office news

Ricki Leahy, Roger Bray and Daniel Paul recently attended a Biosecurity Forum in Wellington on 5 September. It was organised by MPI and a number of primary industry representatives attended. The event provided a detailed briefing on work in progress with GIA. There is still a lot of work to be done and there will be several follow-up meetings. We will be reviewing our processes for consulting with members on the GIA.

We are gearing up for the 2014 membership drive. Obviously the NBA is only as strong as its membership base so it's critical we attract as many members as possible. That's our key focus at the moment. This is where Branches come in, so you will be hearing from them soon.

Just an update on subscription levels. It was decided by the members at the 2013 AGM that 2014 subscription rates would remain at the 2013 level. That will be done. However, the Executive was asked to provide more information on the draft proposals presented at the time.

The NBA has circulated a survey asking members for their views on 2015 membership subscriptions levels. The results of this survey will be collated and reported on and circulated for consideration. This will then be voted on at the 2014 AGM.

A 2014 membership form is included in this journal. There will be a mailout and future communication for joining the NBA for 2014.

The MPI Discussion Paper *Options for Defining Monofloral Manuka Honey* was circulated to branches earlier this month for review.

We've kept a watching brief on the industry issues that have been percolating (see the President's report for more detail).

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Wanganui Beekeepers' Club activities

By Anne Hulme, Wanganui Beekeepers' Club

Our club has had a very busy time promoting beekeeping during August and it hasn't really stopped yet.

We have had a photo caption competition for primary school children, a stand promoting 'Trees for Bees' at the Saturday market and two articles with photos in the newspaper.

First we visited some of the small country primary schools and left with them a caption competition devised by Gerard Wills, our last season's scholarship student. Each school received five coloured posters for their class notice boards with a picture of a bee visiting a flower and the question, "What is the bee saying to the flower?"

The schools were also given the colour printed entry forms with the picture and question so that the children could take them home to discuss possible captions with their families, if the teachers wished. The children had a week to get the answers in to our stand at the following Saturday market.

We received some very thoughtful answers, mostly from children aged between seven and 11. They certainly had a good grasp of the subject of bees and the work they do. It was obvious that the teachers had done some extra work with the children as well.

We had 64 captions dropped into the competition box at the club's stall in time for the midday draw. Gerard chose the best 20 answers and asked two children at the market to draw out the eight entries that were to receive pots of honey for prizes. Those eight were all first equal and later on got a certificate to say so. On the Monday, two more schools delivered their entries but sadly they had missed the deadline. The honey and first-prize certificates were delivered to the schools to be given out in assembly, as well as highly commended certificates for every child who entered, including those late entries, as well. We received many positive remarks from the schools and the children. It turned out to be a very worthwhile competition, which we can run again next year with a different photo and caption question.

Gerard Wills is holding the entries box for the Mackintosh brothers to select the winning entries, while Gaylene Reid records the names. Photo: Graham Pearson.

> "[The children] certainly had a good grasp of the subject of bees and the work they do."

The spinoff from this was the articles and photos in the local paper about the work of the NBA and our beekeepers' club, as well as one showing the two little boys drawing the winning captions out of the box. The fact that the entries had to be dropped off to our promotional stand at the Saturday morning market meant that we had more visitors to taste the honey, look at the photos and static displays, view the bee-friendly plants and watch the demonstrations. Our members were kept very busy answering questions and at times there were so many visitors that they had to go out on the footpath to talk.

At the following meeting of our beekeepers' club we had so many visitors for the first time that we had to search around for more chairs. It was just as well that some of our usual members didn't come, as we wouldn't have been able to accommodate them all.

[Editor's note: see more Bee Aware Month coverage in the 'From the colonies' column.]

Exotic disease surveillance results

By Byron Taylor, Apicultural Officer, AsureQuality Limited, Hamilton. Email: byron.taylor@asurequality.com

The honey bee exotic disease and pest surveillance programme is conducted annually by AsureQuality Limited on behalf of the Ministry for Primary Industries (MPI) for the benefit of the beekeeping industry.

This report summarises results from autumn 2013.

The ultimate goal of the programme is to provide assurances to our trading partners that our honey bee disease status is unchanged and to limit the time between introduction and discovery of any exotic pest or disease of honey bees.

Early detection of any pest or disease incursion gives MPI and industry more options for eradication or control. In order to provide the greatest chance of early detection, the Honey Bee Exotic Pest and Disease Surveillance Programme is designed to provide:

1. a surveillance programme that concentrates on geographic areas in which pests or disease are likely to be introduced. This is sometimes referred to as 'targeted surveillance'
2. an education programme aimed at improving the biosecurity knowledge of the beekeeping industry as a whole and encouraging reporting of any suspect exotic pest or disease. This is referred to as 'passive surveillance', which is a very important part of the overall surveillance system
3. sampling bees from stock provided to exporters of live bees.

Targeted surveillance

High-risk area inspection and sampling

Partnering with industry to deliver field inspection is vitally important for a successful programme. Approximately 30 Authorised Persons–level 2 (AP2s) sourced from within the industry offered their services for this year's programme. As in previous years, a number of these AP2s are experienced beekeepers who have been involved with the surveillance programme for many years, while in some areas inspectors are relatively new to the programme. AsureQuality and MPI would like to offer these individuals many thanks as they take time out from their busy autumn schedules for the good of the wider industry.

The surveillance programme requires 350 apiaries to be inspected and sampled. Hives were sampled for a range of pests and diseases of importance to the beekeeping industry. Every hive in each of the apiaries selected was required to be inspected and tested in order to maintain the sensitivity of the surveillance programme.

High-risk areas were selected as the most likely points of introduction for an exotic pest or disease and include seaports, airports, transitional facilities, large population areas, tourist areas and other sites deemed to be an elevated risk. Traditionally this has included the area around Lyttelton port; however, as was the case last year due to the earthquake damage, these surveillance sites were substituted for sites in Akaroa close to the area where cruise ships berth.

A total of 343 apiaries were inspected as part of the high-risk site surveillance against a target of 350 apiaries. As noted in previous years' reports, a significant number of the sites were visited that did not have hives at the time of the inspection. As an example, in New Plymouth, all eligible apiaries that contained hives were inspected with the total being only 67% of the target. However, this area effectively received a 100% survey, which ensured that the surveillance sensitivity remained high.

AP2 inspecting frames. Photo: Byron Taylor.

AP2s perform a thorough inspection of every hive in each selected apiary. During this inspection they look for a variety of pests and diseases. This starts as they approach the hive where they are assessing the behaviour of the bees; i.e., how aggressive they are (African or Cape honey bees), how active they are compared to other hives in the apiary (Asian honey bee) and whether there are significant numbers of dead bees in front of the hive (tracheal mite and possibly bees infected with viruses).

As AP2s open the hive, they are looking particularly for evidence of adult small hive beetles in the extremities of the hive. These beetles move very quickly and will actively seek cover when exposed. Additionally, the inspector will inspect the brood for symptoms of European foulbrood (EFB) and take samples as appropriate. It is worth noting that if the inspector discovers AFB in the hive during this inspection, the hive will be dealt with in accordance with the National American Foulbrood Pest Management Plan. Three AFB-infected hives in two apiaries were discovered this season. As these were the only hives in the two apiaries, no additional sampling was undertaken.

The AP2 will also take a sample of approximately 300 older adult bees from the honey frames. These bees will be tested for tracheal mites and possibly undesirable bee genetics if suspected. If there are significant numbers of dead bees in front of the hive, a sample of these will also be taken to test for tracheal mites.

An example of a pest under the heading of 'undesirable bee genetics' is the Asian

Honey Bee (*Apis cerana*), which has become established in the Solomon Islands and northern Queensland and more recently in the northern islands of Vanuatu. This illustrates just how mobile this pest is and reports on its impact, both on local beekeeping and on access to export markets, serve as a reminder that we must remain vigilant.

Lastly, the AP2 will insert miticide strips into the brood nest and a sticky board onto the floorboard to test for external mites (particularly the Asian mite, *Tropilaelaps clareae*). The AP2 will return the next day to extract the sticky board and strips from the hives.

All bee samples are sent to MPI's Plant Health and Environment Laboratory (PHEL) at Tamaki, Auckland, where they are tested for the range of exotic pests. Any cases of suspected exotic disease are sent to the MPI Investigation and Diagnostic and Response Laboratory in Wallaceville, Upper Hutt for diagnosis. No exotic pests or diseases of honey bees were detected during the high-risk site surveillance programme this season.

Low-risk samples

Samples from 326 low-risk apiaries that supply bees for export contributed to the programme this year. This is still slightly higher than the target of 300 apiaries but is down almost 100 apiaries from last year. The reduction is due to the fact that while export volumes were up from previous years, exporters are consolidating their supply base, essentially relying more heavily on fewer beekeeping operations. This reduction has justified the decision to retain the number of apiary samples requested from beekeepers supplying bees for export at a maximum of 25 apiaries per beekeeper. No exotic mites were detected.

Exotic disease inquiries

In addition to the scheduled surveillance programme, each year MPI and AsureQuality receive a number of calls from beekeepers reporting suspected exotic bee diseases or unusual symptoms in hives. AsureQuality works with the MPI Investigation and Diagnostic and Response Centre in Wallaceville to screen these calls and determine whether sampling is justified. Four calls were received, all of which resulted in further sampling being required. If endemic diseases appear not to be the cause of the symptoms, then samples are usually tested for a wide range of exotic pests and diseases to determine the cause. All tests were negative for exotic pests and diseases for the four cases investigated.

Industry education

Inspecting a hive. Photo: Murray Reid.

As at 30 June 2013, there were 4,279 beekeepers managing 452,018 hives on 27,106 apiaries. The number of new beekeepers in the industry has remained high, with the rate of new beekeeper registrations running close to the highest rate in recent history. Over 1,370 beekeepers (32%) have less than two years' experience in the industry, which shows the need for ongoing education. By educating the beekeeping industry in the identification of exotic pests and diseases, the chances of finding an incursion early are greatly increased. This is because vastly more hives can be inspected by an educated industry than through targeted surveillance at high-risk sites.

> "...vastly more hives can be inspected by an educated industry than through targeted surveillance..."

Three articles are submitted for publication in *The New Zealand BeeKeeper* every year. These are written by the AsureQuality Apiculture team and provide a general summary of the latest information on a particular pest or disease of importance to honey bees. Articles are peer reviewed internally within the AsureQuality Apiculture team and externally by MPI. This season, articles were written on *Apis cerana*, viruses, and differential diagnosis of exotic pests and diseases of honey bees.

Beekeepers should keep themselves informed about biosecurity issues, pests and diseases that affect apiculture and regularly inspect their hives for any suspicious signs of pests or disease. The more educated the industry is, the greater the chance that a beekeeper will report something unusual in their hives.

Apiary database

The creation of an effective surveillance programme depends on good information. The Ministry for Primary Industries funds a portion of the costs associated with keeping the information on the national apiary database current (i.e., through the Annual Disease Return). MPI uses the apiary register to design and manage the surveillance programme.

Additionally, the Exotic Disease Surveillance Programme has previously contributed to the development of APIWEB, which allows beekeepers to access and update information held on the apiary database relating to their operation. This ultimately improves the quality of information held in the database and improves the surveillance programme design. During the recent Annual Disease Return cycle, all beekeepers were provided with login details for APIWEB. Recently, AsureQuality and the AFB NPMP Management Agency have been discussing phase 2 of APIWEB development. It is hoped that this will encourage greater usage by beekeepers and ultimately reduce the number of visits to unoccupied apiaries.

Lastly, it is interesting to note a gradual change in mindset around the Apiculture Surveillance programme. In the past, I have spent some time apologising to beekeepers whose hives are regularly inspected under this programme because of their geographic location. This year I have had a number of beekeepers comment that they are happy to have their hives inspected annually to assist this programme. It is heartening to see this increasing level of support.

Thanks again to those beekeepers involved with this programme. Happy beekeeping to all and good luck for the coming season!

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Anaphylactic shock

Following are two families' experiences with anaphylactic shock, and an anaphylaxis procedure used by a commercial beekeeping firm.

Eva's story

By Frazer and Kerry Wilson

No doubt many of you heard about the 14-year-old Takaka teen who died from anaphylaxis to a bee sting this year. She was our daughter Eva.

We want to tell you Eva's story in the hope that it may encourage others with severe allergy to seek further professional help.

We have been beekeeping for 13 years. We were told very early on that beekeepers' family members are more likely to develop allergies to bee venom. Accordingly, from then on we washed all work clothing in a separate washing machine and our kids didn't travel in the bee truck.

Eva was OK the first time she was stung but was very allergic after her second sting. She vomited immediately after being stung and dozed off a few minutes later. We were referred to a Nelson paediatrician at this stage and advised to get an EpiPen®. Eva carried an EpiPen® with her from age 6. The paediatrician recommended that we wait until Eva was 16 years before considering having her desensitised as many young children grow out of their allergies. He didn't know anything about beekeeper family allergy issues.

Eva was stung for the third time at school and a teacher rapidly gave her EpiPen®.

Eva's next sting was at age 10. She collapsed within minutes of being stung and needed to be carried to the car to get to the doctor. The EpiPen® worked for her, and oxygen and time were enough to get her right.

The fifth sting at 14 years of age killed her. Within five minutes of the bee sting, she had been given two doses of adrenaline and had collapsed before getting to the car. She would have been incapable of administering her own EpiPen®. She had CPR done on her on the lawn of our medical centre and during the rescue helicopter flight to Wellington. On arriving in Wellington, she had another cardiac arrest and 24 hours later, life support was removed.

Looking back, we wonder why we were never referred to an allergy specialist. However, we don't blame anyone as rural general practices don't get much experience at this sort of thing. They saw Eva four years apart for bee stings: she was seen by different doctors each time and the EpiPen® was working for her. Her allergy had clearly escalated massively in the last four years. Her blood pressure dropped so rapidly this time that intramuscular adrenaline didn't work. Her only chance of being saved was if she had been stung outside a major hospital with the intravenous adrenaline ready to go.

We have now begun the desensitisation process with our 16-year-old daughter. The first step involves having a blood test done. On a scale of 1–6, our daughter Tullia tested as a 6 (most reactive). We had previously not rated her as too bad relative to Eva. We think Eva would have been off the scale.

Tullia has been in Wellington Hospital having 'rush' desensitisation attempted. This involves several injections of venom per day, beginning with minor doses and gradually increasing. As it turns out, she is also severely allergic and in the 1% category of over-reactive patients. 'Rush' treatment has not worked for her, so it is back to attempting one injection per week for a few months and seeing whether she can tolerate that. Then it will be a monthly maintenance injection for several years. Overall, desensitisation is a very successful process, with a 95% reduction in likelihood of anaphylaxis.

Currently only Auckland and Wellington can offer venom desensitisation. Most of us are rural beekeepers, so a great deal of travel is involved!

Our message to you is to seek further help if you have family members who have anaphylactic reactions to bee stings. Get the blood test done and push to see an allergy specialist if you are concerned.

Is it just bad luck that both our kids are so allergic? Are there other families like us out there? It has become obvious to us that there is more to this than the allergy specialists know. Please keep an open mind to this and take any possible precautions.

Can anyone point us to any actual research on the greater likelihood of venom allergies in beekeeper families?

Thank you for the support that we have received from the extended beekeeping community—cards, flowers, practical help and donations to the rescue helicopter. It is much appreciated.

Emma's story

By Deanna Corbett

Among our trials last year has been finding out—in fairly scary fashion—that our now three-year-old daughter has a serious bee sting allergy after having been stung late in 2012.

As this was her first bee sting, I have to admit it wasn't the first thing on my mind when she came inside screaming, as we had come to expect that it would be the kids' second stings that would show up any sensitivity. I guess she's had enough exposure to bee products to develop the sensitivity without a prior sting.

I was very lucky to be able to call on my neighbour, a registered nurse, for help. Emma was in serious distress and, although she will talk your right arm off any other time, she wasn't able to put into words what was going on. Emma had surgery that morning to remove a pin from a fractured elbow, and as the sting was in that hand she balled her hand in a fist and cradled the arm in such a way that initially I thought she had fallen on her elbow. It was 10 minutes before I realised a sting was involved, by which time she was starting to have some trouble breathing. →

A call to the ambulance, trip to hospital, and two hours later the hospital staff were quite happy to see the bouncy back of her and her brother.

So, a reminder of a few things around allergies, and things we've learnt so far, that may help you if you're ever in the same position.

1. It ain't necessarily the second sting that shows up a problem. Pay attention to the first sting, particularly with little kids.
2. Before there was audible wheezing and before her lips started to lose colour, my neighbour (the nurse) noted she was having trouble breathing because of an obvious "tracheal tug" and a sternal tug. The trachea is the soft dip at the base of the throat below the Adam's apple and between the collarbones. As Emma started to struggle to breathe, the trachea would visibly tug inwards with each inward breath. There was a matching tug at the base of her sternum (the point at the base of where her ribs join and top of her tummy).
3. Emma didn't stop breathing at any point and adrenaline wasn't needed, but she did become very wheezy and groggy, taking obvious effort to breathe. She was treated in the ambulance with a nebuliser delivering Ventolin—the same medication in many inhalers used by asthmatics. In the course of the 10-minute ambulance trip she went from groggy and not communicating to being able to sit up and focus on faces and nod answers to questions. Ventolin was the only treatment she received at the hospital.
4. The allergic reaction can 'bounce' or recur over the 72 hours after the event, so we had to watch her reasonably closely. A three-day course of steroids was prescribed to help her through this period.
5. Emma didn't develop hives or a rash anywhere, but did have a fair bit of facial swelling and a couple of black eyes that took about three days to settle down.
6. Liquid antihistamine was prescribed for any itching or swelling after the event. Liquid antihistamine is also recommended as an emergency treatment in the event of any sting.
7. The EpiPen® is available on prescription, but flipping expensive at $200+ each. Ideally we want to have two—not pocket change for us. As an NBA member we can get the Anapen® (same thing, different brand), at $150 delivered, and it's a two-for-one deal. The money we will save will nearly cover the cost of our Small Commercial membership fee. (Yes, that's a sales pitch: join the NBA!) *[Editor's note: the cost is two for $140, plus $10 service and delivery. Contact the NBA for an order form.]*
8. There are no set procedures or rules on where Emma's allergy will go from here. She may react faster and more strongly next time, or not at all (we're not silly enough to bank on that!). She may grow out of it over time.
9. Desensitisation therapy is available, though our GP knows nothing much about it. A friend's son who has had a full anaphylactic reaction has been having desensitisation therapy (initially organised via Starship Children's Hospital) in the form of monthly shots. While there has been improvement, apparently it is not a sure cure, and it sounds as though progress is not terribly predictable. We'll be trying to find out more about this in the coming months and evaluate whether it's an option.

It has been very heartening to hear stories from friends who grew up as children of beekeepers and who have grown out of their allergies, and those who whose children have had allergies and come through. Frankly, the business was all but on the market for a couple of days there ... but I think we'll play on for one more hand.

Please remember, even as adults and with a history of being stung without reaction, you are not immune to developing an allergic reaction. If you or anyone else has a sting and develops a reaction away from the sting site—whether a rash, swelling, stomach upset, palpitations or any new symptom—get to medical help immediately. Do not wait for a breathing issue to develop.

[Editor's note: Emma's story has been reprinted and updated with minor changes from Buzz Sheet, Newsletter of the Hawke's Bay Branch of the National Beekeepers' Association of New Zealand, November 2012.]

Postscript

Emma has had a second sting around New Year, and a milder anaphylactic reaction that we think was moderated by our getting liquid antihistamine into her within about four minutes. This was a sting to the foot resulting in wheezing within eight minutes, but by two hours the wheezing had resolved and the facial swelling that started was settling. Emma was released from hospital after two hours of observation. She developed hives the next day, after which we kept her on antihistamine for about 36 hours. The last symptoms resolved around 72 hours, after which we resumed yelling at her to wear her blimmin' shoes outside because she was, once again, completely oblivious.

Kintail Honey's procedure

By Jason Ward, Kintail Honey

Since the 1990s, Kintail Honey has stocked medication for bee allergy (including the algorithm card) within our first aid kits. The kits are carried in all bee trucks and located at all honey sheds. This was initiated across the company as a result of an incident when an employee's wife, who was with her husband, went into anaphylactic shock. She was stung in the morning with no adverse reaction; however, whilst unloading their honey truck she received a second sting that afternoon that caused her to collapse. Her life was saved by the administration of adrenaline and CPR. She was airlifted to hospital and spent several days there recovering.

We have developed a very good relationship with our local pharmacist and he has supported us by stocking our first aid kits. Education/training to all staff about anaphylaxis and the 'bee allergy' algorithm is provided by a registered nurse.

All staff complete a pre-employment health questionnaire asking about 'allergies' with specific reference to bees. This is a very useful process for our seasonal employees.

Anaphylaxis refresher training is provided to all permanent staff annually during our quieter winter months and our seasonal employees are provided with this training during their induction. Discussion about bee venom exposure to their family members from their overalls, etc., is also covered. The intent of the training is to increase staff awareness to bee allergies and the potential adverse outcome for the farmer who stops for a chat, or an orchard worker who is overeager to help move a hive or a visitor to the honey shed who swats at a bee and is stung. During the anaphylaxis training/

education, the emphasis is on seeking help immediately (calling 111: this, however, may be a challenge due to the location of some of our bee yards) as we are not experts at providing emergency care, but have an understanding of the potential severity of anaphylaxis and have access to first-line treatment.

Having pre-filled adrenaline (for example, EpiPen®) proved to be too cost prohibitive, due to the number required and adrenaline's short expiry date. However, adapting our first aid kits along with the training has proved very useful for a number of reasons. It gives all of the staff additional first aid skills and they all enjoy the practical aspect of the training, not to mention the life-saving benefits.

Following is the text of the algorithm card, which is laminated and goes into Kintail Honey's first aid kit.

BEE ALLERGY — Anaphylactic Shock

Anaphylaxis is the most severe form of allergic reaction, often affecting several parts of the body, including breathing difficulties, a sudden drop in blood pressure, or both. This is not to be confused with a LOCALISED "reaction" to being stung, which is a natural reaction causing pain, redness and swelling around the site. The emergency is only with a GENERALISED body reaction.

Is this a GENERALISED reaction but talking, breathing OK and not feeling faint/dizzy?

ASSESS
Generalised redness, welts, hives, itching on skin over the body (away from the sting area), a look of "paleness" or "person feels "funny" or nauseous.

ACTION
Give one non-sedating antihistamine (for example, loratadine) tablet (if vomited, try to repeat if it has been lost)

Is this a GENERALISED reaction <u>WITH</u>:

- *swelling of face, neck, or throat (leading to tightness in chest or throat)*
- *difficulty breathing, wheezing with breath and increased rate of breathing*
- *dizziness, confusion*
- *ashen, white, or bluish skin*
- *person complaining of nausea or vomiting*
- *person collapsed and/or unresponsive*

ACTION
Call for help – 111
If collapsed, place them in the recovery position to maintain their airway
Adrenaline – shake liquid to bottom of vial and snap off top.
Needle and syringe – attach needle to syringe by screwing it on to base, remove needle cap and draw up 0.5mls (half a ml of the 1 ml in the vial) by pulling on the plunger.

Administer the adrenaline into the upper outer part of the thigh. Administer through clothing if thigh not exposed. If no improvement after 10–15 minutes repeat the same amount. Children under 5, give 0.3mls and repeat after 10–15 minutes if no improvement. You may need to perform CPR if they become unresponsive and there is no pulse.

EVALUATE
Watch person's breathing and colour, not the level of consciousness.

For LOCALISED reaction – apply a cold compress and if painful, take paracetamol. If pain, swelling and redness persist, seek medical advice from your general practitioner or health line on 0800 611 116.

[Editor's note: this is the standard statement provided on some patient information handouts for adrenaline medications: "The following information is intended to supplement, not substitute for, the expertise and judgment of your physician, pharmacist or other health-care professional. Consult your health-care professional before using this [medicine]". The best thing beekeepers can do is to have an emergency plan. Work with your employer or local medical practitioner to develop a plan if you don't already have one. Refer also to the article 'Allergic bee sting reactions—when bee stings turn bad', in the April 2009 issue of the journal.]

Do's and don'ts of AFB control

Do

- Inspect your hives for AFB at least twice a year.
- Inspect hives before removing bees, honey or equipment.
- Inspect all brood frames.
- Shake bees off frames before inspecting them.
- Train yourself and your staff in techniques to recognise and eliminate AFB.
- **Report AFB to the Management Agency within 7 days.**
- Burn infected colonies.
- Feed pollen substitutes rather than pollen.
- Feed sugar syrup rather than frames of honey.
- Use hive and apiary quarantines.
- Only use approved sterilisation methods.
- Use a thermometer and timer when paraffin wax dipping (10 min at 160°C).
- Treat hives to clear up parasitic mite syndrome (PMS) before checking for AFB.
- Become an approved beekeeper.
- Get suspect AFB samples tested.

Don't

- Don't feed drugs for control of AFB.
- Don't scorch boxes to sterilise them.
- Don't try to control AFB by removing diseased frames.
- Don't extract honey from infected colonies.
- Don't feed bee-collected pollen to colonies.
- Don't feed extracted honey to bees.
- Don't let hives be robbed out.
- Don't shook swarm.
- Don't let stock knock over beehives.
- Don't use steam chests to sterilise infected equipment.
- Don't distribute the equipment from dead hives between other hives.
- Don't allow colonies to die of varroa or any other cause.

[Excerpted from the revised edition of *Elimination of American Foulbrood Disease without the use of Drugs—a practical manual for beekeepers*, by Dr Mark Goodwin.]

If you prefer not to cut this page from the journal, photocopy the form or download it from http://nba.org.nz/uploads/2014-NBA-Membership-form.pdf

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2014 Membership and Journal Subscription Form

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Sideline Commercial	11-50	2	1	$186	
Small Commercial	51-250	3	1	$367	
Commercial Level 1	251-400	4	1	$590	
Commercial Level 2	401 - 800	7	1	$920	
Commercial Level 3	801-1200	10	2	$1150	
Commercial Level 4	1201-1500	13	2	$1265	
Commercial Level 5	1501-3000	19	3	$2300	
Mega Commercial	3001 +	25	4	$3450	
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NZ Beekeeping Clubs		2	2	$200	

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New Zealand	**$140**
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Committee update

By Don MacLeod

To date, 2013 has been a quieter year than 2012 for the committee.

Our work is governed by the opportunities we get whenever the Environmental Protection Authority (EPA) publicly advertises an application. Many substances are approved without any opportunity for public scrutiny and comment. They can be self-approved by using a group standard or by rapid assessment.

'Group standards' include fertilisers, surfactants and pesticide technical active ingredients (not the final finished product).

Others are approved by 'rapid assessment', where no advertising or public comment is sought. There are three criteria, one of which must be met, for rapid assessment under the Hazardous Substances and New Organisms (HSNO) Act 1996.

So when there is no transparency with respect to the approval process, the Technical and Submissions Committee has little work to do. We have to do our work on publicly notified HSNO applications to the EPA.

Pesticide applications: submissions summmary

APP201609: Ortus insecticide containing the neonicotinoid thiamethoxam. Key features of this application were that it was incomplete, inaccurate and/or out of date. The NBA submission detailed these issues. To date the EPA has not scheduled a hearing or made any decision with respect to this application.

APP201634: 'Beekeeper', a pheromone-based bee attractant to be used at flowering. The NBA submission was made on the basis that very little information was present in the application, such as the name of the pheromone (required by the HSNO Act 1996). After reviewing the EPA Evaluation and Review Report, the NBA elected not to attend the proposed hearing. The product has been approved with controls.

APP201639: Optimite miticide containing the active ingredient Spirodiclofen. This was another application that was inaccurate and appeared incomplete. The NBA again pointed out these errors and in May there was an amendment decreasing the application rate from 1.2 l/ha to 400 ml/ha. To date the EPA has not scheduled a hearing or made any decision with respect to this application.

APP201687: BITHOR, an insecticide for controlling ants containing the neonicotinoid imidacloprid and a synthetic pyrethroid bifenthrin, both very toxic to bees. This application went to a public hearing on 25 July. Two organisations presented, including the NBA. The company representative for BITHOR told the hearing committee the product was not just for controlling ants but could also be used to control flies, wasps, spiders, bedbugs and other insect pests. None of these uses were mentioned in the application. Of interest to us, the EPA stated one of the ingredients could be considered an attractant to bees! To date the EPA has not made any decision. I cannot forecast the outcome of this hearing, as the proposed new uses may mean that BITHOR will have to reapply to the EPA for approval of this product.

ERMA200886: Sulfoxaflor insecticide from Dow AgroSciences. I have reported about this application in past editions of the journal. The Evaluation and Review report is to be published in September by the EPA and a decision is expected before this edition of the journal is published. The expectation is that this product will be approved by the EPA, with strict controls to prevent exposure to bees.

APP201581: KASUMIN is a systemic bactericide containing the antibiotic kasugamycin hydrochloride hydrate. Its intended use is to control *Pseudomonas syringae pv. actinidiae* (Psa) in kiwifruit, but the applicant had identified no benefits for the kiwifruit grower! Very little information was provided about the safety to bees, especially bee health. The major concern is the effect on bee health when sublethal doses of the antibiotic are brought back to the hive on pollen. The NBA has made a submission on this product and we have received a reply from the applicant's representative.

Kasugamycin and streptomycin

The Ministry for Primary Industries (MPI) requested that the NBA make a submission on the re-registration of kasugamycin and streptomycin. This was a pleasant and interesting surprise when the Agricultural Chemicals and Veterinary Medicines Group of the MPI sought submissions on the proposed registration for use of these two antibiotics for the control of *Pseudomonas syringae pv. actinidiae* (Psa) in kiwifruit. One issue we have with EPA applications for pesticides is that we never get access to the draft label. In this case MPI sent out the draft labels, one of which is for KASUMIN, which is yet to be approved by the EPA. The NBA has sent the MPI a submission on this issue, stating that we accept the use of antibiotics prior to flowering and the product must not be applied during flowering. It is noted that streptomycin will still be used during flowering on apples.

Surfactants

The EPA made a decision on APP201365 on 10 December 2012 that included a strong recommendation to review and reassess the use of surfactants. To date we have heard nothing about this review. We will continue to ask the EPA when this will occur.

Fungicides

The committee has gathered some interesting overseas information supporting a closer look at the use of fungicides and bee health; particularly a recently published US Department of Agriculture study suggesting

Continued on page 31

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Continued from page 29

a link between chlorothalonil residues in bee collected pollen and increased numbers of bees affected by *Nosema ceranae* fed this pollen (Pettis et al., 2013). Many fungicides are applied to crops over the flowering period to protect fruit from disease infection during fruit development. Also, many in the chemical industry to date have felt that fungicides have little effect on bee health. Bee health can be adversely affected by sublethal accumulation of pesticides in the hive, and can affect the bee's mitochondria. This is similar to the concerns the NBA has raised about the use of antibiotics as described above.

Neonicotinoids

The latest news has occurred in the New Zealand market with Bayer CropScience promoting Gaucho, a seed treatment formulation of imidacloprid. It is a real pity that the chemical industry cannot undertake responsible marketing.

The 3 September edition of the *Rural News* (page 36) features a Bayer CropScience promotion: "Buy 5 kg of Gaucho treated brassica seed and win a trip to the Melbourne Grand Prix".

Gaucho contains imidacloprid and is one of the neonicotinoid seed treatment products subject to the European neonicotinoid ban. I have to contrast the ad with Bayer's announcement of their New Agricultural Revolution on the same website. Bayer CropScience makes a significant call for sustainability in item 3 of the five principles (see http://www.cropscience.bayer.com/en/Commitment/New-Revolution-in-Agriculture.aspx). They state, "Helping reduce the environmental footprint of agriculture is a priority for us".

It seems that the marketers who dreamed up this promotion

1. were not aware of the global public concerns about imidacloprid
2. were not aware of the environmental persistence of imidacloprid, especially in waterways
3. are not interested in promoting responsible careful use of insecticides
4. are not interested in using insecticides as a tool to assist the grower, but interested in mass market sales promotion only.

Other

I was fortunate to meet with John McLean when he recently spoke at the Auckland Beekeepers' Club AGM on bee pheromones. We managed to discuss some key issues face to face.

We also had a good chat with all committee members at the NBA Conference in Ashburton, which we all enjoyed.

For more information on each of the EPA applications detailed above, visit the EPA website www.epa.govt.nz and enter the APP number in the applications register: http://www.epa.govt.nz/search-databases/Pages/applications-search.aspx

Reference

Pettis, J. S., Lichtenberg, E. M., Andree, M., Stitzinger, J., Rose, R., & vanEngelsdorp, D. (2013). Crop pollination exposes honey bees to pesticides which alters their susceptibility to the gut pathogen *Nosema ceranae*. *PLOS ONE 8*(7), 1–9.

OUT AND ABOUT

Working partly Africanised hives

By Frank Lindsay, NBA Life Member

Ever worked bees in an area where there are plenty of swarms but the bees are tetchy and overly defensive?

The swarm queens have to be found and replaced with a mated queen from out of the area. You can't let bees supersede on their own. To make matters worse, all the mated queens are pre-ordered by commercial beekeepers doing autumn splits so that they have hives ready for next year's pollination season.

I have just returned from Los Angeles, California where I had an opportunity to work a few hives. The hives I was working were from captured swarms and newly requeened with yellow queens. After working two hives I had to put on gloves, as about eight bees at a time would continuously attack my hands. I couldn't keep up removing stings before the next one hit. The hives that had been requeened for some time were pleasant: the bees stayed on the comb and were easy to work.

Requeening partly Africanised bees is quite tricky. You don't see the queen on a frame. As soon as the hive is disturbed or smoked, they run off the frames and hide in the corners of the supers and will even leave the hive and hide under the floorboard. Any queen found that is not marked is replaced as they are suspected of mating with Africanised drones. The easiest way to find a queen is to shake the bees off the frames into an empty super and force the bees through a queen excluder.

While working these hives, a small swarm formed on a branch above the hives. Ignorant me, I thought, 'why waste these bees?' and united them with newsprint on top of a weak colony. It wasn't until that evening that I realised what I had done so checked the swarm only to find the other bees had sorted out the problem for me. They killed the swarm and robbed the honey left for them. Apparently the smell of the open hives had attracted this swarm. If left, the swarm bees will gradually filter into a hive, find and kill the existing queen, and then the virgin from the swarm will enter and take over the hive.

Just imagine how it will change our beekeeping if these bees ever get to New Zealand.

Website on honey's therapeutic properties

By Peter Molan, Professor in Biological Sciences, University of Waikato

A website has been produced which makes available, in language accessible to the public, the knowledge about the therapeutic properties of honey.

The website has come from three decades of research on honey at the University of Waikato, and from researching the literature published by other researchers around the world.

My interest in honey started about 31 years ago when Kerry Simpson told me about honey being used as an antiseptic, and persuaded me to investigate the reason for manuka honey having greater effectiveness than other honeys for this application. The discovery that manuka honey had an unusual type of antibacterial activity led to further investigations and to extensive research into what had been published on the antibacterial activity of honey and its usage in medicine.

The following three decades of my life were devoted to this enthralling subject, with research in the laboratory, clinical research, and searching out everything that others had published about the various bioactivities of honey and its therapeutic usage in a wide range of ailments. Over this period I have gained a very large amount of knowledge about this subject. Reaching the age of 70 this month, and with my wife urging me to retire, I decided that now was a good time to encapsulate this knowledge in an easily accessed resource for the benefit of others. Hopefully this website I have produced to share this knowledge will help correct the many misconceptions I find that people have about honey. Another hope is that it will encourage and help others taking up the mantle to continue scientific and clinical research on honey, and encourage increased usage of honey as a medicine.

The contents of the website include:

- a list of the findings from completed work in Honey Research at the University of Waikato on honey's antibacterial, antifungal, antiviral, anti-inflammatory and antioxidant bioactivities, with an outline of the details of each finding
- the details of all the papers and theses published arising from Honey Research at the University of Waikato (sorted under the headings: *Composition of honey; Antimicrobial activity of honey; Immunology; Antioxidant activity of honey; Medical usage of honey; Dental usage of honey; Nutrition),* with a link to get free copies of the full text of these articles from the University of Waikato library
- details of the composition of honey
- a link to articles on the range of uses of honey in medicine, and the properties of honey which give it the medicinal actions
- the antibacterial activity of honey, its effectiveness against 'superbugs', and the role of honey in treating diseases (all of this with references to publications in journals)
- the very unusual type of antibacterial activity in manuka honey, what is special about this, and what the term 'Active Manuka Honey' was coined to mean
- how the antibacterial activity of honey is measured and rated
- selection of honey for medical use, and what 'Medical Grade' honey actually means
- the anti-inflammatory activity of honey, its usefulness for treating burns, promoting healing in non-healing wounds and minimising scarring; an outline (with references to the publications) of the very large amount of scientific evidence for honey having anti-inflammatory activity
- the antioxidant activity of honey; the variation between honeys in this, and the two types of activity: free radical scavengers and the more effective "pre-emptive antioxidant activity", which prevents the formation of free radicals in the first place
- the stimulation of the immune system by honey: evidence obtained with white blood cells in laboratory cultures, and evidence from studies with laboratory animals
- the use of honey in modern medical practice to treat wounds, including links to papers which review the vast amount of clinical evidence for the effectiveness of honey
- the scientific explanation of why honey works so well on wounds
- details of the many different wound-care products made from honey that are on sale as registered medical products in many countries
- details of how honey is applied to wounds to get the best results
- a comprehensive bibliography listing the vast number of publications in peer-reviewed professional scientific and medical journals of research from around the world on the medicinal and nutritional properties of honey, sorted into topics: reviews of medical publications; clinical trials; medical case reports; honey in folk medicine; experiments on animals; veterinary usage; treatment of cancer; gastro-intestinal usage; ophthalmological usage; dental aspects; nutritional aspects; antioxidant activity; anti-inflammatory activity; antimicrobial activity.

Links are given to where abstracts of the papers listed in the bibliography can be found, and to reviews which summarise what is in the papers on the use of honey in wound healing, the antibacterial activity of honey and nutritional aspects of honey.

The many different sources of funding of Honey Research at the University of Waikato over the past decades are listed. This website has been produced completely independently of any commercial interests, being done using my own time and resource. Care has been taken to ensure that it is scientifically correct and that there is no bias.

The URL for the website is http://waikato.academia.edu/PeterMolan/Papers

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FROM THE COLONIES

Auckland Branch

The winter has been mild in the region, with rain when we needed it and plenty of fine, warm spells in between. The bees have come through the winter well and are in good shape for the coming season.

Auckland Branch had a very successful meeting at Waitemata Honey Company's premises (thank you, Neil) that was well attended. Dr Jonathan Stephens, Comvita research scientist, gave a very interesting presentation about C4 sugars in honey. This generated considerable discussion and the clear message was that if you are feeding sugar, great care needs to be taken that there is no residue of honey in the brood box for the bees to transfer up into the crop boxes at the beginning of the new season. Research is ongoing to solve the problem of false-positive readings and to improve hive management to avoid rejection of export crop.

Here's to a successful season ahead.

- **Helen Sinnock**

Waikato Branch

Spring has sprung three weeks early, catching many of us still in 'holiday' mode.

There seem to be very few mites around, although one beekeeper has reported finding a couple of yards in the Waikato with high mite levels. However, the farm owner told them that some hives had appeared across the road. Hopefully these will be dealt to with strips asap!

Waikato had a good branch meeting on Friday with a discussion around hive security. Several new faces turned up, which was fantastic to see. The meeting was followed by an evening meal at a local restaurant in Te Awamutu, which was most enjoyable with great food and good company!

- **Barb Cahalane**

Bay of Plenty Branch

Consider the benefits of being a BoP branch member. We encourage you to opt-in and enjoy the benefits such as those highlighted below. Also, being part of a group of people with whom you can discuss bees is important, not just for commercial beekeepers but also for hobbyists.

Some of the things BoP Branch has offered this past year:

- supported research project funding,
- ran two four-wheel drive (4WD) training days. The first of these looked at what a training course would involve and how certificated courses could fit into the business of keeping bees. Those involved felt it was very worthwhile and important to take the next step of encouraging members to get certification and provide safe working environments for all concerned. The next step was a certificated course from which the participants gained unit standards, practical tips and confidence:
  - 17976 – Demonstrate knowledge of operating a light four-wheel drive vehicle in an off-road environment
  - 17978 – Operate a light four-wheel drive vehicle in an off-road environment
  the first certificated course was well attended and a second is now planned (members are offered a 50% course discount fee on successful course completion)
- an evening with OSH advisors to discuss potential areas that could lead to litigation and how to minimise risk for both employee and employers
- a DECA course (offered free of charge to members)
- liaison with Zespri and KVH re pollination and subsequent discussion at branch meetings
- update meetings from March to September with informal discussions after meetings. Members value being able to discuss with other beekeepers the issues (both good and bad) they are experiencing on a daily basis. Most of us work a little remotely so having regular contact with like-minded people is important.

In the pipeline (before we all get too busy with the new season) is a first aid course. Yes, we all know basic first aid, but refreshers are important. The course fee will also be subsidised for members.

Join in now.

- **Greg Wagstaff**

Poverty Bay Branch

The weather during August has continued to be mild. Most hives are still heavy with stores and are very strong. Spring cleaning has shown up a few drone layers but winter losses are still below one percent.

Trees for Bees project

This month we have installed a set of five hives on individual Hivemind scales on the trial site. These scales record individual hive weights every three hours and send the data by satellite. The data can be viewed online in graph form.

At another location we have set up another five hives with the same set-up to act as a control. This year will be a benchmark and we hope that we will see improvements in future years as our Trees for Bees plantings mature.

Hives on Hivemind scales at our Trees for Bees sites at Lake Repongaere and Lavenham Road, respectively. Photos: John McLean.

- **Paul Badger, Branch President**

Hawke's Bay Branch

Hives have generally come in through the winter better than last year, although varroa numbers are higher than usual. As far as we can tell, this is not due to resistance but simply to re-invasion, possibly because of the very warm winter. It is also becoming very noticeable that fewer varroa are needed to cause damage to the hive than in the past.

Hive losses have been considerably less than last winter. Our lovely warm winter has been followed by a particularly cool start to spring, which is pretty typical for Hawke's

Continued on page 37

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Bay. Hive numbers are continuing to increase rapidly, following the trend for the rest of the country. The very high hive numbers, especially in the spring build-up areas, is making it increasingly harder to get hives up to pollination strength and more sugar and artificial pollen are being fed.

- John Berry, Branch President

Southern North Island Branch

Spring is here. After a mild winter everything is starting to blossom, which could be good for bees. Many around our area are reporting hives starting to move. If we are not careful, swarming will be on us earlier than usual. I tend to follow the projections made by Ken Ring, as in the past he has been remarkably accurate in forecasting weather patterns and thus what is likely to affect hive growth, queen raising etc.

Camp Rangi

By the time this journal is published, our Branch will have held another very successful 'Camp Rangi' educational weekend. At the time of writing the course was fully booked with 110 participants. Speakers covered many aspects of beekeeping, with additional hands-on instruction via 32 hives brought on site to demonstrate spring checking, splitting hives, making nucs and introducing queens and queen cells. Subjects covered included bee biology, hive set-up, locations and drifting, hiveware construction, use and upkeep of plastic frames, acquiring bees, moving from hobbyist to small commercial and full-time beekeeping, preparing for varroa resistance, bee nutrition, swarm control methods, disease identification, wintering down and preparation for spring, requeening, small hive beetle (Des Cannon, Australia), EFB, nosema and viruses, and New Zealand regulations for beekeepers.

If you recognise points that you would have liked to learn more about, then in a couple of year's time the Branch is likely to run another Camp Rangi.

2014 Conference update

Initial planning is under way for the 2014 Conference in Wanganui. As part of our theme is 'working together', expect to hear more as time passes.

At this stage we, as the organising group, are in discussion with bee groups. We also are trying to contact other beekeepers in an endeavour to reach everyone (beekeeping firms, large and small, many of which do not belong to a representative group). These non-members are the ones who have no say in our industry or research but their livelihoods may depend on decisions made for research and also on the decisions of Government departments. Everyone needs to be aware of what is happening—good or bad—and if we do not speak with a strong voice and representation, then those in Government will impose things on us, whether we like it or not and whether it is justified or not. Plan on being at Conference in June 2014 at Wanganui.

- Neil Farrer, NBA Life Member

Nelson Branch

Generally the effect of the warm winter has been offset by August having a few good spells of rain and a wee cold snap. Paddocks haven't been given much of a chance to dry out, with the rain coming and going.

Pollination providers (being romantic types) are, of course, thinking about when we will see some pretty wee apple blossoms. Probably sometime soon, well before this journal goes to print.

Plenty of thought is also being put into kiwifruit pollination. With the spectre of Psa looming, orchardists have been forced into changing some kiwifruit varieties. Beekeepers in turn are going to have to get used to new pollination timeframes. Whether these will be compatible with getting a successful honey crop is yet to be seen.

There has also been concern that should Psa arrive during or leading up to a pollination period, hive movements may be restricted. Even though it hasn't arrived here, Psa has already affected, and will continue to affect, both orchardists and beekeepers.

Local beekeepers can also look forward to a queen-rearing field day hosted by Gareth and Cath Ayers on Sunday, 13 October. Hopefully the weather is good for an educational day in the apiary.

- Nahum Kelly

Otago Branch

Spring seems to have arrived a couple of weeks early.

Janice and Tudor.

There was a good display at Mitre 10 Mega in Dunedin to support Bee Awareness Month, and to encourage people to plant bee-friendly plants. A number of groups were involved, including Beeline Supplies, who loaned bee gear for the in-store display. The live display hive that was in the Garden Centre was looked after by Rent-a-Hive for the weekend of 24–25 September. Otago NBA members and the Dunedin Beekeepers' Club helped. There was a lot of interest and positive feedback from the public, particularly from those viewing the display hive, painted in Otago colours.

Heidi, Peter and Murray.
Photos supplied by the Otago Branch.

Planning for the spring field day on 28 September is coming together. It looks to be a busy agenda with presentations about varroa and product standards.

- Tudor Caradoc-Davies, Branch Secretary

We want your photos!

Email editor@nba.org.nz for further information.

The decade 1993–2003

By Apiarius Antiquary

This decade started with secure funding for the NBA, as well as a 'membership' that included much of the industry via the Hive Levy Act.

The industry was moving in a positive manner, with an active marketing programme promoting bee products under the direction of Bill Floyd and supported by many of the producers and larger honey packers. Research was under way to identify beneficial properties of honey and the work by the University of Waikato, under Professor Peter Molan, assisted in creating a health market for manuka honey. Dr Mark Goodwin (HortResearch, Ruakura) was conducting research work on American foulbrood to assist beekeepers in controlling the endemic disease. The protection of bees in the environment was ongoing through the work of the Agricultural Chemicals Board's NBA representatives.

Various investigations were undertaken to improve the pollination of kiwifruit; also, beekeepers were increasing their mobility of beehives to service the kiwifruit industry.

Private exports of honey were creating opportunities for producers to embark on new markets, and even the exports of package and queen bees were creating opportunities for beekeepers.

Over the years, a couple of factors appear to have consistently created issues for industry groups, and in particular the NBA: the Government changes the game and the organisation starts navel gazing, begins to focus on personalities and structure and loses sight of the tasks of common good activities. This decade was no exception. The government signalled a legislative change that would necessitate the NBA seeking a different process for industry funding. As well, government indicated a withdrawal of apiary services through MAF: this would place the regulatory control of AFB in the control of the beekeepers.

The conduct of those involved in the industry tends to be a measure of the respect the industry has from the general public of New Zealand. A quote from Bill Floyd in 1993 is just as relevant today:

> *A few weeks ago a honey packer, called me, let's call him Mr A. He explained that he was selling manuka honey through a major retail food group. He had good shelf spacing, sales were going well everyone was happy. But then the food group telephoned and said: "sorry, you'd better come and take your product off the shelves. We're replacing it with someone else's manuka honey". Mr A asked why.*
>
> *The food group said because this other chap's offering us manuka honey as good as yours, and he's prepared to let us have it at $1.00 per 500gram unit less, one dollar less.*
>
> *Mr A was, one, annoyed, two, horrified, and three, absolutely astounded. Wondering what the heck to do he thought let's see if this marketing levy I'm going to contribute to will be of any value.*
>
> *Mr A phoned me. I telephoned the second honey packer, we'll call him Mr B. But I telephoned him after his honey had been examined and, insofar as modern techniques allow, we'd ascertained the actual composition of his honey. We believe that the manuka content of his honey was around 13–16 percent. The bulk of the honey seemed to consist of variety of things. Kamahi certainly came to the fore. So what we had was a dark honey of very mixed breeding, masquerading as our current wonder variety and premium price commanding manuka.*
>
> *The honey also featured a very interesting label which made reference to Dr Peter Molan, stating that Waikato's research shows that some honeys have higher levels of antibacterial activity than others, that manuka is one of these, and that the manuka in this container has been tested by the department of biological science at the University of Waikato and had a medium to high level of antibacterial activity present. Anyone reading that would be inclined to think that honey was what we now define as 'active'.*

AFB Pest Management Strategy

As government wished the beekeeping industry to assume greater responsibility for AFB control, the NBA set up an AFB committee led by Terry Gavin to progress a Pest Management Strategy under the provisions of the 'new' Biosecurity Act.

AFB control was carried out by MAF under the provisions of the Apiaries Act, in existence since 1906 although it had been amended to meet the requirements of the times. The proposed strategy evolved over a number of years, with seemingly never-ending consultation. It was felt that existing controls were costing the government and the beneficiaries were better able (if motivated) to control AFB. The strategy aimed to eradicate AFB by 2000 by ensuring beekeepers were conversant with the symptoms of AFB, took steps to inspect hives on a regular basis and destroy any infected hives. The regulatory capacity of the strategy was as an industry-led initiative to educate beekeepers and ensure that beekeepers met their responsibilities, rather than becoming an enforcement agency that conducted hive inspections.

The AFB Pest Management Strategy was given legal status in 1998, signalling a renewed enthusiasm by beekeepers to eradicate AFB without the use of drugs.

Introduction of the apiary levy

The Hive Levy Act, through which industry funding was generated, was to be revoked and it was considered that industry funding for the NBA could be achieved through the Commodity Levies Act. Discussions within the NBA appeared to favour funding on an apiary basis as being easier to ensure beekeeper compliance to pay their levies.

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The Commodity Levies Act had to be amended slightly to provide for apiaries (not hives) as a basis for the levy to be struck. It was perhaps with a sigh of relief that Richard Bensemann announced "the last Hive Levy ever 1996". A new 'apiary' levy was introduced in 1997 and was payable by all beekeepers who owned 10 or more hives on more than three apiary sites. The levy was set at $50 for the first apiary and each subsequent apiary at $22 (exclusive of GST). The funds provided for the administration and activities of the NBA and included the running of the AFB PMS.

The secretarial services were provided by Harry and Janice Brown (Napier) until 1999, when the Federated Farmers provided the services under contract. In 1999 the President was Terry Gavin, Vice President Bruce Stevenson, with Executive members Tony Taiaroa, Don Bell, Lin McKenzie and Gerrit Hyink. The librarian was John Heineman. There were 16 branches: eight in each island.

There were 5,256 beekeepers owning 298,921 hives on 23,754 apiaries. Honey production was assessed at 8,081 tons. Live bee exports were 25,722 x 1.5kg equivalent packages of bees (each with one queen bee) and 20,815 queen bees.

Arrival of varroa

The April 2001 journal contained the following article:

> *The honey bee mite* Varroa Jacobsoni *was confirmed in three beehives on a property in South Auckland. Hives on three other properties have been inspected, and are showing signs of infestation. A full-scale survey to determine the extent of the spread of the mite has begun.*

The beekeeping industry was thrown into turmoil with the discovery of the destructive pest varroa. MAF initiated a response that was supported by the NBA Executive and beekeepers, as written in the May 2011 journal by Terry Gavin:

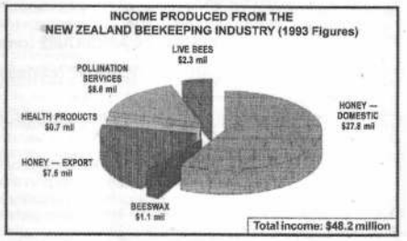
> *What a shambles. However, I must agree that order soon came out of chaos with Agriquality putting six teams of one authorised person and two beekeepers each in the field by about 2.00pm in the afternoon of the first day.*
>
> *Numbers of teams increased day by day with beekeepers being approved as authorised persons, under the Biosecurity Act. The maximum number of teams was, I think, twenty five. The response from the beekeepers was magnificent. Everyone arrived each day and did as they were asked by the organiser. Not a complaint was heard. The beekeeping industry must be grateful for the dedicated work done by these beekeepers as this outbreak will affect us all.*

An immediate beekeeper response to the varroa incursion was to eradicate the mite by killing colonies and there was considerable debate in beekeeping circles about the likely outcome. The Executive called for Branches to hold meetings throughout the country to gauge support for an eradication attempt and a vote was held. The outcome was 396 votes supporting eradication, with 18 votes opposing an eradication attempt. However, Government adopted a control of varroa and initially provided varroa treatment strips and set up control lines to slow the spread of varroa throughout the North Island.

Commodity Levy

The Commodity Levy, which had been operating to fund the NBA activities, was to expire in December 2002. The executive was aware that the Commodity Levy did not cover funding from the hobby beekeepers but required the hobby sector to be 'serviced' by the AFB PMS. A proposal to create a separate AFB levy to be charged to all beekeepers and a commodity levy to provide funding for the NBA activities was promoted. As written in the journal:

> *Because the current levy expires in December, the NBA must develop the two levy proposals and seek stakeholder and statutory approval.*
>
> *The NBA's service providers, Federated Farmers of NZ (Inc), will oversee the two projects and former NBA president Richard Hatfield has been contracted to manage the projects and supervise a project team informing members about the levy development process. A consultation programme must be developed and implemented with stakeholders over the following two to four months. Extensive consultation will start next month with meetings for NBA branches and a mail-out sent to all beekeepers outlining the two levies.*



A pie graph that appeared as part of an article in the journal in 1994. The article was titled 'NZ beekeeping income reassessed', and described research carried out by Cliff Van Eaton of MAF Quality Management.

Branch meetings were held and a postal ballot was held in June 2002, resulting in a vote that did not support continued funding of the NBA by a commodity levy. The NBA was in a difficult position without having secure funding, and the MAF considered the consultation for the funding of the AFB PMS was inadequate. Therefore, there was no funding for the PMS.

This decade ended with the NBA being compromised by the lack of industry support to maintain funding on a compulsory basis by way of a levy. As well, the AFB PMS was compromised.

To further complicate issues, a group of Canterbury and Otago beekeepers started a new organisation under the Federated Farmers banner. Some executive members resigned and Jane Lorimer stepped up in the new role of President, not only to keep the 90-year-old organisation going, but also to protect the assets and industry benefits that generations of beekeepers had built up over the decades.

The last beekeeper journal issued to levy payers was produced in December 2002 and the contract with Federated Farmers as service providers for administration was terminated. A reduced membership of volunteers continued the work of the NBA, and picked up the pieces of an industry group severely compromised but with important responsibilities.

Sources

The New Zealand Beekeeper, 1993–2003.

OPINION

Warning about honey contaminants

By Peter Molan, Professor in Biological Sciences, University of Waikato

Many in the honey industry may be familiar with the name *Clostridium botulinum*, which keeps cropping up in news items about the present furore in the dairy industry.

For decades it has been standard public health advice from authorities that honey not be fed to infants under 12 months of age because *Clostridium botulinum* spores are sometimes present in honey. The spores will germinate and grow in the conditions that are present in the gut of an infant up to the age of 12 months, and produce botulinum toxin, which causes paralysis. This condition is called infant botulism, or 'floppy baby syndrome'. It is a very rare illness, but because there is a small risk of infants contracting it from eating honey there are warnings given. It will be interesting to see if the authorities, out of fairness, now issue a warning to parents to not feed infant formula to infants under 12 months of age.

The cost of recall of product on sale containing *Clostridium botulinum* spores must be very high. A larger cost will be incurred through the huge amount of damage done to export markets by the detection of this contaminant in whey concentrate powder that was exported. It is considered that the banning of importation of New Zealand dairy products by some countries has been done for political reasons using the contamination as an excuse.

This should serve as a warning to anyone exporting honey with contaminants present. Methylgloxal (MGO) and dihydroxyacetone (DHA) added to boost the non-peroxide antibacterial activity of honey are contaminants which it is illegal to add. This includes feeding the bees the DHA-containing 'activity booster' that has been on sale. Sucrose fed to bees which is allowed to get into honey combs is also considered to be a contaminant. Producers contaminating manuka honey with sucrose in this way have caused problems for those exporting manuka honey to the USA and Hong Kong. Now all exporters to those countries are having to get their manuka honey tested for the presence of added sucrose. There is also the damage to the reputation of New Zealand honey that has come from publicity in the news media. Although bees may need a supplementary feed when the hives are put out in early-flowering manuka, contamination with sucrose can be easily avoided by using honey as the supplementary feed.

Contamination with methylgloxal (whether added directly or formed by reaction of added or fed DHA) can be detected. When this happens in an export market you can be sure that there will be lots of publicity, and there will be costs not only to the exporter who has to recall the product, but costs for all exporters (and thus in turn for apiarists in reduced prices paid) because consumers will lose their trust in manuka honey. Many consumers have a complete aversion to foods with chemicals added, and purchase manuka honey because it is a natural antibacterial substance. Detection of such contamination may also be used as an excuse to exclude New Zealand honey from some markets. If you are aware of fraudsters putting the whole honey industry at risk in this way, both here in New Zealand or overseas, I urge you to do something about putting a stop to it.

OBITUARY

Robert Davidson (Junior), inventor

Robert (Bob) Davidson Jnr died on July 27, 2013 in Timaru in his 83rd year

Bob was the son of Robert Davidson Snr, who set up Davidson's Apiaries, a large beekeeping outfit based in Timaru. Robert Davidson Snr was active in the NBA and served as a producer representative of the New Zealand Honey Marketing Authority (HMA) in the 1950s.

Robert Jnr was better known as an inventor and entrepreneur than as a beekeeper. He spent many hours developing various pieces of equipment, including the Davidson Uncapper.

His entrepreneurial skills led to the development of 'Apis Mellifera', a bee product-based skin care product that was very popular in its heyday. The 'secret recipe' largely attributed to the success of the product, one of his 'Bee Wild' range of products.

Bob was a keen gardener and his garden at Otipua Road in Timaru was admired by many and was often the feature of garden tours.

He is survived by son Geoff and daughter Kathryn. We extend our sympathies to the family.

Sources

Information supplied by Roger Bray, death notice in the *Timaru Herald*, 3 August 2013, http://www.stuff.co.nz/timaru-herald/news/8998008/Innovation-the-quest-of-a-lifetime (retrieved Aug 15, 2013).

Honey update

By Jim Sim, Principal Advisor Animal Products

Tutin standards

Recent MPI-funded research has shown that tutin exists in honey in both a bound (conjugated) form and a free form.

The bound component unfortunately unbinds itself in the digestive process and reverts to the free form, and can then contribute to the unpleasant toxic effects a poisoning victim experiences.

This has implications for both where tutin limits should be set and for how tutin should be tested for. It's not clear at this stage whether the proportion of bound tutin to free tutin is constant or variable and how much bound tutin is actually present in toxic honey.

MPI is currently funding development of a test method for the bound tutin. Once a method is available (hopefully by the time you read this), we will be looking to check whether the levels of free tutin are constant with the levels of bound tutin or whether these vary and if so, by how much.

If ratios are constant then we can keep using the current test method; if not, there will have to be potentially expensive changes made to the testing method.

How you can help

We urgently need some tutin-contaminated honey samples for research. What we need is samples of honey containing tutin in the range 0.1 to 5 mg/kg, together with information on harvest date and the rough area they were harvested from. Ideally we'd like 1–2 kg sample sizes, but at this stage we will take anything people have, as most seem not to have more than small samples retained.

Samples should be sent to Jim Sim at MPI, Pastoral House, 25 The Terrace, PO Box 2526 Wellington 6140, together with the beekeeper's contact details, test results, area and date of harvest as soon as possible. People with questions about this can contact Jim on 04 894 2609.

Food Standards Australia New Zealand is looking to commence consultation on permanent tutin limits once the research has been done to establish the appropriate levels and ways to measure tutin.

MPI will also review the Food (Tutin in Honey) Standard 2010 once it is clear where limits should be set and aims to consult concurrently with FSANZ so that both the limits and their controls are discussed together.

Manuka honey definition

On 10 September, MPI released a discussion paper Options for Defining Monofloral Manuka Honey: see http://www.mpi.govt.nz/news-resources/consultations/options-for-defining-monofloral-manuka-honey

The aim of the paper is to seek information and to encourage industry to discuss this important matter. Submissions closed on 30 September.

Once submissions have been analysed, a draft guideline will be available on the MPI website. There will be a further opportunity for comment and feedback before the final guideline is issued. MPI is particularly interested in evidence and datasets that will help provide a scientifically robust definition for manuka honey.

Development of the guidelines was prompted by concerns raised in offshore markets about the authenticity and labelling of New Zealand manuka honey. Once the guidelines are developed, MPI will be conducting analysis of regulatory options for further ensuring products are true to label.

Food Bill

The Food Bill, currently before Parliament, will ensure that the food people buy is safe to eat through better and more flexible regulations. It will empower food businesses to manage food safety using tools based on the level of risk.

The Food Bill, like the current Food Act, applies to everyone that sells food whether this is from a shop, a stall at market or on the Internet.

If your business is registered under the Food Hygiene Regulations 1974:
There will be a change. You will need to operate under a National Programme instead of registering the premises you work from.

The national programme has three levels that reflect the level of risk related to the food you sell, with level three covering the higher-risk food activities and level one the lower risk. The Food Bill currently proposes that a business that only extracts and packs honey would operate under national programme level 1.

More specific detail—including the key requirements for each level of National Programme—will be set out in regulations. These regulations will be publicly consulted on after the Bill is passed in Parliament. The regulations will be finalised once the new Act takes effect.

If you already operate under an approved Food Safety Programme (FSP) under the Food Act 1981:
The Food Bill will not have an immediate effect on your business. MPI will accept your current FSP as a Food Control Plan and you won't need to do anything. You can just continue to meet operating requirements as usual. It is important to note that your business may be affected by any new regulations made under the Food Bill.

If you operate with a Registered Risk Management Programme (RMP) under the Animal Products Act 1999:
There will be no change. You will continue to meet the requirements of your RMP as usual. This applies to extractors and packers of honey and the further processing of bee products intended for export with an MPI official assurance (export certificate).

Note: All bee products sold in New Zealand must meet the requirements of the Australia New Zealand Food Standards Code and the Food (Tutin in Honey) Standard 2010. You can find further information on the Food Bill at www.foodsafety.govt.nz

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Prices from 1st of January 2011
1 pce = 2 wafers

Up to 100pces $5.00 + GST ($2.50 per wafer)
200 to 1900 pces $4.60 + GST ($2.30 per wafer)
2000+ pces $4.00 + GST ($2.00 per wafer)

Payment is required before delivery
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Beekeeping and your back

By Anneke Campbell, The Better Back Company, Email anneke@betterback.co.nz

Beekeeping can make very tough demands on your back.

Back pain doesn't kill, it tortures! Lifting heavy frames of honey and forward bending can all cause back pain, which interferes with the enjoyment of keeping bees.

The back consists of a stack of bony vertebrae, which are cushioned by tough, gel-filled discs. The discs are the shock absorbers for the spine.

The lower lumbar discs often suffer the most stress through poor posture when sitting and forward bending. When we slouch or bend forward, the fronts of the lumbar vertebrae squeeze down on the front of the lumbar discs. This pushes the gel nucleus towards the back wall of the disc and increases the pressure within the disc. If we also add a twist when doing this through incorrect lifting or bending, we increase the pressure even more.

Now the disc wall is tough, but when we increase the pressure on the wall day in and day out, it can weaken. This can lead to a bulging of the disc wall, putting pressure on nerve roots and the sciatic nerve; or worse, can rupture the disc, which causes severe pain and inflammation which requires weeks off work to heal.

Once your back is damaged like this it will never be the same. Prevention is better than cure!

So what can we do to maintain a healthy back?

1. Good posture
2. Correct lifting techniques
3. Adequate hydration
4. Exercise: special back strengthening and hamstring stretching
5. Weight management
6. Not lifting beyond what you are capable of.

The most important ingredient is good posture, both sitting and standing. This is where The Better Back Company can help. They have back supports that help retrain correct posture when sitting and standing.

The **BackUp** is the training tool that everyone in the household can use. It prevents the pelvis tilting backwards, thus preventing the vertebrae from squeezing on the discs. Through using it when sitting watching TV, reading, or doing desk work, the muscles learn through muscle memory to adopt the correct posture. This also works to correct standing posture as the shoulders automatically come backwards. So by sitting up straight, you learn to stand up straight.

The more you use it initially, the less you will need it. Then you will use it when you need it. It can be used for as little as five to ten minutes or for six to seven hours when long-haul flying.

The **LumbarJack** is a proper lifting belt. It can be worn under overalls, helping to support the back when doing any heavy manual work or prolonged forward bending. It becomes an essential tool when collecting honey supers. The LumbarJack also has ergonomic upgrade straps for long-distance driving or when spending hours on machinery.

Dont let a sore back ruin your day. Visit The Better Back Company's website www.betterback.co.nz for details, or call or email Anneke to discuss your requirements.

Report of August meeting

By Dr Jim Edwards ONZM, Chairman

The Bee Products Standards Council met in Wellington on Wednesday, 28 August.

In addition to the Council members and other regular attendees, there were a number of invited visitors from the manuka honey industry who have been working with New Zealand Trade and Enterprise (NZTE).

BPSC legal entity

The Council considered the advice it had received and decided to discuss this further with a decision to be taken before the end of the current financial year. There has been a huge change in industry and the role of the BPSC.

PA project

The annual report had been circulated to Council members and there was further discussion. While the budget would be supported with significant contribution from the Sustainable Farming Fund, this will need to be supplemented with $50,000 from the industry per year for the next two years.

Research undertaken within the PA project (pyrrolizidine alkaloids) will be published in peer-reviewed journals. This is important for credibility and acceptability of the work and any subsequent policy development.

Tutin

Research is continuing to determine the limits for tutin.

Jim Sim (Ministry for Primary Industries) urgently requires honey samples containing tutin to be able to establish the standard. Any industry member who has samples is asked to forward them to Jim as soon as possible. The permissible comb honey levels are also under review and industry feedback was sought on whether further research should be undertaken over the summer to look at tutin distribution in honeycomb.

There was discussion about the mapping of tutu and databases to examine location and altitude. A *Scolypopa* distribution survey should be considered. There may be SFF funding available if the industry would make co-funding available.

The FSANZ work is continuing and will involve two rounds of consultation. The standard will need to be finalised by the end of 2014.

Residue monitoring

The Animal Products (Regulated Control Scheme – Verification of Contaminants and Compositional Requirements and Surveys in Bee Products for Export) Notice 2013 was discussed. This included the possible inclusion of apparent C4 sugars contamination. It would provide a platform to use should an issue arise with an importing country.

> "Hive feeding practices should be discussed within industry to demonstrate prudent management."

Bee product transport and storage issues

The New Zealand regulatory regime is under intense scrutiny, with a number of inquiries taking place. One of the issues identified is the control and traceability of animal products.

Food Bill

The Food Bill has been referred to select committee along with a Supplementary Order Paper that updates and clarifies the Bill. When the Bill becomes law, regulations will be developed. There will be extensive consultation giving people the opportunity to have their say on the detail of the new food system. After it comes into force, food businesses will have a transition period of three years to become compliant with the new rules.

Most of the bee products sector operates risk management programmes under the Animal Products Act 1999 (APA). MPI have identified a few Food Safety Programmes (FSP) premises and some Food Hygiene Regulations premises. However, small hobbyists may be operating outside these requirements. The proposed Food Act (just as the current Food Act) requires food being sold to be produced in registered premises.

Mobile extraction

MPI has identified issues with mobile extraction. They have identified the need for more guidance on mobile/field extraction of honey with regard to design and construction, operation, storage of product in the field and associated traceability and official assurance issues. MPI proposes to visit each operator that has a mobile extractor as part of their RMP to inform this guidance.

Export non-conformances

All exporter non-conformances need to be notified to MPI. This is important to maintain credibility with our trading partners. The Council was reminded that there is only a one-off dispensation for late raised e-certs.

The bee product road map on the MPI website under Road Map Honey and Bee Legislation (refer to www.foodsafety.govt.nz/elibrary/industry/honey-bee-products-roadmap.pdf) is a summary of all the legislative and guidance requirements for bee products.

Manuka standards

The Chairman asked that those present take a 'governance' approach to the discussion.

MPI was very concerned about recent developments that included trading partners now requesting information. As a result, market access was at risk. This is a very serious issue. This issue flowed across the whole industry. The content claims issue

highlighted truth in labelling about honey type and activity. MPI will need to be able to convince other regulators and will have to deal with any fraud detected.

After a long discussion, the Chairman asked for indications of agreement and commitment and concluded the following:

1. adoption of an interim guideline which could continue until March 2014 when further standard development will be implemented
2. agreed that if a product has a descriptor, then the product must meet that description (truth in labelling)
3. agreed to work to prevent misrepresented product from entering the market
4. agreed to the continued use of NPA, UMF, MGO and MG branding
5. recognised that bulk honey exports should continue
6. working together as a whole industry.

The Hon Nikki Kaye, Minister for Food Safety, then joined the meeting. She said that the spotlight on New Zealand would subject products to greater scrutiny from regulators and the media. The industry needs to work faster to ensure truth in labelling. She wanted to see the development of a guideline and further science on marker compounds. The Minister said that officials had been asked to make guidelines and signalled the potential to develop further regulation. MPI was to work with industry and if the industry did not agree on a guideline, then MPI would produce a guideline or a Section 60 notice. The Minister concluded that other regulators wanted to see something more than just voluntary guidelines.

Apparent C4 sugars contamination

Dr Karyne Rogers' paper was to be submitted for publication next week. It will be necessary to get adoption of revised methodology by importing countries by MPI staff, once the publication has occurred.

Honey management practices could be used to help reduce the problem; however, further research is required. Hive feeding practices should be discussed within industry to demonstrate prudent management. Publication of guidelines for beekeepers would be useful.

New apiculture qualifications

Media release from the Primary ITO, 12 September 2013

The Primary ITO has been involved in the process of reviewing the Apiculture Qualifications they are responsible for.

This involved working with a representative group from the apiculture industry to determine the qualification needs of the sector.

The new qualifications will reflect the latest needs of the industry and will address the relevant skills and knowledge that beekeepers and apiculture groups require nationwide. The development and registration of these new qualifications will herald new opportunities in apiculture training throughout the country.

An extensive consultation process has taken place and involved a wide range of people within the industry inclusive of the National Beekeepers Association, Federated Farmers Bee Industry Group, Bee Products Standards Council, AsureQuality, pollination service providers, commercial honey producers (including manuka honey producers), Apiculture Training providers, tutors and scientists, as well as beekeepers, have all been part of the working group mix.

The proposed new qualifications were submitted to the New Zealand Qualifications Authority (NZQA) in early August and after an evaluation process will be registered on the NZQA framework. There will be a transition period where the old qualifications will be phased out and the new qualifications will take over.

The new qualifications will be known as New Zealand Certificates, not National Certificates. These will be the:

1. **New Zealand Certificate in Apiculture L3**
   This qualification will be for people who work independently with a small number of hives (hobbyist) or for people who work under supervision with a large number of hives. It will equip a person with the skills and knowledge to work in a small-scale operation or assist in a commercial operation.
2. **New Zealand Certificate in Apiculture L4**
   This qualification is for people who can manage a viable apiculture business. These people would largely work independently and may supervise others.
3. **New Zealand Certificate in Apiculture (Queen Bee Rearer) L4**
   The purpose of this qualification is to provide the industry with people who have the skills and knowledge to rear queen bees and provide New Zealand with the genetic diversification to establish and restock existing and new hives.

The Primary ITO is committed to developing and formalising apiculture training to meet the needs of the industry. Further information about apiculture training will be available early in 2014.

About Primary ITO

On 1 October 2012, the Agriculture and Horticulture ITOs were merged to form the Primary Industry Training Organisation. The Primary ITO is also responsible for Water Industry Training, Equine Industry Training and NZ Sports Turf Training, making it one of the largest ITOs in New Zealand.
Primary ITO provides leadership in education and training, develops national qualifications, maintains national standards and provides ongoing support for their trainees and employers. Primary ITO training is subsidised by industry and Government.

For more information on Primary ITO please go to www.primaryito.ac.nz/

Swarming and supering

By Frank Lindsay, NBA Life Member

October is an important month in my beekeeping calendar, with the weather improving and temperatures reaching 20°C for the first time.

It's warm enough for queens to mate but we also see swarms issuing. Nectar is now coming in from the many trees and shrubs, stimulating brood rearing.

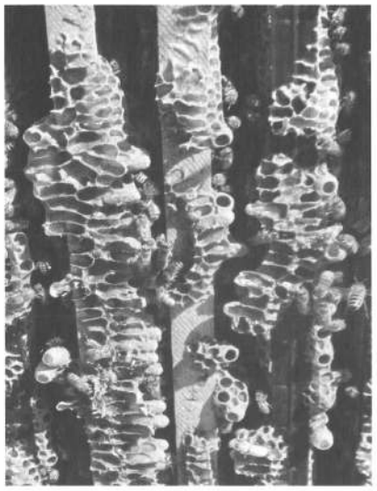
Those hives that received early varroa treatments, followed up with another treatment late into the autumn, are generally strong with the bees into the third super. Any stimulation from good sources of nectar and pollen could induce the swarming impulse and if not corrected in time, I will see bees hanging in trees. In my area (Wellington), the flowering of cabbage tree, hawthorn and barberry trigger swarming. Already some of these sources are budding up.

The queens are now laying full bore and are gradually working their way up into the top of the super. Any nectar brought in is packed around the top of the brood, cramping the queen's laying ability, but this can be corrected in one easy action by reversing the top and bottom supers. In this procedure there is only one provision to watch for: we do not want to split the brood nest. Some hives will have started laying downwards into the top half of the super below and if the hive bodies are reversed, this brood will be isolated from the rest of the brood now in the bottom super, which could see them chilled during a cold snap. It is better that this brood be repositioned on to the outside of the existing brood.

An alternative method is to take a full frame of brood (one where the brood reaches from the top to the bottom of the frame) from the now-bottom super and position it into the centre of this brood, thus creating a path up to the brood in the now-top super. The bees will quickly move up and clean out the bottom cells in these frames for the queen to lay in, thus creating an elliptical brood nest again.

Swarm control methods

Strong hives will have started to make 'play' queen cells along the bottom of the brood in the top super. Cut out or squash any that can't be seen when the super is tilted back, exposing the bottom bars. With these queen cell buds intact, it's easy to inspect the hive every 10 days for queen cell development by just splitting the top and second supers apart slightly, bringing the top super forward on the next one down so the front can be tipped back to expose the bottom bars. Now look in each of these queen cell buds for eggs or developing larvae. If you don't see any larvae all is well, so carefully lower the super back into position again after wafting some smoke over the frames to drive the bees up or down so they won't get squashed when the supers are joined again.



Queen cells developing under the honey super. Photo: Frank Lindsay.

Finding eggs or larvae in the queen cells means the hive is preparing to swarm. Something will need to be done to prevent the hive from swarming, which results in a loss of bees and very little surplus honey that season. Whatever you do, don't be tempted to cut out all the queen cells before you have checked a couple of brood frames and found eggs. You could have rolled the queen on the last inspection, damaging her or even killing

her, so the queen cells you are seeing could be the bees' attempt to replace the queen.

If eggs are present and you have queen cells developing, the hive is making swarm preparations. One of the easiest ways to prevent swarming is to reduce the population of the hive.

Find the queen so that you know where she is. If you can't find her, shake all the bees from the top super and place a queen excluder between the top and the next super down. Reassemble the hive and leave it for four days. Don't worry about the brood frames minus the bees; within half an hour, all the young nurse bees will have gone up through the queen excluder and covered the brood to keep it warm. In the meantime, the queen will have continued laying in the super she's in.

Now it's just a matter of opening the top super and looking for eggs in the cells closest to the emerging brood. Finding none confirms the queen is in the lower super, but check to make sure by placing the top super on the upturned roof next to the hive.

Now it's easy to make a four- or five-frame nucleus hive (two frames of pollen and honey and three frames of mostly emerging brood and an extra shake of bees) from the queenright section (the one the queen is in). Place these into another super with the queen. Take the largest queen cell, cut around it without damaging it and place the queen cell in the middle of the frame in the queenless section of the hive just into the brood area. This may mean you have to squash a few brood cells to make room, but it's better to kill a few bees in the brood rather than squeezing the queen cell between two frames and possibly damaging the developing queen.

Continued on page 51

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Reduce the number of queen cells in the nuc colony to just two and depending upon how the queen is laying and the amount of royal jelly under the young larvae, decide whether to leave a queen cell in the nuc as well to replace the old queen. If the brood has lots of missed cells, it indicates an old queen or one that is failing.

Now go through the original hive, frame by frame, inspecting each one and cutting out any queen cells. It may be necessary to shake most of the bees off the frames as the bees hide queen cells in some unusual places and if a late developing cell is missed, the hive could still swarm.

Reassemble both hives, making sure each half has a good number of honey frames and the brood is compacted into the middle of the supers. Move the nuc section (with the old queen) to sit beside the original hive. Block the entrance with grass to prevent any bees returning to the original hive. This should reduce crowding in the hive, thus eliminating the bees' urge to swarm.

Another method of preventing swarming is to create a nuc with a ripe queen cell and move this away to another apiary, or place the nuc in the shade and release at the end of the day. Depending upon the age of the queen cell and the weather, the new queen should be laying in two weeks.

A third method to reduce a hive's population is to swap the complete hive with a weaker hive. The field bees know their own hive's location and go straight in without fighting.

Leave the hives alone for three weeks then on a sunny warm day, quietly open the original hive, remove an outside frame and look in the centre of a middle frames for eggs. Hopefully all will have gone well and you will see eggs. If not, leave the hive for another week before checking again. If you still don't see eggs, then consider the new queen has been lost. Recombine the nuc back on top of the original hive by placing two sheets of newsprint between the top super and the nuc super so there is a slow introduction.

In the meantime, continue looking for queen cells in your later-developing hives so they don't swarm. Commercial beekeepers do the same to all their hives in an apiary. Once one starts swarm preparations, all the hives are treated the same. All hives are equalled up by transferring emerging brood frames (after checking them all for AFB). Any brood frames left over will be made into nucs or moved to the next bee yard, where they repeat the same operation until all their hives are at the same rate of development. This way they do the same procedure to each hive on their next visit, be it checking for queen cells (splitting the hive) and perhaps adding another super.

Supering up

When the bees in a hive are just about covering all frames (look from the top and tilt the hive back and look under the bottom super to check that the bees are covering most of the frame below as well), place another super on the hive.

If you only have foundation frames, take two frames from positions 2 and 9 from the top super (if the super has 10 frames) and place these frames into the centre of the new super. Put foundation frames on either side of these and back into the empty spaces in the super below.

As the bees build out the foundation frames, move one on either side out one and replace it with an outer one until all are drawn out.

As soon as you see white wax being produced in the middle frames of the top super, add more supers (for those with drawn frames) or continue to get the foundation frames drawn out. In a heavy flow, a strong hive can draw out a super of foundation in a week.

Things to do this month

Check food: feed sugar when there are only three frames of honey left in a hive (a week's supply for a strong hive). Check pollen: look for a ring of pollen around the brood nest.

Check that hive stands are sound—they will carry a lot of weight when the hives are full of honey. Check for AFB: check all frames!

Raise queen cells. Requeen hives with mated queens or introduce a nuc to a weak hive after removing the old queen.

Undertake swarm control measures: reverse supers and remove frames of emerging brood. Cull out old frames on the edge of the brood nest and replace with one or two frames of foundation. Replace any supers that are starting to rot away in the corners.

Check for mites. Verify your treatments are working by removing 50–100 drone brood at the pink-eye stage with a cappings fork, or do a sugar shake. (After the first shake, add more sugar and shake three or four times, as not all mites are removed on the first shake).

Check your stored honey supers for wax moth. Have all your new gear ready for the honey flow. Super hives on early flows.

Geoff and Adam looking for the beehives following the wind storm on Tuesday, 10 September 2013. Photo courtesy of Geoff Bongard, Ashburton Apiaries Ltd.

NBA values beekeeping clubs

By Ricki Leahy, NBA President

Beekeeping clubs have many important functions, and the NBA would like to encourage clubs to become NBA members.

Many hobbyists just starting out with only an interest in bees and wanting to 'give it a go' can't sometimes afford the full NBA subscription, or indeed understand the advantages, and find the cost of joining a club more affordable. This puts them in contact with others in similar beekeeping stages and makes an ideal entry point for them into beekeeping. The advantage to the NBA—and indeed to all other beekeepers—is that the basic knowledge needed (concerning, for instance, disease control and compliance issues) can be passed on to these budding beekeepers.

Generally it may be expected that any hobbyist, as they build up more hives, in time may join the NBA in their own right. Apart from anything else, individual members receive their personal copy of *The New Zealand BeeKeeper* journal and enjoy all the other advantages that NBA membership delivers. Having joined the NBA, they may also choose to remain as members of their club as many of us do.

To simplify things, beekeeping clubs can now join for just $200 (including GST) as a flat rate, no matter how many members they have. Clubs will receive two full journal subscriptions and also are entitled to have two votes when participating in NBA policy matters. Clubs affiliated with the NBA will also have a promotional spot in both the journal and on the NBA website to advertise their contact details and activities. *NB: no NBA membership discounts are offered to the members of clubs. Also, please note that it is the club that is the member of the NBA, not the actual club members.* It is through the club that those club members gain support and advocacy from the NBA.

Sometimes it's hard to understand the relevance of all this advocacy stuff, especially if you only have a couple of hives in the back garden. But please be assured that we are continually faced with issues to protect the environment in which we all keep our bees. These lobbying and submitting tasks are mostly undertaken on a volunteer basis. Having your club be a member of the NBA keeps us all in a 'beekeeping family', giving us an affiliated voice supporting the beneficial work often undertaken for the good of all beekeepers. We recognise the importance to all beekeepers of being kept well informed. Let's all support each other.

Membership benefits for clubs

Club contact details will be posted on the NBA website.

Clubs may advertise their contact details in both the April and October issues of *The New Zealand BeeKeeper*, which are sent to all registered beekeepers. There is no better way to let other beekeepers in your area know about you. *Please note: clubs that choose not to become NBA members will no longer gain this benefit as some do now.*

Clubs may purchase the *Control of Varroa, AFB Elimination Manual* and *Starting with Bees* books at a reduced bulk price for their members.

The NBA can advocate on the clubs' behalf as they do for any other NBA members.

Clubs will be welcomed to submit suitable articles to the journal to contribute more relevancy for the hobbyist beekeeper.

Clubs will receive advice on beekeeping matters; i.e., help you to find references for certain information.

The NBA's mission is to help protect and promote beekeeping in New Zealand for the benefit of all members and those associated with the bee products industry.

Who do you call?

Recently the Secretariat has been receiving a lot of calls regarding hive registration and pest management issues, most of which we are unable to answer as those issues are dealt with by other entities. So, to make it easier for you to know who to call for what we thought we would give you an easy reference guide.

AFB RECOGNITION COURSES

Rex Baynes – Manager, AFB NPMP
PO Box 44282
Lower Hutt 5040
www.afb.org.nz
Ph: (04) 566 0773

Email: rbaynes@ihug.co.nz
or info@afb.org.nz

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- AFB Destruction
- AFB Finds

see page 45 for more AsureQuality contacts.

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: Chris & Desarae Williams
Phone: 09 436 2729
Ed Harding, Phone: 09 438 3962
Kevin & Melissa Wallace
Mobile: 021 422 885
Email: secretary@whangareibeeclub.co.nz
whangareibeeclub@xtra.co.nz

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: president@waikatobeekeepers.org.nz
Maryanne Partridge, Secretary, Phone: 07 825 2691
Email: secretary@waikatobeekeepers.org.nz
Website: www.waikatobeekeepers.org.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

WELLINGTON BEEKEEPERS ASSOCIATION
Meets first Wednesday of the month (except January) at 7 pm (beginners), 7:30 pm (main meeting) in the Johnsonville Community Centre, Main Hall, Moorefield Road, Johnsonville. All welcome.

Contact: Richard Braczek, Chairman
5 Tyndall St., Waiwhetu, Lower Hutt 5010
Email: ibraczek@paradise.net.nz
Suzanne Basiora, Secretary
26 Glen Rd., Raumati South, Paraparaumu
Ph: 04 904 2365
Email: sbasiora@gmail.com

SOUTH CANTERBURY REGION
Contact: Peter Lyttle
Phone: 03 693 9189

CENTRAL OTAGO REGION
Contact: Nick Loughnan
Email: cobeekeepers@actrix.co.nz
Jo Boyd
Email: sunvale.meadows@xtra.co.nz

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

Contact: Tudor Caradoc-Davies, Secretary
Mobile: 027 208 5133
Email: secretary@dunedinbeekeepersclub.org
Website: http://dunedinbeekeepersclub.org

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

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

Contact: Kim Kneijber
Phone: 09 418 1302
Email: kimk_bees@hotmail.com
Carol Downer
09 376 6376
thefairy@xtra.co.nz

NB: All correspondence to be directed to
PO Box 44-427
Pt Chevalier
Auckland 1022

Website: www.aucklandbeekeepersclub.org.nz

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

Contact: Deanna Corbett, Branch Secretary
Home Phone: 06 876 8852
Email: djcorbett@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

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

Contact: Matthew Telfer, Chairman
Phone: 021 0273 2875
Email: matt@manawatubeeclub.org.nz
Mali Swanney, Secretary & Media Liaison
Email: secretary@manawatubeeclub.org.nz
(NB: Preferred address for email correspondence)
Mobile: 021 0225 4124
Phone: 06 376 8247
Mailing address: PO Box 4103, Manawatu Mail Centre, Palmerston North 4442

NELSON BEEKEEPING CLUB
Meets first Wednesday of every month, 7–9 pm
Waimea Lounge, Richmond Park Showgrounds
Lower Queen Street, Richmond.
Contact: Ian Henbrey, Secretary
Ph: 03 544 9737 / 021 172 4181
Email: tasmanbees@gmail.com
www.nelsonbeekeepers.org.nz

CHRISTCHURCH HOBBYIST BEEKEEPERS' CLUB
Meets on the first Saturday of each month, August to May, except January for which it is the second 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

UMF HONEY ASSOCIATION

P O Box 19348, Hamilton
Website: www.umf.org.nz

Contact: John Rawcliffe, General Manager
PO Box 125217, St Heliers, Auckland
Phone: 09 575 3127
Cellphone: 027 441 8508
Email: enquiry@umf.org.nz

NZ QUEEN PRODUCERS ASSOCIATION

Contact: Russell Berry
Phone: 07 366 6111

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: graham@thewheelers.co.nz

Website: http://www.franklinbees.co.nz/

ROTORUA HONEY BEE CLUB
Meets monthly on a Sunday, 2 pm. Meeting details listed in club's newsletter and vary according to speakers' availability.

Contact: Kim Poynter, President
374B Hamurana Rd, R D 7, Rotorua 3097
Email: birchwoodfarm@xtra.co.nz
Phone: 021 926 937
Jude Thomas, Secretary
4 Rika Pl, Kawaha Pt, Rotorua 3010
Email: jude.ken@xtra.co.nz
Phone: 07 348 6227

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

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

Contacts: Rusty Barrett, Chairman
Phone: 06 362 6950
Sheree Bishop, Secretary
Phone: 021 298 2801
Email: thebuzzclubotaki@gmail.com

MARLBOROUGH BEEKEEPERS CLUB
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: amanda.biddington@gmail.com

NORTH CANTERBURY BEEKEEPERS CLUB
Meets the second Sunday, August to April inclusive, at the club hive, 176 Giles Rd., Clarkville, at 1 pm. Confirmation published on the website after 11 am on each meeting day.

Contact: Mrs Noeline Hobson
4/76 Tennyson St., Sydenham, Christchurch 8023
Phone/fax: 03 337 3587, Mobile: 021 2112 655
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Contact: John Wright
Phone: 09 236 0628

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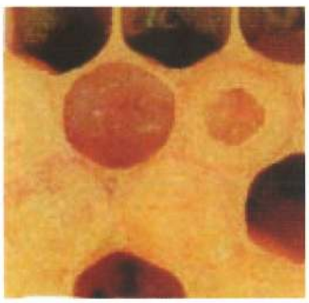
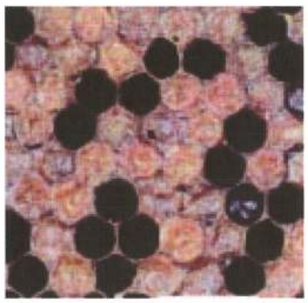
If your details have changed, please email editor@nba.org.nz and secretary@nba.org.nz so that we can update your details in the journal and on the NBA website www.nba.org.nz.

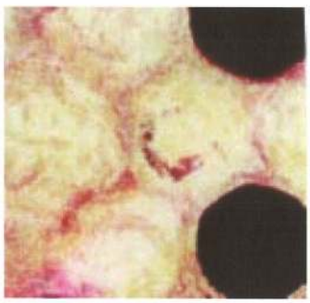
AFB RECOGNITION & COMPETENCY TEST PHOTOS



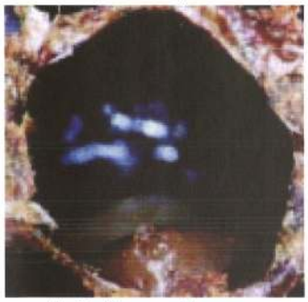
Unfinished cappings of healthy brood (yellowed)



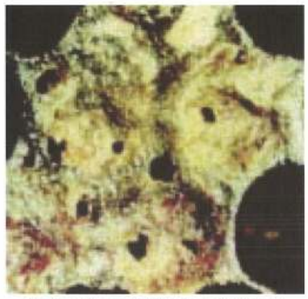
Cappings of brood infected with AFB



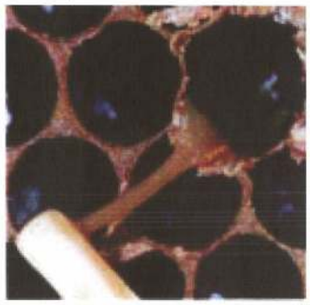
Bee chewing apart prior to emerging



AFB diseased larvae



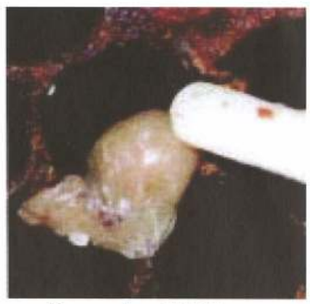
Holes in cappings of brood infected with AFB



AFB "ropiness" test

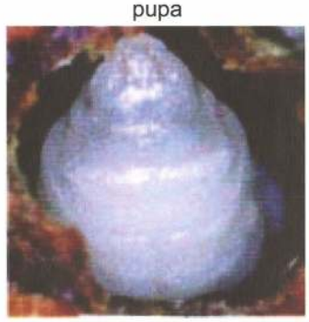
PMS larva with varroa

AFB—older, darker, diseased pupa



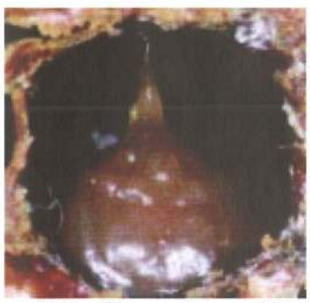
Removing PMS larva

Chalkbrood—white mummy

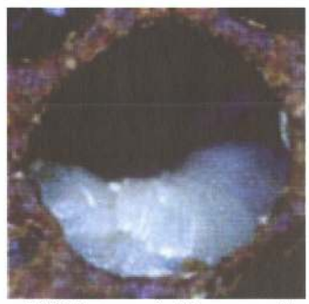


Healthy prepupa

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.

360ml Round Pot

500gm Round Jar

340gm Round Jar
(coming soon)

250gm Round Jar

2kg Hex Jar

1kg Hex Jar

500gm Hex Jar

250gm Hex Jar

2kg Square Jar

1kg Square Jar

500gm Square Jar

250gm Square Jar

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