October 2014, Volume 22 No. 9

The NEW ZEALAND BeeKeeper

AFB smartphone app by Xmas

- Focus on AFB and exotic diseases
- Industry unity • Bee Aware Month update

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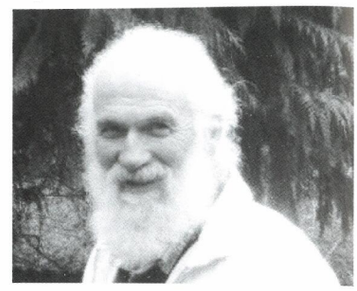
Front cover: Brice Horner using the new smartphone application he is developing for the AFB PMP Management Agency to assist beekeepers to identify AFB in the field. See article on page 16.. Photo courtesy of AFB PMP Management Agency.

'Considered approach' to industry unity

By Ricki Leahy, NBA President



It's been a very busy month for the Executive Council, with lots happening. A face-to-face meeting was held on the afternoon of the 19 August, along with a full day the next day.

This gave us plenty of time to consider the results of the Apicultural Industry Structure Survey that was sent out to members. It was clear that members want unity between the NBA and Federated Farmers Bee Industry Group (BIG).

The NBA Executive has chosen to take a considered approach. We understand that unity needs to include the whole industry, and if we move too fast we will run the risk of leaving people and/or sectors behind. We all need to be patient and realise that any proposed unification changes will be the most important single issue that will affect our association, so it's important we all 'get on board' and get it right.

The Executive unanimously voted in favour of forming a Working Group and inviting appropriately skilled NBA, BIG and other industry members to explore the detail of how the industry will unite. At the time of writing this report, the Interim Working Group has had its first meeting and is in the process of establishing the makeup of the full Industry Working Group. I suspect it will take a little time to negotiate ourselves onto the same pathway and then—and only then—can we all genuinely work positively together to build a structure for those 'visions of the future'. *[Editor's note: for further information, go to page 37 for a report from the NOM11 committee.]*

Discussions with MPI Deputy D-G

It was a pleasure for the Executive Council to welcome Scott Gallacher of the Regulation and Assurance Branch and Deputy Director-General of the Ministry for Primary Industries, as a guest to our meeting. His attendance gave us the opportunity to build our working relationship with MPI by creating a better understanding of issues through frank and open discussion.

A variety of issues were discussed, including the hot topic of honey imports and the value of bees to the New Zealand economy. We talked about how the essence of the Biosecurity Act is to retain our pest-free environment, so market access should not be a key factor regarding the Import Health Standards. We also talked about how the importation of honey from the Pacific Islands is identified as a risk pathway due to the limited biosecurity there, which in turn our biosecurity ultimately depends on. Amongst other things, we had a good discussion about the compliance issues of transporting honey around the country. However, we did emphasise that the NBA strongly supports the traceability of our products.

Scott was pleased that progress was being made towards unification. He noted that it is difficult for MPI to converse with several parties, as it entails a long and convoluted process for conversations. It would be advantageous if there were only one organisation to have strategic conversations in a constructive and timely manner. It is less strategic to have a fragmented industry.

Migrant beekeepers

It has been drawn to our attention that there is some concern regarding standards of expertise of overseas beekeepers seeking employment in, and applying for immigration to, New Zealand under Immigration New Zealand's Immediate Skill Shortage List (ISSL). The NBA has sent a submission on the review of the qualifications for Apiarist on the ISSL.

At present, all prospects need to have certain qualifications but in reality may have only a minimal amount of practical experience; hence the concern. Many very experienced beekeepers with no academic qualifications are being denied consideration. We all know that practical experience accounts for everything when working hives in a commercial environment. We are recommending that as well as any qualification criteria in place, beekeepers should be equally eligible if they have at least five years' experience of commercial beekeeping, which can be backed by verified references and testimonials from previous employers.

We have further recommended that on commencement of employment with a New Zealand company, migrant beekeepers should be enrolled and participate in a Primary ITO Level Two apicultural course. The purpose is to ensure that all overseas beekeepers working in New Zealand are fully conversant with New Zealand beekeeping methods and, most importantly, understand the unique way that we deal with AFB. A letter of support from Kevin Bryant (the CEO of Primary ITO) accompanied our submission.

However, it could quite understandably be impractical to have conditions in place after the migrant's entry into the country. Warren Sloane of Immigration New Zealand suggests that it is up to industry to make recommendations or inform members of industry-relevant matters. A lot of us may be quite good at what we do but totally fail when it comes to training staff, often because we are perpetually caught up in the moment.

The course is over two-thirds subsidised for those employed in the beekeeping industry and is a great way to create consistency of practice within the industry. I have heard some great feedback from employers who have put staff through the course with their beekeepers becoming much more attentive to detail, more caring and having more enthusiasm about their job, all because they have a better understanding of the 'reason' and are thereby stimulated to learn more. (For more information, contact Primary ITO on 0800 20 80 20 or www.primaryito.ac.nz)

At last we see the drones popping their heads out again, so now we can roll our sleeves up and get on with the season in earnest. What would we do without the drones?
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AFB PMP report, 1 July 2013–30 June 2014

By Rex Baynes, AFB PMP Manager

The following report was presented on 26 June 2014 to the Annual General Meeting of the National Beekeepers' Association (Inc.) of New Zealand at its annual conference in Wanganui.

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 PMP, and went through the process of having the plan approved by government.

The Management Agency for the AFB PMP is the NBA. The NBA has a statutory responsibility to implement the AFB PMP, 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

Governance document

In late May 2014 a governance document setting out general operational guidelines between the NBA (Inc) and the Management Agency was signed by the respective chairpersons.

The document establishes, for example:

- Terms of Reference
- Management Agency Appointments
- Chairman Appointments
- Chairman Responsibilities
- Remuneration
- Manager Appointment and Performance
- Reports
- Management Board Performance Review.

One significant change is that the board will now be termed the AFB PMP Management Board.

Beekeeper, apiary and hive numbers

As at 20 June 2014 there were 4,830 registered beekeepers operating 505,315 hives on 30,688 registered apiaries. Comparisons can be made by referring to the table below.

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 with city dwellers.

A table detailing the above is attached as part of this report. *[Editor's note: this table does not appear in the journal.]*

Total reported American foulbrood

There has been an increase of some 50,000 hives in the last 12 months with an annual reported AFB disease rate sitting at 0.22% of hives. ➔

	2000	2002	2004	2006	2008	2010 (30 June)	2011 (20 June)	2012 (13 June)	2013 (15 June)	2014 (20 June)
Registered Beekeepers	4,864	3,973	3,211	2,694	2,589	2,957	3,265	3,806	4,273	4,830
Number of Apiaries	21,633	20,258	19,592	18,954	20,439	22,440	23,356	25,253	27,142	30,688
Number of Beehives	299,712	305,152	292,530	300,728	343,155	376,672	391,540	422,728	453,820	505,315

Year	AFB Cases (Reported)	Number of Apiaries	Percentage
2005–2006	952	482	0.32%
2006–2007	952	540	0.30%
2007–2008	980	552	0.27%
2008–2009	1,117	557	0.32%
2009–2010	515	348	0.27%
2010–2011	1,093	579	0.28%
2011–2012	762	499	0.18%
2012–2013	1,128	582	0.25%
2013–2014	1,099	597	0.22%

Disease reports

Between 1 June 2013 and 31 May 2014, 1099 cases of AFB were found by beekeepers and/or AsureQuality staff in 597 apiaries. This is an average disease rate of 0.22% of hives.

Disease Elimination Conformity Agreements (DECA)

As at 20 June 2014, 2970 beekeepers hold a DECA.

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

As at 20 June 2014, 76% of beekeepers who hold a Certificate of Inspection, in other words non-DECA holders, have had their hives inspected. This is an excellent result, especially given increases in beekeeper numbers over the last several years.

From the following table it is noted the Management Agency has made significant inroads in the last four years in 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.

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

Compliance levels continue to sit around 90% plus, as has been the case for several years. This is especially gratifying given the continued upward trend in beekeeper numbers.

DVD/Video on the eradication of AFB in New Zealand

The Management Agency has, with financial assistance from AGMARDT, retained the services of Plant and Food Research (Multimedia Production Division), in particular Dr Mark Goodwin, to prepare for the industry a DVD addressing the eradication of AFB in New Zealand. The DVD will also include a component addressing tutin management. It is to be noted this latter element is not funded by the Management Agency.

The DVD in draft form has been presented to the Management Agency and is currently being reviewed by members.

The DVD is formatted in modular form and will be available in that format on both the website, training PowerPoint presentation and on disk. It is intended all registered beekeepers will receive an individual copy.

The Management Agency believes that in order to control and eliminate AFB in managed colonies, early intervention as a result of better beekeeping practices developed through effective training using a DVD as part of its training resource is essential.

Website upgrade

The website upgrade is now virtually completed; however, an integral part is the inclusion of the DVD (as above). Once that has been signed off, the website will be up and running.

The intention is for the site to be a 'one-stop shop' for matters relating to AFB.

Development of iPhone/smartphone application

The Management Agency is in the early stages of developing an 'app' to assist beekeepers with identifying AFB in the field.

Dedicated AFB inspectors

The Management Agency, through its responsible financial management, is in a position to meet commitments made to beekeepers to allocate greater funding to AFB inspection-related work. We now have 26 individuals that we consider to be dedicated AFB inspectors undertaking regular inspections nationwide. The inspectors take their instruction directly from either the Manager or, as is normally the case, their regional AsureQuality representative. It must be noted that it has been made absolutely clear to inspectors that any departure from the above will result in their

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	77%
2012 (June)	1561	2362	16773	70%
2013 (May)	1771	2772	21017	72%
2014 (27 June)	2,002	3271	30264	-

work with the Management Agency being terminated with immediate effect.

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

It would appear that this dedicated inspector initiative is finding favour within the industry.

South Island beekeeper investigated under Biosecurity Act 1993

As was reported in the April 2014 issue of *The New Zealand BeeKeeper*, a South Island beekeeper and his beekeeping operation were recently investigated under the powers of the Biosecurity Act 1993 resulting in his beekeeping storage premises being subject to a Restricted Place Notice. In addition, his AFB-infected gear and associated material found at the premises were seized and destroyed by burning by an Authorised Person. It became necessary for MPI to be involved because of the beekeeper's reluctance to respond to our correspondence.

The above action was deemed necessary through an inability to comply with the AFB PMP; in particular:

- failure to keep hives in registered sites
- failure to report AFB infected hives
- failure to destroy AFB infected within 7 days of finding
- failure to comply with Notices of Direction to destroy AFB-infected hives
- failure to fill in an Annual Disease Return and Certificate of Inspection.

Full cost recovery under the Order is being sought and if necessary will be progressed through the courts.

Official Information Act 1982

The Management Agency receives from time to time requests for information relating to apiary locations held on the apiary data base.

The Management Agency, supported by legal advice, treats all information supplied to it by beekeepers in the strictest of confidence and considers that the privacy of beekeepers is absolutely paramount.

Infringement notices/fines

In the April 2014 issue of *The New Zealand BeeKeeper*, I reported that the Management Agency had received an invitation from MPI (Legal Division) to make a submission regarding the introduction of infringement notices and instant fines for breaches of the AFB PMP.

Representatives of the Management Agency met with MPI officials in November 2013 and subsequently responded in writing with various suggestions.

In determining what offences by way of the Order in Council fall into the "infringement notice" category we were guided by the following criteria as laid down by MPI:

- offences that are considered as being straightforward
- offences regarded as being relatively minor by nature
- offences that we might consider being of a persistent nature.

Discussions are ongoing and we await further advice on progress from MPI.

Operations Manual

Work is under way in developing a revised Operations Manual that will be underpinned by a number of clearly defined policy statements. The latter are currently being worked on, with some 14 policies already signed off and in place.

Acknowledgement

I am very fortunate to have a strongly committed management board who provide governance and direction to an extremely high level. I wish to place on record my sincere thanks and appreciation for their ongoing support.

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.

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.]

Don't let EFB get into NZ!

By Marco Gonzalez, Apicultural Officer, AsureQuality Limited, Lincoln. E-mail Marco.Gonzalez@asurequality.com

European foulbrood (EFB) does not exclusively come from Europe, nor does American foulbrood (AFB) come only from America. Their respective names actually appeared in 1906, when scientists established they were different diseases. EFB was studied in Europe, and AFB in America.

European foulbrood is a disease that affects the honey bees before the capped stage and causes most of the larvae to die. It is caused by the bacterium *Melissococcus plutonius.* Larvae are infected through ingestion of the bacteria with brood food. The bacteria then multiply quickly in the larval gut, competing with the larvae for available food. Infected larvae usually die from starvation on the fourth day of infection before they are capped (pre-pupal stage).

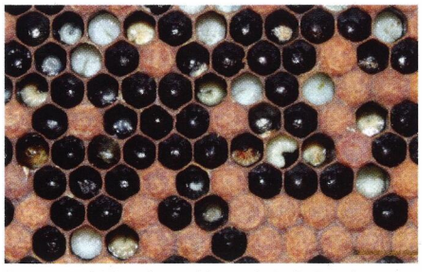


Figure 1: EFB-infected brood (Rob Snyder).

In endemic areas, infected hives may be asymptomatic with sporadic occurrences of the disease. The seasonality of EFB depends on the strength and the health of the hive. When the nurse bee to larvae ratio is good, enough brood food can be provided to infected larvae and most of them will survive. Signs of the disease may also disappear at the onset of a strong honey flow. Therefore, EFB is more likely to affect hives in spring and early summer.

Figure 2: EFB-infected larva (Michael Wilson, University of Tennessee).

Getting ready to spot (and report) EFB

EFB may be difficult to identify in an apiary. Whilst disease in the colony may lead to suspicions of EFB, laboratory tests are required for confirmation. Nevertheless, beekeepers must be ready to recognise suspect cells. Table 1 on page 12 will refresh your knowledge about brood diseases and is useful for field diagnosis.

If beekeepers suspect that their hives have EFB, or other exotic pests or diseases they should report these findings **immediately** through the **0800 80 99 66 MPI Hotline.** An AsureQuality Ltd Apiculture officer will follow up on every report, if requested to do so by MPI. The officer may arrange for samples of diseased larvae to be sent to MPI's Investigation and Diagnostic Centre in Wallaceville to test for *M. plutonius,* the bacterium that causes EFB, as well as other exotic bee diseases, as appropriate. Technicians may examine stained smears under the microscope, attempt bacterial culture and use PCR (polymerase chain reaction) to positively identify the bacterium.

Whilst diagnosis is being finalised, beekeepers must also prevent further contamination and therefore follow the same hygienic process as for AFB. Scorch your hive tools and wash your hands or gloves and smoker bellows with soapy water. Mark the suspect hive and reduce the size of the beehive entrance to prevent robbing if necessary.

Distribution and transmission

EFB is present in almost all countries with honey bees, but has not been identified yet in New Zealand, Western Australia or most of the Pacific Island countries (see Figure 3). Various controls are in place to try and prevent introduction of EFB. These include the import health standards which prevent imports of beekeeping equipment and bee products from a number of countries. However, when these controls are breached EFB could reach New Zealand through illegally imported used and contaminated bee equipment or bee products or queen bees brought in by beekeepers. There is an awareness of swarms of bees associated with imported containers or shipping cargos; however, these still remain a risk. The bacteria causing EFB remains highly contagious for up to three years in infected brood comb, even although the EFB bacteria does not have a spore stage.

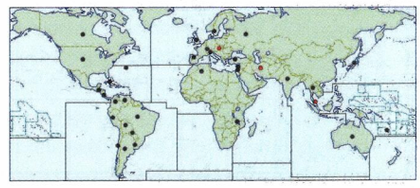


Figure 3: Worldwide distribution of European Foulbrood (www.cabi.org).

Once in New Zealand, EFB could be spread by:

- robbed infected hives or swarms
- transfer of infected bees, honey supers and combs to clean hives
- use of contaminated beekeeping equipment
- infected honey and pollen fed to the bees
- varroa mites—recent research confirms that varroa can transfer EFB from one bee to another: http://beeinformed.org/2013/04/european-foulbrood-efb-identification/

To attempt eradication, it is crucial to identify EFB as soon as possible. Beekeepers are →

Table 1: Features of main brood diseases (Marco Gonzalez, AsureQuality).

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

the first line of defence and must check their hives often and report any suspicious cases. Actions such as recording all your hive movements will also help with defining risk areas if EFB was confirmed.

Disease control

Chemical treatment

The antibiotic oxytetracycline HCL soluble powder (OTC), sold under the name Terramycin, is the main chemical treatment available to overseas beekeepers to prevent and or control EFB. The use of this antibiotic is becoming less attractive to beekeepers because of the possibility of honey contamination and the development of resistant strains of EFB. Prophylactic treatments are not recommended as they lead to resistant strains of bacteria. It is illegal to feed antibiotics to control bacterial bee diseases in New Zealand.

Management practices

Good beehive management reduces the probability of infection if exposure were to occur. A well managed, stress-free colony may in fact be resistant from infection from EFB; therefore all practices that prevent the bees from being under pressure are encouraged. What can you do?

- Requeen often in order to break the brood cycle and have a more prolific queen.
- Shift bees with care (for example, at night with an open entrance), as it is one of the main causes of stress.
- Maintain good hive hygiene: replace brood comb often to remove the disease agent from the brood nest.
- Maintain nutrition: bees need a good supply of pollen for a healthy nutritional balance.
- Don't reuse old gear such as old frames (that may be infected with EFB): burn it to break the infection cycle.

Shook swarming can be a cost-efficient way to treat EFB but is forbidden in New Zealand for AFB control.

Impact on the New Zealand beekeeping industry

New Zealand bees are likely to be highly susceptible to EFB, as they have never been exposed to this disease before. The best overseas treatment available seems to be a mixture of removing infected gear and shaking bees into clean hives (shook swarming), and administering antibiotics. Both these methods raise issues in New Zealand as they are forbidden under the National AFB Pest Management Plan. Use of antibiotics could potentially affect the quality of New Zealand honey and also access to international markets.

The best defence is to keep the country free of EFB and to be very responsive in case of any outbreak. Keeping good records of hive movements and readily reporting suspicious cases are the main ways we can prevent establishment and spread of new honey bee pests and diseases in New Zealand.

Sources and further reading

Goodwin, M. (2006). *Elimination of American foulbrood disease without the use of drugs.* Revised edition. Wellington: National Beekeepers' Association of New Zealand (Inc.) Available to order from http://nba.org.nz/publications

Pharo, H. J. (2006). Risk of European foulbrood in imported honey bee products. Available online at: http://www.sciquest.org.nz/node/64213

Bee Informed Partnership. (2013). European Foulbrood (EFB) Part 2. Available online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221155/bee-health-consult-efbprofile-20130110.pdf

Wilson, M., & Skinner, J. (2009). European foulbrood: A bacterial disease affecting honey bee brood. Available online at: http://www.extension.org/pages/23693/european-foulbrood:-a-bacterial-disease-affecting-honey-bee-brood#.U08WNqJpcj4

Somerville, D. (2012). European foulbrood and its control, New South Wales Department of Primary Industries factsheet. Available online at: http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0010/333388/European-foulbrood-and-its-control.pdf

According to the website Mieli d'Italia, an outbreak of SHB has been reported in the province of Reggio Calabria. To read the report (dated September 12, 2014), go to http://tinyurl.com/o4vqwen and use Google Translate (or similar) to translate from the Italian.

Beekeeping and the law

New Zealand beekeepers have a number of legal obligations that must be met regarding American foulbrood disease. In summary, the most important of these obligations are to:

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

Under certain conditions there are some exemptions for these obligations.

[Excerpted from the revised edition of *Elimination of American Foulbrood Disease without the use of Drugs—a practical manual for beekeepers,* by Dr Mark Goodwin, page 89.]

Proposed AFB PMP budget 2015/2016

The input of beekeepers is sought on the proposed AFB PMP 2015/2016 Operational Budget.

The budget covers the period 1 June 2015 through 30 May 2016.

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 2014 to:

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

Proposed AFB PMP Operational Budget 2015–2016

Income:	Penalty on levy	$8,000.00	
	AFB PMP levy	$490,000.00	
	Bad debts recovered	$5,000.00	
	Interest received	$10,500.00	
	Total Income		$513,500.00
Expenditure:	Accounting and reporting	$6,000.00	
	Aerial surveillance	$5,000.00	
	ADR administration	$13,000.00	
	ADR (AsureQuality)	$45,800.00	
	AFB Recognition Courses	$10,000.00	
	AFB counselling (AsureQuality)	$6,000.00	
	AFB counselling and audit administration	$5,000.00	
	AFB apiary/hive inspections	$202,000.00	
	AP2 recruitment and training	$9,500.00	
	Apiary database upgrade	$5,000.00	
	Audit fees (Rodewald Hart Brown Ltd)	$5,800.00	
	Bad debts written off	$9,000.00	
	Bank fees	$50.00	
	Beekeeper communication	$500.00	
	Beekeeper education	$1,800.00	
	Certificate of Inspection administration	$9,000.00	
	Certificate of Inspection (AsureQuality)	$18,500.00	
	Conference attendance	$1,000.00	
	Debt collection expenses (Legal)	$12,000.00	
	Disease Elimination Conformity Agreement (AsureQuality)	$15,500.00	
	Disease Elimination Conformity Agreement (Administration)	$6,000.00	
	Honoraria	$11,500.00	
	DVD/Video	$12,000.00	
	iPhone application development	$7,000.00	
	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)	$1,000.00	
	Insurance	$900.00	
	Legal expenses	$4,500.00	
	NBA Journal (April and October issues: Postage)	$6,500.00	
	Management Agency appointments	$1,500.00	
	Manager regional visits	$5,500.00	
	Management Agency meeting expenses	$8,000.00	
	Official Information Act Requests	$1,500.00	
	Postage, printing and stationery	$21,500.00	
	Reporting to Government	$1,000.00	
	Telephone	$4,500.00	
	Travel and accommodation	$4,500.00	
	Website	$5,000.00	
	Total Expenditure		$503,350.00
	Surplus		**$10,150.00**

AFB smartphone app on the way

By Rex Baynes, AFB PMP Manager

During planning and the upgrade of the AFB Management Agency website, a requirement was identified for a user-friendly smartphone application to assist in the field diagnosis of AFB.

The task of developing the application was given to one of the website advisors, Brice Horner. Brice is an apiculture tutor based in Otago.

The intention is to produce a stand-alone app that runs on both iPhone and Android operating systems. Once downloaded, users will be able to run the app on either smartphones or tablets, without the need for a data connection. This will be very useful for those beekeepers operating in the rural environment.

How it works

The app will run users through a diagnostic procedure, showing in detail the relevant visual symptoms of AFB. Additional screens provide instructions on how to correctly diagnose the symptoms. Users will next be asked to confirm that they are, or are not, seeing the relevant symptom in their hive. If they are, they click 'YES'. If they do not identify the symptom, they click 'NO'.

Symptoms have a 'score' allocated to them. These scores are added towards a final result. At the end of the app users will go to a 'Results' page. On this page will be displayed the result determined from the user's input. It will state either that the inspected hive does have AFB or that it does not.

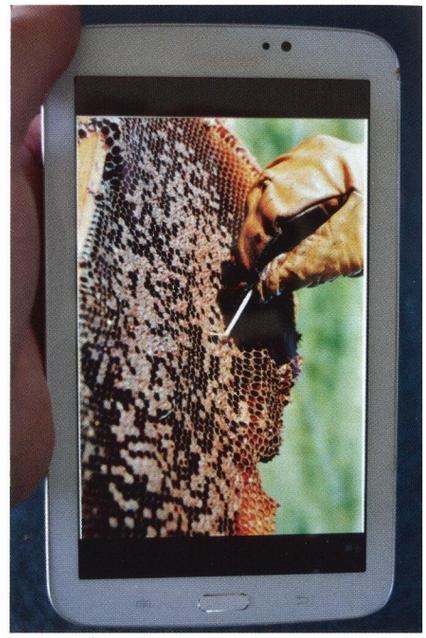
Following this will be additional instructions on what the beekeeper should do if the hive is infected with AFB.

Development of the application

An underlying principle in developing the application has been to keep it simple and user friendly. This, however, is often easier said than done. There is always the temptation to add more and more information, thereby quickly complicating the process and adding greatly to the cost. Significant effort has gone into avoiding this and making the application as simple and 'field friendly' as possible. Much of the initial development therefore centred on what to exclude rather than what to include.

The first phase involved thrashing out the concept and completing initial 'storyboards'. This was followed by a round of meetings with prospective software developers, the AFB Management Agency and relevant industry players. Key amongst these were the discussions with Mark Goodwin and Byron Taylor, revolving around the importance of the visual symptoms that would be included in the app and their weighting, relevant to the final results.

The next phase will involve finalising the content and signing off with the Management Agency, before forwarding the product to the chosen developer for completion. It is hoped that rollout of the first version can be achieved by Christmas 2014. Updates will be pushed out if and when required.



A disease symptom as displayed by the app. Photo: Brice Horner.

Trial period

Following initial rollout, there will be a trial period to monitor both the app's technical efficiency and any user feedback. It is important to both the developer and Management Agency that as many beekeepers as possible download the app and give it a go. Any feedback (either positive or negative), can be left on the AFB website www.afb.org.nz

Video: Preventing Toxic Honey

The Bee Products Standards Council (BPSC) has released a video about preventing toxic honey caused when bees collect from tutu bushes during the summer.

This is an important video that all beekeepers and especially newcomers in the industry should have viewed.

This video is available on the BPSC website (www.bpsc.org.nz) or directly on YouTube at: http://youtu.be/ZO-Loed8pWw

The BPSC is very grateful for the contributions received from beekeepers to fund this video and in particular, the members of the Hawke's Bay Branch of the NBA.

AFB Recognition Courses planned for 2014

By Rex Baynes, AFB PMP 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.

Cromwell: 18 October (Saturday)
This course has been deferred and will be run in early 2015.
Beekeepers in the wider Cromwell area will be contacted by a separate mailing.

Longburn (Palmerston North): 25 October (Saturday)
Venue: 17 Ngaire Street
Longburn
Palmerston North
Time: 9.30 am (sharp)
Contact: Andrew Beach
Phone: (04) 904 1634

Auckland: 2 November (Sunday)
Venue: Unitec
Carrington Road
Point Chevalier
Time: 9.30 am (sharp)
Contact: Carol Downer
E-mail: the fairy@xtra.co.nz
Note: Registrations can be made via www.aucklandbeekeepersclub.org.nz

Hamilton: 8 November (Saturday)
Venue: Matangi Hall
Tauwhare Road
Matangi Village
Time: 9.00 am (sharp)
Contact: Tony or Jane Lorimer
Phone: (07) 856 9625

Napier: 8 November (Saturday)
Venue: Coastguard Hawkes Bay
704 Meeanee Quay
Westshore
Napier
Time: 9.00am (sharp)
Contact: Peter Ferris
Phone: (06) 378 7632

Timaru: 8 November (Saturday)
Venue: Agribusiness Training
Old Washdyke School
Pleasant Point Highway
Time: 9.30 am (sharp)
Contact: Phil Sutton
Phone: (03) 686 1513

Invercargill: 15 & 16 November (Saturday & Sunday)
Venue: To be advised
Time: 9.00 am on both days (sharp)
Contact: Brice Horner
Phone: (027) 441 0344
E-mail: b.horner@xtra.co.nz
Note: Course is potentially over 2 days: please contact Brice for further information.

Mosgiel: 22 & 23 November (Saturday & Sunday)
Venue: Momona Hall
Time: 9.00 am (sharp)
Contact: Brice Horner
Phone: (027) 441 0344
E-mail: b.horner@xtra.co.nz
Note: Course is potentially over 2 days: please contact Brice for further information.

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) (If you are ordering from overseas, go to http://nba.org.nz/publications to download an order form appropriate to your country.)

Bee losses reported in South Wairarapa

It's been reported that a number of commercial beekeepers in South Wairarapa have suffered bee losses in their colonies following a month of inclement weather (see Hawke's Bay colonies report). Hives have been left with just a handful of bees, not enough to cover the brood area. Colonies most affected are in single brood nests, while double brood nest hives have fared slightly better.

There is a huge concentration of hives now in the Wairarapa and chances for hive-to-hive transmission of diseases, parasites and pathogens is hugely increased. Hives away for these concentrated areas have developing well.

A contender could be *Nosema ceranae,* which was first reported in the Coromandel and then Thames two years ago. Hive movements around the country could have spread this organism.

If you have seen losses of bees greater than normal that can't be explained, collect bee samples and freeze them. Contact the Biosecurity Hotline 0800 80 99 66 and have them test your samples. Collect 30 bees from the outer frames or at the entrance and another lot from some brood frames from several hives.

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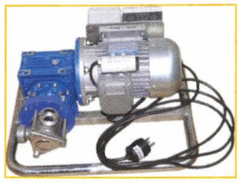

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- Output 4-5 tonnes per hr approx (honey only)

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- Suitable to pump honey and wax slurry or straight honey
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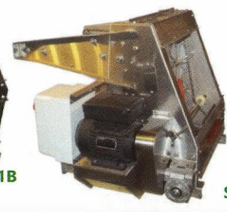
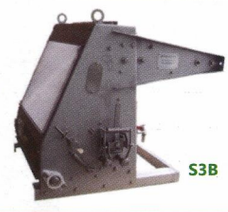

S4B


S3B


HS1B

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Prices Exclude GST and Freight. Subject To Change Without Prior Notice. Goods subject to availability.

Inbreeding problem for NZ bees?

By Peter K. Dearden, Director of Genetics Otago, University of Otago

New Zealand's bee population is unusual. It probably comes from a small number of introductions, and there are relatively small numbers of queen breeders. Small populations like ours often have little genetic diversity.

The arrival of the varroa mite on our shores has made our bee populations smaller, as they have killed most (or indeed all) of our feral bees. Again, such a reduction in population can lead to decreasing genetic diversity.

Should we care? Absolutely. When you reduce genetic diversity, you increase inbreeding, and inbreeding can be fatal to a population. In bees the concern of inbreeding is exacerbated due to the way bees determine their gender. Females come from fertilised eggs; they have two copies of each of their chromosomes and are diploid. Males come from unfertilised eggs; they have one copy of their genome and are haploid. A honey bee embryo needs to decide if it is male or female by working out if it is haploid or diploid. To do this, it counts the number of different versions it has of one single gene in the genome, a gene called '*complementary sex determiner*' or *csd*.

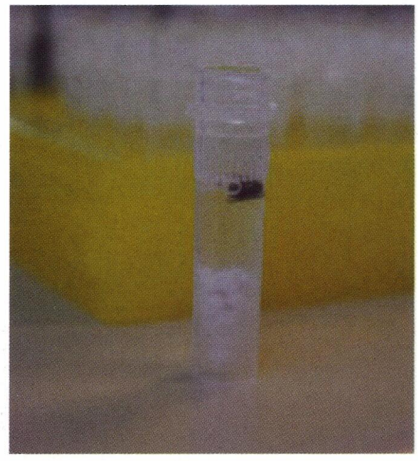
We call the variants of a gene 'alleles'. If an organism is diploid (it has two copies of its genome in each cell), it can have up to two versions of each gene in its genome—two alleles. If it is haploid it can only have one. So the honey bee embryo will count the number of alleles of *csd* it has. If it finds two, it turns female; if it finds one, it turns male.

Problems occur if the bee embryo is diploid, but both copies of its *csd* gene are identical. If this is the case it can only count one allele, and it inappropriately turns male. Worker bees kill these diploid males, and this reduces brood viability.

So honey bee health is linked to the number of alleles of *csd* present in the honey bee population. If you have lots of alleles, lots of variation, then the chance of any diploid bee getting two alleles that are the same is low. If genetic variation at the *csd* gene is low, then the chance of a diploid bee having two alleles the same is high. In this case, the workers kill the brood and the hive becomes much less productive.

> "...inbreeding can be fatal to a population."

With New Zealand's unusual population of bees, we were concerned that we may have very few *csd* alleles, causing problems with brood viability. We decided to discover if this was a problem. With funding from the Sustainable Farming Fund (Ministry for Primary Industries), we developed and used a genetic test to determine how many alleles of *csd* we could find in New Zealand. Many beekeepers sent us samples, for which we are truly grateful, and to whom we have responded with information about their bee populations.



A drone head waiting to have its DNA extracted and its csd *allele determined. Photo courtesy of Dr Peter Dearden.*

What did we find? Luckily we found lots of variation. In screening over 2000 drones from up and down the country, we found over 72 alleles of *csd*, more than enough variation to ensure that our bees remain healthy.

If you want more information, please go to our website for this project: http://biochem.otago.ac.nz/DeardenLab/csd/CSD%20index.html or email peter.dearden@otago.ac.nz

We did find some beekeeping operations where the numbers of alleles were lower: a reminder that it might be worth introducing bees from another breeder into your own operations every now and then. We also confirmed that allele numbers need to be managed in closed breeding populations. We are delighted that we have managed to help closed population breeders in this respect: this is the first time genetic tests have been used in this way worldwide.

Science can produce frightening results, uncovering risks we never suspected. It has been rewarding to do science that shows that a potential risk turns out not to be a problem. This project could not have been done without support from the Sustainable Farming Fund (MPI), the NBA, Federated Farmers, the Foundation for Arable Research, the University of Otago and all the beekeepers who helped us with samples.

Did you know the varroa are quite tolerant to the cold? In a USA laboratory, a varroa mite was frozen for seven months and when thawed out, it came to life again.

The international code for marking queens. A quick way to remember the code:

When	White	1/6
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The Beeswax Specialists

Bay of Plenty Branch training initiatives

By Barbara Pimm, Bay of Plenty Branch Secretary

The Bay of Plenty Branch of the National Beekeepers Association made a profit when we ran conference in 2009.

At our very next meeting it was decided to spend this money on training and research. We have supported the AFB Pest Management Agency with funds towards surveillance work, research projects, annual DECA courses and, for the past two years, a series of training days.

As a branch we have decided on what, where and when we would financially support suggested ideas. For training we have focused on keeping our members safe. This has become even more important with recent legislation having strengthened the rules and regulations around work safety. A First Aid refresher was a natural starting point and then down to core business.

We all drive four-wheel-drive utes, so after a meeting with Pete Ritchie from Natural Instincts we organised a fun day to determine just how useful this type of training would be to members. It was really useful and we have now held two separate full-day unit standards-based practical courses. Nineteen branch members (or their employees) achieved two unit standards, as shown in the photos.

Participants training for unit standard 17976: demonstrate knowledge of operating a light four-wheel-drive vehicle in an off-road environment. Photo: Allan Pimm.

Not only were these days informative and a load of fun, but we all learned about the capabilities of our own vehicles and ourselves in a safe environment.

The next course we are organising (again with Natural Instincts) is crane operation and vehicle recovery. Over the coming months/years we will focus on many core business activities that will give value to our members. These days are for members or their staff, with half the cost being subsidised by the branch. Non-members are welcome if places are available on all our training activities; however, they will pay full costs.

Left: BoP Branch participants training for unit standard 17978: operate a light four-wheel-drive vehicle in an off-road environment. Photo: Barbara Pimm.
Right: This was NOT part of the training exercise, but an example of what can go wrong. These bees and their keepers had a rough day when their truck rolled on a road in Carterton on 4 September 2014. With the new season under way and pollination nearly in full swing, it's a timely reminder to take care out there! You can read the full story in the Wairarapa News*: http://www.stuff.co.nz/dominion-post/news/local-papers/wairarapanews/10460202/Truck-crash-creates-real-buzz/ Photo: Piers Fuller/Fairfax NZ.*

Report of August BPSC meeting

By Dr Jim Edwards ONZM, Chairman

The Bee Products Standards Council Inc. (BPSC) met on Monday 25 August 2014, at Federated Farmers, Wellington.

Peter Ferris has replaced Neil Stuckey as an NBA nominee and at this meeting the Council accepted the nomination of John Rawcliffe as the nominee from the Unique Manuka Factor Honey Association.

PA project

The PA Project report was received by the Council, which agreed to seek additional funding from the industry. The mapping project trial is under way and is being used by a few selected people.

Tutin

The Ministry of Primary Industries (MPI) reported that there is a continuing review of the management of tutin toxicity. This, combined with the Food Standards Australia New Zealand (FSANZ) consultation, may well result in a reduction to both extracted and comb honey limits. *[Editor's note: see page 33 for an article from FSANZ about proposed changes for tutin in honey.]*

The Council noted that prudent packers require testing before processing and that the greatest risk remains the small producers.

The tutin video was received by the Council and will soon be available on YouTube and for distribution. *[Editor's note: see page 16 for more information.]*

Mānuka standards

Scott Gallacher from MPI met with the BPSC to discuss consultation and development of the Interim Labelling Guide for Mānuka Honey.

MPI recognised that further research and information is required before decisions on what further course of action required. MPI has already made a significant contribution to the process and committed to invest in ongoing research.

MPI has released collateral information on its website such as Q&A and information sheets.

The Council noted long-term table use in New Zealand of honeys, which are invariably multifloral.

MPI as the regulator wants to ensure credibility of all claims made and responsibility to ensure assurances. MPI will investigate any unlawful practices so that it can take appropriate action. The key is that sale of honey on the domestic market requires that label information will be justified.

The BPSC agreed to release a statement responding to the release of the mānuka guidelines.

Illegal use of product

The use of a non-registered varroa treatment has been investigated by the MPI Compliance Group. The MPI has advised that the product can not be used in New Zealand, even though the active ingredient is same as another registered product.

IMPORTANT NOTICE

Annual disease returns to be lodged electronically From 2016

From 2016 all beekeepers will be required to lodge their Annual Disease Return (ADR) via our online facility, APIWEB.

As a lead in, we are extending to beekeepers an invitation to submit their 2015 ADR via this means.

Our records show that approximately 20% of all registered beekeepers have used the APIWEB system. It is our hope that these beekeepers, plus as many others as possible, will submit their electronic ADR in 2015.

It is important to note that in April 2015, all beekeepers will receive a paper version of their ADR as in previous years. If you elect in 2015 to utilise the electronic facility, you will be asked to destroy the paperwork.

Testing of an enhanced version of APIWEB is currently under way. This latest development will include the electronic ADR return functionality and will be released in spring 2014.

We will be writing to all registered beekeepers in mid- to late November. We will provide additional instructions, including the steps to be followed to access APIWEB.

Rex Baynes
AFB PMP Manager

Minimising Psa spread via bees

By Kiwifruit Vine Health

Pollination is one of the most important activities in the kiwifruit orchard calendar. Most kiwifruit orchards rely on the introduction of bees to ensure effective pollination takes place.

The movement of pollination hives between orchards must be managed to minimise the risk of Psa-V spread associated with vehicle and equipment movement and potentially the movement of bees themselves. *[Editor's note: Psa-V is the virulent form of the bacterial kiwifruit vine disease* Pseudomonas syringae *pv.* actinidiae.*]*

Research has shown that pollen infected with Psa-V can be transferred between flowers via foraging bees. Some bee-to-bee spread of Psa-V can also occur within hives. For further information, refer to the Research and Development section of the KVH website www.kvh.org.nz

Kiwifruit Vine Health (KVH) has developed protocols to mitigate the potential for contamination of orchards via the use of pollination hives. These protocols apply to the movement, feeding and removal of pollination hives in all regions. Refer to *KVH Protocol: Pollination with Bees* on the KVH website www.kvh.org.nz/kvh_protocols

All beekeepers providing hives for kiwifruit pollination must adhere to these protocols.

Hives, pallets and vehicles must be cleaned of kiwifruit plant material and other debris before entering and leaving any orchard.

A stand-down period of nine to 10 days after pollinating an orchard (at a location that is at least five kilometres from the nearest flowering kiwifruit orchard) is 'best practice' in beehive management. Research has shown that foraging bees can carry Psa-V, and that Psa-V may be able to survive in hives for six to nine days. The stand-down period would substantially reduce any Psa-V within the hive.

The Controlled Area that was in place in Kerikeri has now been removed. There is still a Controlled Area in place for North-West Auckland. KVH authorisation is required when moving beehives within the Controlled Area. Contact KVH on 0800 665 825 or info@kvh.org.nz

> "All beekeepers providing hives for kiwifruit pollination must adhere to the KVH protocols."

KeyStrepto™

To help allay the concerns of beekeepers and mitigate KeyStrepto™ (streptomycin) residue risk for both beehives and kiwifruit at harvest, growers must confirm they have adhered to the ACVM (Agricultural Compounds and Veterinary Medicines Act) conditions of use. This includes taking all practical steps to remove flowers from the shelter and sward by mowing and herbicide spraying and ensuring no kiwifruit flowers are open when spraying.

Bee foraging on a kiwifruit flower. Photo supplied by Kiwifruit Vine Health.

KVH has been working with Zespri to review the audit programme for this season to ensure growers using KeyStrepto™ on their orchards are following the conditions described in the *KeyStrepto™ User Guide*. Once finalised, the audit focus will be the same as previous years, in particular focusing on nectar-bearing flowers.

NBA Otago Branch field day

The spring field day of the Branch will be held on Sunday, 19 October 2014, at the Lawrence Golf Club.

Speakers include:

- Professor Alison Mercer, Department of Zoology, University of Otago: 'Why does varroa have such devastating effects on our bees?
- Dr Mark Goodwin: 'Eradication of AFB'.
- Allen McCaw: 'Honey standards and residues, manuka, tutin, PA Project'.
- Ricki Leahy, NBA President: 'Update on the apicultural industry'.
- Panel discussion: Goodwin, McCaw, Leahy and others
- Peter Sales, et al.: 'Hive management issues, equipment size, varroa management, etc.

If you require any information, please email Tudor Caradoc-Davies, Otago NBA Branch Secretary, at brightwaterbees@gmail.com

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Propolis

By Russell Berry, Director, Arataki Honey Ltd

How wonderful it has been to work with such a natural product for the past 18 years.

We have now brought the whole operation to Waiotapu, Rotorua, where we use another natural product, geothermal steam, to assist with the processing. This is much more efficient than the diesel-fired boiler we used to use at Mapua, Nelson.

Some of you may ask, what is propolis? It is a gum bees pick up on their pollen sacs off buds of trees to block up cracks in hives. We beekeepers used to think it was a real pain as it made the hive difficult to get apart, so we had to use large hive tools and lever hives apart mainly caused by propolis gluing them together. It did have some advantages: after a day or two the hives became a lot less likely to have the lids blown off or knocked over by stock.

Now we put propolis mats on the top of the hive under the lid (or top feeder if you still use them). Arataki Honey Ltd produced over $600,000 of propolis (which is about $30 per hive) from our own hives last year. It is a real easy money earner you cannot afford to miss out on.

The Arataki propolis plant, Waiotapu, 2014. Photo courtesy of Arataki Honey Ltd.

We produce many different propolis products that so many people of the world consider to have health benefits. We have developed many great markets for New Zealand propolis. Our propolis is just good New Zealand propolis and we are very proud of that.

I understand it is easy to breed bees which will gather more propolis than others. I can see a time that propolis production may be worth as much as honey production. Don't hesitate to contact the expert in New Zealand propolis production, as I am only too happy to assist in any way I can to increase your propolis production. By the way, our plant at Waiotapu (which separates pure propolis from beeswax and makes many different products from the pure propolis), is now processing 350 kg of unrefined propolis per week.

Results of photo competition

By Mary-Ann Lindsay, Conference organising committee member, NBA Life Member

The sixth annual Ecroyd/New Zealand Apiculture Industry photo competition was held at the combined conference in Wanganui in June 2014.

Thank you to everyone who entered, and congratulations to the winners.

It's never too early to start thinking about entering next year's competition. Pop a camera in the truck and snap away!

Category winners

Portrait
1st Fiona O'Brien
2nd Jess Rees
3rd Fiona O'Brien

Scenic
1st Fiona O'Brien
2nd Alessandro Tarentini
3rd Jess Rees

Close up
1st Fiona O'Brien
2nd Jess Rees
3rd Jess Rees

Essay
1st Vaughan Kearns
2nd If you know the name of this person, please contact lindsays.apiaries@clear.net.nz
3rd John McLean

Overall winner: Fiona O'Brien.

[Editor's note: some of the prize-winning photos will appear in future issues of the journal.]

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Manuka Health's new payment schedule for raw propolis

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Please contact John Connor or Keith Rodie for more details on the premium payment.

Manuka Health will supply you with propolis mats and, once returned to us, we will extract the propolis, test it and provide you with the results before returning the mats to you for reuse.

For more information please contact John Connor or Keith Rodie

John Connor Email: johnc@manukahealth.co.nz
249 Bruce Berquist Drive, Te Awamutu
Phone: (07) 870 6555, Fax: (07) 870 6556

Keith Rodie Email: keith@manukahealth.co.nz, Mob: 021 994 516

Mgmt Agency prepares for H&S reforms

By Rex Baynes, AFB PMP Manager

Beekeepers may be aware that the Health and Safety Reform Bill ('the Bill') was introduced to Parliament on 10 March 2014. It is anticipated that new legislation will come into force in April 2015.

The essence of this legislation is a focus on systemic risk-based regulation.

The Bill will require a person in control of a business or undertaking ('PCBU') to develop a systemic approach to risk by putting in place systems for managing the PCBU's risk and meeting its regulatory obligations.

The main purpose of the Bill is to provide a balanced framework to ensure the health and safety of workers by "protecting workers and other persons against harm to their health, safety and welfare by eliminating or minimising risks arising from work or from prescribed high-risk plant".

The Bill is based on the principle that workers should be given the highest level of protection against harm to their health, safety and welfare from hazards and risks arising from work as is reasonably practicable.

Whilst a PCBU does not include a person who is a worker or officer of a business or undertaking, a volunteer association or an occupier of a home, to the extent this person employs a person to do work in the home, it does apply to the following:

- employers
- those who manage or control the workplace
- those who manage or control fixtures, fittings or plant at workplaces
- designers, importers, suppliers and installers of plant, substances or structures.

The Bill defines workers as those who carry out work in any capacity for a PCBU including:

- employees
- contractors or subcontractors
- employees of a contractor or subcontractor
- employees of a labour hire company and others.

A new regulator, WorkSafe New Zealand, will be enforcing the legislation to the best of its resources.

There will be heightened duties to identify hazards and risks.

Determining what is reasonably practicable in relation to a duty to ensure health and safety, includes what a person knows or ought reasonably to know, and the availability and suitability of ways to eliminate or minimise the risks.

Employers need to be very careful to ensure that all risks are minimised, including:

- the risk of workers not following proper steps or directions; and
- hazards (such as fatigue) about which the employer may not have any knowledge and that may not be identifiable.

Employers will need to know not only what their workers have been asked to do, or should be doing, but are also to have knowledge of what work is actually being done. In addition, employers will need to be aware of issues and risks that most employers would not have sufficient knowledge about, or even awareness of, in order to comply with the legislation.

Worker engagement is critical to the Bill. Effective worker participation requires employees to work collectively and to take action for the common good.

Participation by employees under the Bill is far more significant that the current position.

A PCBU is required, as far as reasonably practicable, to engage with workers who are likely to be directly affected by a matter relating to work, health or safety. This requires hazards to be identified and an employer needs to make decisions about ways to eliminate or minimise the risks.

Workers can request an election of Health and Safety representatives or the PCBU can arrange for elections on its own initiative. Those representatives are required to:

- represent workers in the work group on matters relating to health and safety
- investigate complaints from workers in that work group regarding health and safety.

The PCBU has significant obligations to the Health and Safety representative including consulting about health and safety measures, conferring when reasonably requested, allowing time off for the Health and Safety representative to spend as much time as reasonably necessary to perform the functions, providing information, along with the duty to provide resources, facilities and assistance.

The level of employee engagement anticipated by the Bill should enable employees to have full involvement in ensuring health and safety in the workplace. It will require significant investment from employers in facilitating training and will take significant time at the employer's cost.

The Management Agency (MA) is currently identifying hazards and risks relevant to it and is preparing policies to ensure that the hazards and risks are eliminated or minimised. The Management Agency is taking a responsible approach to ensure that it will be in a position to comply with the Bill when passed into law next year.

Source

Parliamentary Counsel Office, New Zealand Legislation. Health and Safety Reform Bill. Government Bill 192—1. Accessed September 8, 2014 from http://www.legislation.govt.nz/bill/government/2014/0192/latest/DLM5976660.html

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Bees and pesticides safety meeting

By Don MacLeod, Committee member

A joint meeting was held on Friday 22 August at the Environmental Protection Authority (EPA) offices in Wellington to discuss pesticides and bee safety, attended by invited interested parties.

Dr Mark Goodwin of Plant and Food Research arranged and chaired the meeting, which had a very broad guest list. Four beekeepers participated: Roger Bray, Barry Hantze, Neil Mossop and me (an amateur) representing NBA and BIG. Five chemical companies were present, as well as the Foundation for Arable Research, Federated Farmers, AGCARM and one breeder of bumble bees, plus grower groups and Government officials.

Dr Goodwin started the conversation by pointing out that bees and the use of pesticides was now a widely discussed public issue. There is also increased sensitivity to the issues of pesticide residues in food products, which includes bee products. Mark introduced to the discussion the fact that pesticides are tested for acute effects on bees and not chronic effects. Current trends show there is much more interest in the chronic effects of pesticides on bees. Participants discussed the increase in hive numbers in New Zealand, and whether it meant that bees were in good health. Beekeepers are not as optimistic about this issue as the chemical industry.

The first speaker was Valerie Herno, Senior Ecotoxicologist for the EPA. She discussed the approval process, the evaluation of risks versus benefits of a pesticide, and the opportunity to make a reassessment if new data becomes available on a pesticide product.

Valerie outlined some weaknesses in the system regarding the Hazardous Substances and New Organisms (HSNO) Act 1996:

- the EPA does no environmental monitoring of effects, nor do they require it from applicants
- the EPA does not evaluate Environmental Exposure Limits (EELs) for products which have EEL, as there is nobody out there measuring them
- existing HSNO Act approvals are of unlimited duration. Would a renewal process be appropriate?
- the approval is related to the substance and not the end use.

The EPA is presently undergoing some changes as the result of the formation of WorkSafe, which will be enforcing almost all of the HSNO Act on behalf of the EPA. The EPA plans to update some of its guidance material for testing of pesticides, as the latest United States Environmental Protection Agency/Canadian Pest Management Regulatory Agency guidance material was updated this past June. (Canada and the United States are aligning their pesticide management systems.)

In New Zealand, the Hazard Classifications need to be revised to the newest version of the OECD Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Valerie pointed out that bee testing required under the HSNO Act is the OECD 213 acute oral toxicity test for adult bees only, with no requirement for chronic toxicity testing, testing of effects on larvae and brood etc (OECD, 1998). She did say that the chemical companies are now presenting more data on testing of bees and bumble bees than they used to, such as tunnel house testing in field crops.

The EPA has introduced a reporting system for bee deaths. It will be collecting data from beekeepers who will be making the assessment on what is happening to their hives. The EPA has no staff to assist with timely onsite investigations and evaluations.

AGCARM (which represents, supports and advocates for the plant and animal science industries in New Zealand) expressed concerns about how this data will be used and their concerns about wrongful implication of specific chemicals and the unsubstantiated nature of the reporting process. Valerie Herno replied that the EPA will use the information internally.

The NBA Technical Committee strongly believes that this data is beekeepers' information (after all, they supply it) and it should be available in the public domain for research purposes. The beekeeping industry also has considerable responsibility to portray accurate information to assist with bee safety, rather than making unsubstantiated claims that cause friction with the crop protection companies. Beekeepers, are you reporting hive deaths to the EPA?

The next speaker was Warren Hughes (Principal Adviser ACVM Regulation & Assurance Systems Audit, Assurance & Monitoring Directorate, Regulation & Assurance Branch, Ministry for Primary Industries) Warren spoke on behalf of MPI. He is probably New Zealand's most knowledgeable and experienced senior MPI representative, and regularly attends OECD workshops on developing guidelines for pesticide regulation.

In New Zealand, the HSNO Act 1996 is based on the OECD GHS for hazardous substances and the Agricultural Compounds and Veterinary Medicines (ACVM) Act 1997 is based on the OECD Guidelines for Pesticide Regulation.

Warren pointed out that bees were not included in the Animal Welfare Act 1999, so the effects of spraying of pesticides on bees are not considered as an animal welfare issue. However, bees and insects are included in the Animal Products Act 1999. There is no provision to protect bees from the effects of pesticides in the ACVM Act 1997, as it deals primarily with pesticide use on food and animal feed crops.

MPI tests our food (including bee products) annually for pesticide residues. This is the primary process for determining if our ➜

growers are applying pesticides safely. There appears to be no testing of small seed crops or industrial crops (e.g., canola oil for energy use) for excessive pesticide use.

The grower organisations present (Zespri, New Zealand Avocados, Pipfruit New Zealand) said that the major pressure on them to reduce pesticide use was from their big overseas customers, citing Sainsbury, TESCO in the UK as examples. Large, strong customers can make a difference in determining pesticides use in New Zealand.

Warren Hughes emphasised that protection of bees and other pollinators lies with the EPA and the HSNO Act 1996. There is no specific legislation managed by MPI that is designed to protect pollinators in agriculture and horticulture. That is most likely why we see today that MPI has very little staff expertise within its organisation with respect to apiculture. MPI also has no interest in regulating plant nutrient products and surfactants, which are both approved under EPA Group Standards.

Participants then considered a number of key points, as set out below.

- How much pesticide is used in New Zealand? The OECD Guidelines for Pesticide Regulation recommend that a country keep records of pesticide volumes being used by chemical type. Warren Hughes reported that MPI no longer endeavours to obtain details of volumes of pesticides used and is not likely to collect this data anytime in the future. Valerie Herno said that the EPA does not obtain any records of pesticide volumes used in New Zealand. Many countries do collect this data. Effectively no one is monitoring how much pesticide is used annually in New Zealand. We do not know if we are using more or less pesticides by active ingredient per annum.
- MPI has placed a number of controls on the use of antibiotics in New Zealand, effectively removing prophylactic use (i.e., used for prevention of disease rather than to cure disease) of antibiotics. Interestingly, MPI does not know if antibiotic use on the farm has actually fallen since they introduced these use controls, but they presume it has. There is no government agency evaluating if we are overusing specific pesticides in New Zealand. Both EPA and MPI require details of Good Agricultural Practice (GAP) prior to the approval of a new pesticide. They do not evaluate if the product could be overused by prophylactic use. David Goulson of the University of Stirling, UK, has questioned if the prophylactic use of broad-spectrum neonicotinoids as seed treatments goes against the long-established principles of Integrated Pest Management (IPM) (Goulson, 2013).
- AGCARM mentioned that all applicators of pesticides should be approved handlers, and to become qualified they have to attend a suitable GrowSafe course. This is not quite correct, as an unqualified person can apply a pesticide by ground spraying so long as they are under the direction of an approved handler. An aerial operator (pilot) has to have a chemical rating, which is equivalent to an approved handler for aerial application (Civil Aviation Authority, 2014). Not all pesticides require an approved handler, which is determined by the EPA.
- Beekeepers raised their concerns about fungicides, especially those applied during flowering. It was pointed out that many fungicides approved by the EPA do not pass through the public notification process, so beekeepers cannot make public submissions on their effects on bees. Zespri's representative made a valuable contribution here: Zespri's practice is to not have any spraying during flowering whilst pollinators are in the crop. The other issue pointed out by Valerie Herno is that fungicides are not always tested for bee toxicity.
- There is no provision for enforcement of the HSNO Act in either the EPA or MPI. We have been advised that WorkSafe will be administering the Class 9 Ecotoxic provisions of the HSNO Act, which will include the investigation of bee kills. MPI does its own enforcement of the ACVM Act.
- There is no public input into the ACVM Act approval process for pesticides. The HSNO Act makes provision only for public submission on pesticides that are new and those that exceed hazardous thresholds. Many pesticides are approved without public submission.

We had a very constructive discussion with respect to surfactants. Valerie Herno has indicated that the EPA is likely to initiate a reassessment of surfactants used with pesticides in about 12 months. AGCARM's Graeme Peters said that the pesticide manufacturers supported this reassessment, which is excellent news. One small step forward for the bees.

There is no interest from the EPA or MPI to investigate the 'bee dead zones' on the Gisborne Plains and in the Eastern Bay of Plenty maize-growing area where beekeepers see their hives die out. We do not exactly know the causative factors but suspect it is pesticide levels in surface water and soil. Victoria University Masters' student Mary Paul (who was present) will be researching this in the Gisborne area this September. Not one of the chemical companies present expressed an interest in doing research to determine why this is happening. My impression is once we have evidence, the EPA and MPI will act. But remember that the HSNO Act embraces the precautionary principle, so just one report should at least get the EPA out and looking. Unfortunately, the EPA does not have the field staff or money to investigate these areas of concern.

It is disappointing to see that our regulators (EPA and MPI) are so far from the crop when it comes to following up on the health of our pollinators. The legislation they work under keeps them in an office tower in Wellington and they have no follow-up process for their actions when they approve pesticides for use.

This meeting was an excellent means of establishing communications for future discussion.

References

Civil Aviation Authority of New Zealand (2014, August 5). AC61-16 Rev 3 Pilot licences and ratings—Pilot Chemical Ratings.

Goulson, D. (2013). An overview of the environmental risks posed by neonicotinoid insecticides. *Journal of Applied Ecology, 50,* 977–987.

Organization for Economic Cooperation and Development. 21 Sep 1998. *OECD Guidelines for the Testing of Chemicals, Section 2. Test No. 213:* Honeybees, Acute Oral Toxicity Test. Retrieved September 9, 2014 from http://www.oecd-ilibrary.org/environment/test-no-213-honeybees-acute-oral-toxicity-test_9789264070165-en

Proposed changes for tutin in honey

Provided by Food Standards Australia New Zealand

Food Standards Australia New Zealand (FSANZ) is proposing to reduce the maximum levels for tutin in honey and comb honey in the Australia New Zealand Food Standards Code.

Tutin is a toxin which can be present as a contaminant in New Zealand honey and comb honey. This can occur when bees gather honeydew excreted from passion vine hoppers that feed on the native tutu bush.

Temporary levels for tutin in honey and comb honey were introduced in the Code in 2009 in response to a 2008 poisoning episode. The current temporary levels of 2 mg/kg for honey and 0.1 mg/kg for comb honey expire on 31 March 2015.

FSANZ General Manager Food Standards Dean Stockwell said that FSANZ is proposing to reduce the maximum levels based on further scientific research that has been done since the temporary levels were set. The new maximum levels proposed are:

0.7 mg/kg for tutin in honey
0.01 mg/kg for tutin in comb honey.

A call for submissions report on the proposed new levels was released in July. FSANZ is currently considering issues raised in the eight submissions received from industry, peak bodies and jurisdictions.

"The proposed changes are subject to approval by the FSANZ Board and consideration by ministers responsible for food regulation," Mr Stockwell said.

"If approved, the new levels are expected to come into effect around January 2015. However, FSANZ is proposing that honey and comb honey packaged for retail sale before this date would be exempt from the proposed new levels and would only need to comply with existing levels."

To be kept up to date about FSANZ's review of the tutin maximum levels, contact standards.management@foodstandards.govt.nz and ask to be put on the interested parties list for proposal P1029 – Maximum level for tutin in honey. You can also view the recent consultation report and follow progress on the proposal at: http://www.foodstandards.gov.au/code/proposals/Pages/P1029-Maximun-Level-for-Tutin-in-Honey.aspx *[Editor's note: the URL is correct, despite the typographical error.]*

Compliance

In New Zealand, requirements for demonstrating compliance with the tutin levels in the Code are set out in the Food (Tutin in Honey) Standard 2010. The Ministry for Primary Industries (MPI) is responsible for developing and amending this Standard, which is currently under review. MPI will take into account any changes to the tutin levels made in the Code in its review of the Standard.

Who do you call?

AFB RECOGNITION COURSES

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

www.afb.org.nz

E-mail: rbaynes@ihug.co.nz
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E-mail: sheryl.bertram@asurequality.com

South Island—Margaret Roper, Registrar
Ph: (07) 574 2596
E-mail: margaret.roper@asurequality.com

EPA POLLINATOR INCIDENT REPORTING SHEET

The EPA needs help from beekeepers and other people who observe pollinators to report any incident as quickly as possible. To report an incident, go to this link http://www.epa.govt.nz/Publications/Pollinator_incident_reporting_form_2014.pdf
Fill out the form and e-mail it to HSincidents@epa.govt.nz

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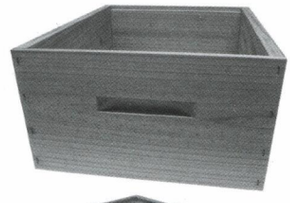

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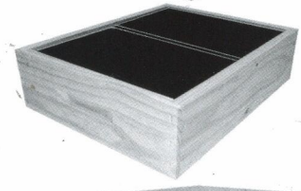

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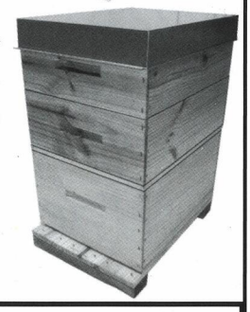

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Kiwifruit industry in full recovery mode

Provided by Zespri

A strong sense of optimism has returned to the kiwifruit industry after three tough years of adjusting to living with the bacterial disease, Psa.

Volumes of Zespri's premium gold variety, Gold3, are forecasted to grow strongly over the next several seasons as volumes from the regrafting programmes come on line. This will result in volumes greater than pre-Psa gold volumes, as Gold3 produces more fruit per hectare than the original Hort16A variety.

What will this mean for the beekeeping industry? Demand for high-quality pollinator hives will return to pre-Psa levels and may even increase beyond this if the industry remains profitable, and new plantings start to lift the total area above the present 15,500ha.

There will be increased focus on high-quality hives as growers push productivity targets despite Psa. Maximising pollination is a key factor in this and the New Zealand kiwifruit and beekeeping industries have a long history of working together to ensure hive quality and hive availability doesn't constrain production. This will be further aided by Gold3 flowering later than Hort16A, providing beekeepers additional time to get hives up to specification. On the flip side, Gold3 flowers much closer to Hayward, making reuse of hives more challenging—although this practice has all but disappeared over the last few seasons.

A honey bee frame 60% covered with brood (the area of brown cells on the bottom half of the frame). A hive meeting the minimum standard should contain at least 7 such frames of brood. Photos courtesy of Zespri.

A frame covered with bees. A hive meeting the minimum standard should contain at least 12 such frames of bees.

The use of honey bees is a cost-effective means of pollinating kiwifruit; however, the quality of the hives used strongly influences the pollination result achieved. The more bees and brood a colony has, the more pollen it will collect, and hence the greater its value for kiwifruit pollination. Kiwifruit have male and female vines and flowers do not have nectar.

Hive auditing schemes are well entrenched in the industry. It is based on hives meeting a minimum quality standard, the Kiwifruit Industry Standard. This requires a pollination hive to have as a minimum, seven frames of 60 percent brood, 12 frames of bees and a laying queen, with room for the colony to expand. It should also be free from disease and hives should be fed with sugar syrup every two days, as this increases pollen collection up to six times.

There has been some interest in working towards frames of bees and brood per hectare as opposed to number of hives/ha meeting the standard. If this is to develop, growers will need to see the number of frames recorded on the top of the hive before introducing it to the orchard to enable effective auditing.

Pollination agreements have become increasingly common and are recommended. These outline required standards, expectations around agrichemical use, timing of hive introduction and removal, auditing and feeding regimes.

Kiwifruit pollination offers beekeepers a stable, supplemental income utilising hives before the main honey flows commence. With many new entrants to the beekeeping industry and some expressing interest in providing pollination services, the NBA and Zespri are keen to ensure new entrants have a clear understanding of orchardists' requirements and that they are well aware of what expectations they should be placing on the orchardists.

The NBA and Zespri are interested to hear from beekeepers who would like to attend some practical educational workshops designed to improve understanding on how to participate in kiwifruit pollination. If you are interested in attending such a session please contact Dennis Crowley, NBA Bay of Plenty Branch President.

Want to learn more about Pollinator Hives?

NBA and Zespri are calling for expressions of interest from beekeepers interested in attending practical training workshops.

Contact Dennis Crowley (NBA) crowleys@slingshot.co.nz ph 027 286 3124

We want your photos!

The Publications Committee welcomes photos for the journal. Pop a camera in the truck and snap away when you find something interesting. Please provide a caption and the name of the photographer so we can credit them.

If you're thinking big (such as a potential front cover photo, which we always need), these need to be as large as possible (3MB or larger if possible), in portrait format (vertical rather than horizontal), and ideally 300 dpi (dots per square inch). Regular digital photos are only 72 dpi, so are not suitable for the front cover.

Email them to editor@nba.org.nz

NOM 11 progress report

By Kim Singleton, Chairman, NOM 11 committee

After the 2014 AGM, the Executive Council established a subcommittee entitled 'The NOM 11 committee'. The members of that committee are Kim Singleton (chair), Deanna Corbett and Dennis Crowley.

The role of the committee is to respond to the notice of motion 11 that states:

"The Executive Council moves that the AGM agrees that the EC should explore the value in uniting with other industry stake holders in the formation of a representative industry body."

As a result, invitations were sent out to John Hartnell (Federated Farmers Bee Industry Group: FFBIG), Peter Bell (FFBIG), Allen McCaw (Honey Packers and Exporters Association Inc: HPA), Kim Poynter (Hobbyist) and the NOM 11 committee. This group met at Wellington Airport on 3 September, with Hilary Bryan of The Training Practice acting as facilitator and Pauline Downie taking the minutes.

The aim of this meeting was to establish the parties that may be interested in the amalgamation of the beekeeping industry and work on establishing a representative group that will formulate a possible path forward.

A structure for the working group was proposed as having 10 members, with others in an advisory role as the requirements of the group change:

Independent Chairman (with experience in amalgamation of industry bodies)

By appointment:

2 NBA
2 FFBIG
1 HPA

By invitation:

1 large-scale beekeeper (can be packer and exporter as well)
1 packer/exporter (no hive holdings)
1 unaffiliated beekeeping enterprise in the mid-range of size
1 Maori Trust that has an interest in beekeeping—expression of interest
1 Hobbyist

Advisors (for example):

Ministry for Primary Industries
Aquaculture New Zealand

We are looking for expressions of interest from parties that fit in the above groupings so that we can continue to move forward in an inclusive, well-informed manner. Expressions of interest directed to the NBA or FFBIG would be welcomed before 20 October. Contact Pauline Downie at pauline@nba.org.nz or ring (04) 471 6254, or John Hartnell john@hartnellnz.com or (03) 349 5590.

The working group is aiming to develop an industry model by 1 April 2015.
The task of the working group is to devise a plan of how the industry would look as a unified body and work through the process of achieving this.

The meeting was conducted in a very constructive manner. All parties were able to speak freely and openly about how they perceived the sector of the industry they represented was placed in being able to move towards the goal of unity. Minutes for the meeting will be available on the NBA and FFBIG websites.

Expressions of interest directed to the NBA or FFBIG would be welcomed before 20 October.

These ideas have been taken back to the NBA Executive. In line with the results of the Apicultural Industry Structure Survey, the Executive has agreed to endorse the next stage of the process.

It is an exciting time for the beekeeping industry, with scrutiny from a global audience that has not been experienced before. As an industry we must ensure that our house is in order to continue to have the unique position in the world's marketplace that we have benefited from over the last few years.

Since varroa reproduction rates are higher on drone brood, varroa populations increase much faster when drone brood is present in the colony. *[Source:* Control of Varroa: a guide for New Zealand beekeepers *(revised edition), by Mark Goodwin & Michelle Taylor, page 31.]*

Ensure that you and your staff undergo a regular training programme to refresh your AFB diagnostic skills. [Source: revised edition of Elimination *of American Foulbrood* Disease without the use of Drugs—a practical manual for beekeepers, *by Dr Mark Goodwin, page 49.]*

Swapping brood between colonies is the most guaranteed method of transmitting AFB between colonies. [Source: revised edition of *Elimination of American Foulbrood Disease without the use of Drugs—a practical manual for beekeepers*, by Dr Mark Goodwin, page 29.]

National Beekeepers Association of New Zealand
2015 Membership and Journal Subscription Form

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13-MONTH SUBSCRIPTION: Subscriptions for NBA memberships for each of the 2015, 2016 and 2017 years will be calculated for a period of 13 months. The membership year remains 1 Jan–31 Dec until 2017, when the Association's financial year is changed to 1 Apr–31 Mar. The 13th month will be accumulated and held in reserves until 1 January 2017.

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Categories	Total hives	Votes	Jnls	GST Incl.	√
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Sideline Commercial	11-50	2	1	$206.87	
Small Commercial	51-250	3	1	$407.36	
Commercial Level 1	251-400	4	1	$655.09	
Commercial Level 2	401 - 800	7	1	$1021.58	
Commercial Level 3	801-1200	10	2	$1276.98	
Commercial Level 4	1201-1500	13	2	$1404.68	
Commercial Level 5	1501-3000	19	3	$2553.96	
Mega Commercial	3001 +	25	4	$3830.94	
Corporate Membership ***(Affiliate companies with no hive holdings)***		2	1	$349.89	
NZ Beekeeping Clubs		2	2	$222.19	

Contributions GST Incl.	
Bee Health:	**$**
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New Zealand	**$155.46**
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BAM achieving 'exceptional' results

By Miriam Nicholson, NBA Executive Secretary

As I write this we are halfway through September's Bee Aware Month.

We have had exceptional results so far, with our Facebook page reaching over 111,000 people in the first week of September.

Our Bee Aware Month supporters deserve a HUGE THANK YOU, particularly De Winkel, Palmers and Excelso Coffee. We want to tell you about who they are and how they support the NBA.

De Winkel produce all-natural yoghurt with no artificial colours, flavours or preservatives. They are the main partner of Bee Aware Month, donating $20,000 to the NBA each year.

Palmers provides great gardening ideas and solutions and is proudly New Zealand-owned and operated. They sponsor the top prizes for the School Video Competition and run nationwide BAM events and promotions. A percentage from lavender plants sold in September will be donated to the NBA. The School video competition was won this year by Avalon School in Lower Hutt. You can view the four amazing finalists on our Facebook page: Bee Aware Month.

Excelso Coffee are a coffee roaster and café based in Tauranga. They are running a fantastic range of events throughout September. They are also generating donations for the NBA through the sale of their reusable coffee cups!

Ecostore create products with no nasty chemicals, which are healthier and safer for the planet. Ecostore have donated prizes to this year's school video competition winners.

Commonsense Organics have signs and flyers on produce in-store that say "None of these without bees" to highlight just how much of our food is pollinated by bees, and are selling seeds in-store! The Mid-Canterbury 'Feed the Bees' project has been hard at work raising public awareness by supplying free 'bee-friendly' plants to their community. Jessica Price and Paige Drummond of Nelson College for Girls chose to support BAM as part of their Yes Enterprise, Year 12 Business Studies Course. A percentage of the profits from the sale of the product was donated to the NBA. Along with newspaper publicity of their mission, the girls also included information on their stand to help educate the public about the role of bees and the dangers they face.

We contacted mayors around New Zealand and challenged them to follow in Auckland City Council's footsteps and place hives on council property. Rotorua mayor Steve Chadwick and Gisborne mayor Meng Foon are in discussion with the NBA to do this. Wellington mayor Celia Wade-Brown knows Wellington is a bee-friendly capital: "as well as the Beehive we've got some really productive beehives populating the city's private gardens, public spaces and even schools."

Greenhaus Nursery goes all out for BAM. Photo courtesy of Greenhaus Nursery.

Artist Pete Fountains donated his bee song to BAM: you can find it on our Facebook page! Honeywraps gave away two big prize packs during BAM. Honeywraps are handmade in New Zealand as an alternative to plastic wrap. Every sale in September has seeds included to help New Zealand bees.

Raymond Huber is a children's author, editor and teacher. The NBA gave away copies of his children's picture book, *Flight of the Honey Bee,* during BAM.

The Greenhaus Nursery near Taihape put up a huge sign 'Be Good to Bees Please'. Despite having severe allergic reactions to bee stings, they "appreciate the importance of bees for the ecosystem and food production and take every opportunity to encourage them into our garden. We use and promote bee-friendly gardening practices, such as avoiding all sprays and including plants that will help feed the bees at different times of the year. For Bee Aware Month we are only too happy to help spread the message and remind people to 'be good to bees please'."

NBA branches and New Zealand beekeeping clubs, particularly Kim Kneijber, Kim Poynter and Maureen Maxwell, have continuously generated public support for Bee Aware Month. Mossop's Honey has given away fantastic BAM prizes and Happy Valley Honey has created national media attention for the plight of bees. Annabel Langbein has been blogging about bees and promoting Bee Aware Month. Tony and Jane Lorimer will be supporting the NBA at the Hamilton Zoo open day, educating hundreds of students about bees. The Wellington Botanical Gardens, Arataki Honey Visitor Centre, Waitakere Ranges Regional Park and Comvita Experience have been hosting Bee Aware Month displays and events. J. Friend and Co. Ltd, Countdown, Hubbards, Sante, Kiwimana and many other businesses have been promoting and supporting BAM.

We want to thank you all for your support. Bee Aware Month 2014 has reached an unprecedented proportion of the New Zealand public, reminding them just how important bees and the beekeeping industry are.

What is killing our bees?

By Roger Bray, Technical Committee

It would appear that there is an increase in the number of colony deaths that beekeepers are reporting. We wonder if a phenomenon is emerging, or if it's just a normal part of farming livestock.

The increase could also indicate better communication between beekeepers.

Then there are the claims of possible causes of bee deaths, ranging from proximity to cell phone towers to being poisoned by a home gardener spraying their roses with a neonicotinoid product.

Without delving too deeply into the above two examples, there are some more obvious causes that lead to bee deaths. The major cause is beekeeper related: has the hive starved to death? Just because there are a few flowers in the neighbourhood does not mean that the bees will sustain themselves.

Then there are the varroa-related issues—have the hives been treated? Was the treatment successful? What about other diseases that the hive may have, such as AFB? Did you look for AFB scale? Has the hive gone queenless or is the queen a drone layer? Has the queen been trapped under an excluder and the bees moved up to be closer to the honey supplies? Are the hives in a cold, damp spot with no sun shining on the hive? These are a few of the questions that should be asked to rule out if the beekeeper has contributed to the demise of his or her bees.

In some cases, the beekeeper will still be unsure of causes, particularly where a beekeeper has considerable experience. The term 'unidentified causes' aptly describes the losses. There will be times when beekeeper suspects chemical poisoning has been a factor. A lot of work is being undertaken on neonicotinoids and there are many claims and counterclaims, depending on which side of the fence one is on. Perhaps we should concentrate on the other more common chemical issues that cause bee deaths.

First, damage is caused by insecticides that are designed to kill insects, including bees. Although there are conditions of use that have been approved for the product, not all chemical applicators take appropriate care when using potentially dangerous chemicals. The conditions of use will be on the label and will indicate crops that the product can be applied to and the time of application, as well as any withholding periods that are appropriate. Care must also be taken to ensure there are no flowering plants (weeds) in the target area, such as flowering clover or dandelion in an orchard situation. Spray damage to bees very often is caused by the applicator 'taking liberties' and being caught out; such as when the label instructions stipulate that spray must be applied in the evening when bees have stopped foraging and the applicator sprays in the morning, only to have bees in the crop when bees become active and the product has not fully dried.

"EPA has set up a reporting database to track bee deaths."

Other chemicals, such as systemic products, kill over an extended period because the chemical is absorbed into the plant. The controls on this type of chemical prohibit the application of the product a number of days before the crop flowers—the unknown aspect is whether the farmer is able to judge when the crop will flower, as a few days' sunshine can speed up flowering quite a bit.

If you have hives that have died 'unexplained' deaths or where there is a strong possibility of chemical damage, there are some options that may help us come to grips with establishing causes for the bee deaths. The Environmental Protection Authority (EPA) has set up a reporting database to keep track of bee deaths at **http://www.epa.govt.nz/Publications/Pollinator_incident_reporting_form_2014.pdf**
You may not know the answers to some of the questions and it would be preferable that you obtain a second opinion from another beekeeper, as it is not beneficial to 'point the finger at chemical users' without some strong evidence of chemical damage.

Please forward a copy of the EPA report to the NBA for our information purposes by e-mailing secretary@nba.org.nz. This means that the Technical Committee can keep a register of bee deaths as well as the EPA.

If there is strong evidence of chemical damage, you could consider reporting the incident to an enforcement agency for the Hazardous Substances and New Organisms (HSNO) Act—WorkSafe (formerly the Department of Labour), phone 0800 030 040. You may have trouble getting them to listen to your report of the incident as they concentrate on dead and injured people rather than dead insects; however, be persistent and obtain an incident reporting file number. Down the track this number will be important to review what form the enforcement of the controls on chemical use have taken. In most cases it appears that a priority system exists for all investigations by WorkSafe; therefore the killing of some bees rates as a low priority for WorkSafe, regardless of the effect the damage has on a beekeeper's business.

If you have a suspected incident of chemical poisoning, then in addition to the above you could consider contacting the NBA Technical Committee, who may offer practical assistance. The committee also will be assessing the effectiveness of the enforcement agencies for the HSNO Act. We would appreciate evidence that these agencies are taking bee deaths seriously, as well as ensuring that chemical applicators are complying with controls on the use of chemicals.

Thoughts on industry unity

By Geoff Bongard, Ashburton Apiaries Ltd

Every so often the beekeeping industry seems to reinvent the wheel and hopes that there will be a different outcome than in the past. The current call for unity is reminiscent of the events of nearly 15 years ago, when there was a beekeeper vote to abandon the commodity levy-based industry-funded organisation, and the call to form a new group under Federated Farmers.

Looking back over the past 15 years, there has been some progress for the industry although there is even more fragmentation with industry organisations. It does appear positive that there is now a realisation that one industry body would create the vehicle where issues could be discussed and both sides of a proposal considered. Once all the information is carefully considered by the members and a consensus is agreed, the industry moves forward together—this is the concept that is referred to as unity. Unity is not a flag, a name, a logo or an organisation; it is simply the word that describes togetherness that people with common views and aims have.

There are some in the industry that see compulsory funding for industry projects as desirable. The current thinking is to start a new organisation and then proceed to implement a commodity levy. However, the new industry group will have a structure that is consistent with the group that pays the levy. Therefore, to save a lot of unnecessary work creating new organisations, perhaps the consultation and a vote for a commodity levy should initially take place. If the potential levy payers vote to introduce a commodity levy, then an organisation can be created that will best represent the makeup of the group of levy payers (i.e., a beekeeper organisation if a levy is based on hives/apiaries or a processor organisation if the levy is based on 'in the pot' bee products).

There are a lot of different things to consider with industry-based commodity levy funding; as well there is also a consideration that if the beekeepers desire to be a partner in GIA, it is likely that there will also need to be a biosecurity levy to provide the beekeeper funding for their involvement as a GIA partner.

Of course the NBA has previously been a commodity levy-based organisation and does maintain a biosecurity levy, so the NBA would need few changes (if any) to slot back into the role of administering any new levies that are needed in the future. It does seem an unnecessary effort and expense to consider winding up the NBA, only to replace it with an organisation that would be very similar in structure to the NBA.

Let those who are promoting a commodity levy embark on the consultation process, while the rest of the industry continues with those projects that allows the industry to move forward without becoming distracted—there are plenty of industry matters that need progressing.

If the industry signifies acceptance of a commodity levy, then implementation becomes another project.

Why our actions matter

By an anonymous self-employed commercial beekeeper

Beekeeping is the flavour of the month. Everybody wants a piece of the action, from idealists thinking that having a few hives will save the planet to overseas investors working covertly or overtly to get as big a piece of the pie as they can. Goats (dairy, angora, cashmere), deer, ostriches and llamas: all are industries that have had meteoric starts followed by collapses, some worse than others.

Beekeeping was different from all these industries: it existed in a truly symbiotic relationship between farmers and beekeepers, between plants and bees. Like all farming, it had its ups and downs and highs and lows (threepence a pound for manuka, with one penny of that paid in a seals levy). We had a relatively coherent industry of rugged individualists who, by and large, respected each other and for both economic and ethical reasons kept to their own areas.

All that is changing, with high demand bringing high prices for both honey and hives and, increasingly, apiary sites. Varroa has eliminated feral colonies, making more room for domestic hives. Virtually every nook and cranny has been filled up with beehives: there are no longer areas where new beekeepers can set up without impacting on their neighbours.

Why does all this matter? Surely more hives means more honey. It matters because hives consume a large proportion of what they produce. Too many hives and it all gets consumed. Many areas are reporting drastically reduced honey crops through overstocking. They also have dramatically increased costs with extra feeding.

Overstocking in spring sites is making it increasingly difficult to have hives of suitable quality available for vital pollination jobs. It matters because when we get bees resistant to varroa, all those feral hives will come back again. It matters because hives in close proximity spread diseases to each other, including treatment-resistant varroa. It matters because millions of dollars of overseas money are being used to buy or take apiary sites from taxpaying New Zealanders, and it matters because lying, cheating and corruption have entered our industry. Rewarewa honey is being brought to mix with manuka because it has low natural pollen counts. New Zealand manuka is being mixed with Australian honey (which may be more antibacterial) and then sold as New Zealand manuka. Honey is even being heated more than is

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Continued from page 42
necessary to process it to increase its value; certainly not its quality. *[Editor's note: part of this paragraph was deleted as it alleged illegal conduct.]*

Outrageous claims are being made about the benefits of different honeys. All honeys have antibacterial properties and some manuka honeys have properties that make them close to a wonder drug for treating some external infections. There seems to be no real evidence for any other benefits other than a feel-good factor.

I recently stayed in a motel that had active manuka shampoo and conditioner. The health benefit from active manuka as opposed to ordinary manuka in these products is effectively zero. Used properly, the same honey might have saved somebody's life. Don't get me wrong; I really like honey and manuka is a magnificent table honey well deserving a premium, but active manuka is not the elixir of life.

Following is a true story that happened to me. "Your existing beekeeper is ripping you off. He has only 24 hives on your property. I know (despite never having kept hives in the area) that I can run 300 hives. If they produce active manuka (I gave up testing as it just wasn't there) and we get mega kilos per hive (because we are so much better at beekeeping), we will pay you?" Actually, they paid exactly nothing because that's what they got and then moved on to the next farm.

History tells us that prices go up and down. A 50% drop in honey prices would see a lot of people struggling and drops of that magnitude have happened. Areas with too many hives would be completely decimated. I have heard reports of over $500 being paid for beehives. Banks and lenders—not to mention borrowers—would do well to remember that a hive is only as good as its beekeeper and can go from live to dead in a matter of weeks. Experienced and competent beekeepers tend to lose five to 10% of their hives over winter. Inexperienced beekeepers can do very well if they are not overcommitted but one third to one half of their hives dying the first year or two is not uncommon, especially with varroa helping them along.

I remember a tragic case well before varroa where all 1000 hives belonging to a person had to be destroyed because of disease. I recently heard of one rapidly expanding beekeeper who not only had to burn several hundred hives, but he also apparently failed to report his actions.

I wrote this letter partly because my business is being threatened and I admit to self-interest. I wrote this letter because I believe things need to be said publicly, not just privately. I wrote this letter because I had two requests for help in one day, both to do with AFB. I helped one person and not the other. In the past I have always helped and never charged anybody, but some of my acts of kindness have come back to bite me. It is a sad day when you have to weigh up helping somebody against the potential harm they may do to you in the future.

I have asked that this letter be published anonymously not because I don't stand by what I say, but because I really and truly feel threatened and intimidated by the actions of some companies involved with beekeeping.

Standing still isn't an option

By Colin McLean, Great Barrier Island

I'm not as involved in the NBA as I used to be; it's partly to do with where I live now and probably how long I've been around bees. These days I'd rather talk about something else, like fishing!

When I first got interested in bees about 30 years ago, the industry was very different. Back then it was mostly kiwifruit pollination in the Bay of Plenty, a small number of hives into pipfruit and stonefruit and for most of us, honey production was very much how we made a living.

You couldn't sell manuka honey and beekeepers fed it back to the bees. Clover was king and the right price was only for the white honey.

Beekeeping was pretty much scratching an income and hoping for a good honey crop, about one year in three to keep you in business—I'm serious! Diesel was 40c a litre and we paid 41c a hive to the NBA. The Apiaries Act was a great piece of legislation and everything was sweet, so to speak. Back then there were a larger number of small packers focused on the domestic market, some honey was exported and opportunities weren't that available.

I guess to most of you this is all rather irrelevant, but the current state of the NBA and funding for the industry has come about by the government changing legislation. The dynamics of the industry have changed where marketing and selling of honey has a much higher profile. The attitude of funding the industry and the NBA is still stuck in the past; i.e., the beekeepers or producers are expected to front the cost. I think you need to consider that many of the outcomes that packers of honey would like to see should be funded by them as well. A value placed on honey that contributes to the industry could change people's attitudes.

Other businesses, including the many entrepreneurial types (which have been good for our industry) get a free ride.

Actually free ride isn't the right term, as lots of businesses promote bees through their own work and their own spending on their own businesses, which ultimately is for their own benefit.

The NBA was established to represent and address the concerns of beekeepers, but its role these days involves a lot of work with different types of legislation, media, research, PR, education, a glossy magazine and trying to hold the NBA together financially. The NBA was funded by a hive levy under the Apiaries Act. While I don't advocate turning the clock back, beekeepers made a rather a big mistake by deciding that membership and funding of this industry-good organisation should now be voluntary. So, do you think dog registration or a warrant of fitness for your car would work if it were voluntary? I don't think so!

The government wants an organisation to represent the beekeeping industry, but they have made the rules unworkable, and are

also not prepared to come on board and make it work for the industry.

Perhaps beekeepers could pay a levy per kilo of honey they sell in the drum and people who pack honey could pay a levy per kilo for what they sell. I can hear the protests already! If the domestic market comes under the RMP-type system then it should be achievable.

While no system is going to be perfect, as it stands now I pay a voluntary levy to support the NBA. I pay about the same to the PMP to control AFB, which I haven't had for 25 years. I also pay the same for tutin testing, which isn't an issue where I live, and I pay the same for residue testing under my RMP when most of that honey is sold in New Zealand. There is a lot of inequity in the system now that I am legally required to pay.

Until the important people in the industry come up with a workable financial structure, the beekeeping industry will continue to struggle along as it has for a while. I still believe the NBA has the ability with the right funding to do this—their greatest resource is its members; i.e., you! And as someone pointed out to me recently, people were more involved in the NBA in the past when they had to pay a levy. The 'volunteers' who help run the NBA do so at a high cost on a personal level, and in many cases a significant financial cost to their businesses, there are also many hobbyists who contribute enormously to the NBA: these people deserve your support. If you're not a member of the NBA then ask yourself, why not? Do you really have a good reason not to be?

Having said that, the bigger picture needs sorting. There has been a lot of talk but little to show for it. One thing that beekeeping has taught me is to be decisive and to go forward, and while I might make a few mistakes, standing still isn't an option.

NBA 2015 Membership Year

The National Beekeepers Association of New Zealand

A copy of the 2015 membership categories and subscription rates appears on page 38 of this Journal issue.

Busy work plan for NBA in 2015

The NBA has a busy work plan looming in 2015. The first-ever national Bee Health Survey will hopefully get under way in autumn in conjunction with BIG and the Ministry for Primary Industries, and we have an important GIA work plan, making sure we can report to members on the value—or otherwise —of GIA. And that will take a lot of work.

Also looming is more work with MPI on the issue of Import Health Standards around honey imports into NZ. This is something the NBA is particularly keen to protect beekeepers from.

Change of financial year

So as we gear up for all that next year, we are also beginning the process of changing our subscriptions financial year to a 1 April–31 March year to make cash flow around subs time easier for members.

While that change won't occur until 2017, we will run the next three years as 13-month subscription years to make sure the NBA is not caught short financially when we do change over in April 2017. The 13th month will be accumulated and held in reserves until 1 January 2017. So, it's now time for subscriptions for the 2015 year (the first of the three 13-month years).

Invoices

Invoices will be dated—and due on—January 1, 2015. They are being sent to all current NBA members. While there has been a small increase in subscription rates, as agreed at the recent NBA AGM, increases have been kept as small as possible.

Payment options

- Online banking
- Credit card payment via shopping cart on www.nba.org.nz from 1 October 2014
- Cheque

Instalments

Those wishing to make regular instalments throughout the year, please contact the Management Team on 04 471 6254 or email pauline@nba.org.nz

Please note: the 2015 issues of The New Zealand BeeKeeper journal will only be sent to those members who have paid their membership subscription invoices by 1 January 2015. However, any backdated issues will be sent once payment is made.

Lapsed membership

A reminder that membership will be deemed to have lapsed if membership subscription invoices have not been paid by 31 March 2015.

New members

The NBA welcomes new members. Please contact the Management Team for any enquiries on 04 471 6254 or email pauline@nba.org.nz

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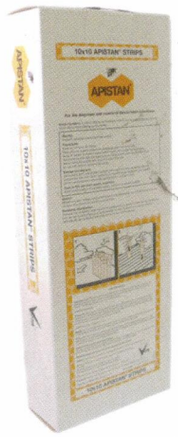

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Waikato Branch

Kia ora, everyone. Three things to report:

Conference update

We have decided on next year's conference venue. No, not Rarotonga but the next best thing: Wairakei Resort!

The hotel sits on 68 hectares of land, with wide-open spaces, two hot pools, a golf course and 187 hotel rooms.

A heritage part of the hotel has been kept in the 1970s-era style when it was part of the Tourist Hotel Corporation (the Chateau Hotel was also part of the THC). All of the other rooms are currently being refurbished, so will be beautiful when we get there.

Taupō township is only a five to 10 minute drive away, where other accommodation is available and of course, overlooks Great Lake Taupō.

Bees

All is going well, they are trucking in the pollen and podging up. We're having typically wet and stormy September 'spring' weather. I have seen quite a few beekeepers out and about with their sugar tanks on the back of their trucks, so 'it starts'!

A Sting in the Tale

This book has recently been published, written by Dave Goulson. It's all about bees, and bumblebees in particular: fabulous, funny and informative. If you get some spare time and like reading you will love this book. *[Editor's note: check out Frank Lindsay's review of this book in the September journal.]*

That's all from me—a bit busy!

- Barb Cahalane

Bay of Plenty Branch

It's mid September and the weather is slowly warming up, but the temperatures have been cool for the most part in the BoP.

There's been lots of activity around apiary sites. I've had reports of a few more winter losses, with varroa and wasps possible causes. The first grafting is planned for next week.

Zespri is planning a field day to discuss pollinating covered orchards. The area of covered kiwifruit is increasing and there are significant issues both in achieving effective pollination and dealing with rapid reduction in hive strength. Many beekeepers choose not to pollinate covered orchards and prices charged are higher for those that do; around $400+ per hive. *[Editor's note: see page 35 for a report from Zespri and page 21 for a report on Branch training activities.]*

- Greg Wagstaff

Hawke's Bay Branch

Spring has sprung but not in Hawke's Bay. Following one of the nicest warmest winters anyone can remember, August has been a big disappointment. It has been almost continuously cold, wet and cloudy and some of the early pollination is likely to be very poor.

We have had a kind offer from an experienced honey judge to help with a honey competition in Hawke's Bay. It can be hard to get people to be enthusiastic but we would really like to get some sort of local honey competition under way, as this will increase people's understanding of both hives and hive products and be a great social event that all could participate in. I would love to hear from anyone interested, both commercial and especially hobbyists.

- John Berry, Branch President

Southern North Island Branch

We have had a great spell of weather in the Manawatu and Wanganui areas: those that got into gear early and started producing queen cells have been lucky. Other parts of our area have not enjoyed the fine, warm, sunny days that we have had.

Recently there was an accident in the Wairarapa with a truck carting beehives. It rolled several times, reducing most of the hives to matchwood, leaving a huge mess for local beekeepers to clean up. But most importantly, it is a reminder to us all to ensure that hives are securely tied down and that the driver must concentrate while driving. *[See photo on page 21.]*

Nelson Branch

The recent warm weather appears to have been good for the bees, with most people feeding and reasonable numbers of brood and young building. Unfortunately, everyone who I have caught up with has indicated that varroa numbers were high out of winter and without the early placement of strips, made things more difficult to build up hives. I expect that many will be involved for the fruit pollination season now or soon.

In other events from the region, the Nelson Beekeepers Club recently had their annual election of the executive that resulted in a new president, with the existing secretary and treasurer re-elected for another term. Thanks to Scott Williamson for his past role as president: his guidance, enthusiasm and humour have helped build the hobby club to what is today. The same night Peter Brunt gave a very interesting talk on introducing beekeeping to Zimbabwe. You don't want to see the size of their hive beetles!!!

We had a great inaugural informal coffee meeting at the Pelorus Bridge Café, attended by several beekeepers from Marlborough and Nelson, to discuss how bees, beekeeping and the rugby were going. Everyone agreed it was a great way to communicate, exchange ideas and keep in-touch. Thanks to Renee for getting this idea off the ground. All were keen for another with maybe Lake Rotoiti suggested as a venue. Let's hope the coffee and muffins are as good and we see others from the region and maybe the West Coast attending.

Recent media documentaries and Bee Aware Month have definitely raised interest in bees in the region. It is always great to see the enthusiasm of young children with the school visits, which were conducted as part of this month's activities.

- Jason Smith

Otago Branch

See notice on page 25.

Population control, bee style

By Frank Lindsay, NBA Life Member

As I write this (early September), I'm doing a full inspection of my hives: looking at every frame for disease, identifying old queens, assessing the hives' honey stores and replacing old frames and any gear that is broken or rotting.

I didn't have good varroa control going into autumn. Some colonies are now less than a four-frame nuc in size while others are about three weeks off queen cell development, with bees filling two supers with perhaps three full frames of capped brood that will be emerging in a week. That means another 12,000 bees will be taking over brood nest duties, allowing the brood nest to expand and enabling another 2,000 older bees to become pollen or nectar collectors. This also may require me to add another super.

A lot of hobbyists don't really take in what they are observing in their hive when they go through it. I can understand that they get mesmerised by the sheer number of bees covering the frames, but reading the frames and understanding how the hive is developing and how it compares to the norm for an area is really important.

Each area of New Zealand is different, with different microclimates to which the bees respond. It might surprise some to learn that South Canterbury reaches 20°C (the temperature required for queen mating) before the rest of New Zealand. Northland now has a dribble of mānuka coming into the hives, while hives way down south are just starting to expand.

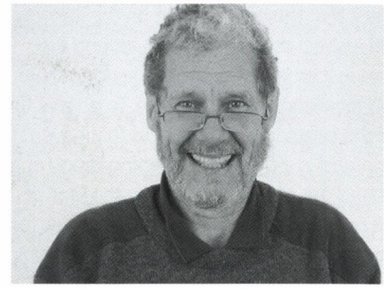
October can see the first of the bush flows in my area (Wellington), which can cause swarming but for some, the main flow is two months away. You want the bees expanding to reach a population of at least 40,000 bees at the start of the main honey flow. As a general rule of thumb, a full-depth super completely full of bees contains about 25,000 bees, so you need at least two full-depth (or three ¾-depth) supers full of bees and brood covering eight frames at the start of the honey flow, and at least the same number of supers on a hive ready to receive and store the nectar as it comes in.

The bees are stimulated to fill all the storage combs and when these are full, they will relax their work effort, waiting for more storage space to be come available (if there is brood emerging, the beekeeper adds another super). Or perhaps the bees will turn to reproduction—swarming.

Super early and if you don't have all drawn frames, intersperse drawn and foundation frames to get the bees into the supers and drawing those frames. Bees see drawn frames as storage space. Foundation frames do not stimulate bees, so they have to be encouraged up on to foundation by bringing up an outside frame that contains nectar from the super below. The bees will crowd over it and spare house bees full of nectar will hang in chains, using their bodies for storage while producing wax flecks that will be added to the foundation wax, drawing out the cells.

Drawing out frames is a major undertaking for the bees and they have to be well fed to do this; i.e., they need a strong flow of nectar coming into the hive or something that represents that.

In some rural areas, a lot of these early nectar and pollen sources are not available, especially in intensive dairying areas. On your next inspection (every nine to 10 days now), make sure the hive has ample pollen frames. That is, a couple of frames of pollen against or near the brood area and perhaps a good 15 mm of pollen around the brood and the equivalent of three frames of capped honey. If you don't have this in your hives, feed a pollen substitute and some sugar syrup to keep the queen laying to produce those bees.



Reducing the bee population

Some hives will bolt ahead and will start queen cell development along the bottom and the top bars as well as in any convenient space around the edge of the comb, starting in the second super where it's warmer, then gradually throughout the rest of the hive.

Check for these by tilting back the top brood super and looking along the bottom bars for developing queen cells. Once one of the queen cell buds is seen with an egg or larvae in it, the hive must be fully inspected, brood frame by brood frame to remove the queen cells. Before cutting out any queen cell, make sure there are eggs in the open brood area. Quite often we inadvertently roll a queen by pulling a brood frame out of the middle of the hive without first making space by removing an outside frame, or squashing her when we drop a frame back into the hive while she's hiding under the bottom bar. Make sure you know where the queen is before putting back frames, or at least slide them in gently so any bees likely to become trapped can get out of the way.

To stop the bees building more queen cells, you have to reduce the number of bees in the hives or give the hive more room, or perhaps reverse the brood chambers to concentrate the majority of the brood into the bottom super. Just giving more room (another one or two honey supers) may not relieve the situation as once swarm preparations have started, it can be hard to stop the bees from making more queen cells. In this case the hive has to be artificially swarmed. Most bee books give an explanation on how to do this.

One way of reducing the bee population is to remove two or three frames of capped ➜

and emerging brood from the outside of the brood nest (plus bees) and give these to a smaller hive. Again, before you do this, check that the queen is not on the frames and inspect the capped cells around the bees just emerging in both the donor hive and receiving hive for disease. To do this, flick off the cappings of those cells that haven't emerged in a patch of emerging brood and around the edges. Don't go by the look of the cappings as it can take quite a while for a cell to become sunken and perforated by investigating bees.

I have just found a couple of hives that have five to seven cells of AFB around a 75-mm circle of emerging brood. This means that these two hives picked up the infection within the last month, as no other brood is showing signs of slightly off-white to light-brown larvae under the cappings. Without flicking off the cappings, I could have easily concluded that I had a healthy hive and swapped out some brood, thus spreading the infection.

Another alternative is to give the small hive a boost in bee numbers by shaking off the nurse bees from a brood frame containing uncapped larvae at the entrance of the weaker colony. Any field bees that were on the frame will return to the original hive and the nurse bees will walk into the weak hive unopposed, boosting the hive's bee population.

Removing a frame without removing the queen

Some will have difficulty seeing a queen amongst all the bees. Look for a clear area and bees all facing into a circle; even then, some are hard to spot.

Here is an alternative safe method of removing a frame without the queen. Shake all the bees off the selected frame(s) into the hive and put it into the centre of another super. Fill the gaps left after pushing the rest of the brood frames together to form a compact brood area and place a queen excluder on top of the brood super. Place the super containing the shook frames on top and close the hive. Within a couple of hours, the nurse bees will have come up through the excluder on to the brood frame(s) again. These can then be removed, safe in the knowledge that the queen is below.

If you have to put honey supers back on the hive, put another queen excluder between these and the super with the selected frame(s). This method can also be used to make up nucs by adding frames of honey and pollen to the outside of the shook brood frames. Remove to another apiary and add a queen cell or a mated queen when the nuc is on its new site or do the reverse; i.e., remove the bottom hive away and leave the nuc on the original site. The returning field bees will boost the nuc population considerably.

Another simple alternative is to swap hives around, weak for strong, so that the field bees return to their home colony and boost bee numbers. However, this method must be done during a flow, as sometimes the incoming field bees will recognise the queen in the hive as foreign and will ball and kill her. You can prevent this by placing her in a queen cage with candy in the exit so she is released in a couple of days. Once bee numbers are up and the queen is laying, frames of emerging brood can be added to boost bee numbers further and replace the field bees that will by now be dying off.

Inspecting and equalising hive numbers

Commercial beekeepers will have spent last month equalising their hives. All will have new queens and are being fed if they don't have sufficient honey and pollen reserves.

With all hives at the same population and development, it's easy to inspect a hive in a few minutes. Upon going into an apiary, one observes the entrances of each hive and mentally notes those hives that have more bees and fewer bees flying. These are perhaps the hives that may need attention, either by reducing the population or boosting it.

It also could be that one or two hives have found a really good nectar supply and are flying in numbers. In that case, heft all the hives to see that they are still heavy. Starting at one end and depending upon the hive set-up (singles or on pallets), slide the hive forward a little on the bottom board and tilt the hive back so you can see along the bottom bars of the bottom super. If the bees are hanging below eight frames, the hive is full of bees and needs another super or two.

Set the supers back on the bottom board, then split the brood nest supers and look along the bottom bars for queen cells, while noting how many frames have brood comb by looking up into the super and down into the lower super. We want the majority of the brood frames to be in the bottom super. The supers may have to be reversed two or three times during the spring to keep the majority of the brood in the bottom super and provide space above for the queen to lay.

Then look down into the frames of the top super for capped honey. (Most commercial beekeepers simply add another three to five litres of sugar syrup to each hive's feeder.) Note the condition of the hive so you can tell on the next inspection whether bee numbers have increased. You need to look more intensively at any hives that haven't taken down the syrup, have queen cells or aren't building in numbers.

A hive with a failing queen; i.e., spotty brood on the last laid area (around the outside of the latest frame) should have the queen replaced. Find the queen and squash her quickly, then remove her from the hive. Introduce a nucleus with a young raising queen and unite it to the colony.

An alternative is to swap the queens: place a new laying queen from a nucleus on to where the old queen was on the frame, then place the old queen back into the nuc on the same frame the new queen came from.

Because both queens are producing the same amount of pheromones, the bees don't notice any difference and the new queen takes over. You can tell immediately if she is accepted. She will bulldoze her way through the bees on the frame without them taking much notice of her (Taber, 1987, p.124). If the bees start climbing on her and are starting to ball her, pick up the queen again, shake the bees off the frame and install the queen under a push-in cage on a patch of emerging brood. The cage and queen is released through a candy plug or is hand released on the next nine-day visit (Manley, 1946).

Return the nucleus to base and install a protected queen cell so that the old queen is superseded. Once the new queen has been laying for a month, she is ready to replace another failing queen or to be put in a full-sized hive.

My inspections are a little more intensive that those described above, as I do a quick AFB check every time I open a hive. I go into the brood nest: start by removing an outside frame and lean it against the hive beside the entrance. I move frames across until I see a

patch of emerging brood, then will inspect it more fully by flicking off the cappings of some brood that hasn't emerged or is about to emerge. I want to pick up AFB early, well before I add extra supers to a hive. Most beekeepers shouldn't need to do this after they have done a full spring inspection of their hives.

By using such methods, commercial beekeepers are able to work quicker and attend to more hives than a hobby beekeeper. They are only dealing with hives that need attention. If any of you have a better or different system that works for you, please send me a few lines to lindsays.apiaries@clear.net.nz so we can pass these methods on to our newer commercial beekeepers.

Advice for first-time beekeepers

For the new beekeepers, getting your first hives is an exciting time. A four-frame nucleus hive should contain at least 10,000 bees. It should have at least two and a half frames of mostly emerging brood and a frame with honey and pollen and bees covering all the frames.

These frames are then transferred into a full-sized super and fed sugar syrup at a litre a day until two supers of frames are drawn out and filled with brood and honey.

When I first started beekeeping, I couldn't keep my hands out of the hive, investigating what was going on every three days. This disturbance meant that the hive didn't do all that well but despite the new beekeeper, it survived.

We all have this curiosity and without it we wouldn't learn, but it also meant I didn't get any honey for a couple of years. Better to start with two nucs and leave one alone so that it develops normally while you can see what's going on with the other. If you kill the queen, you have a back-up supply of eggs from the other nuc so the bees can produce a new queen.

All hobby beekeepers should try to produce a four-frame nuc from their existing hives this season, starting in early December. This can be used to requeen a failing queen or if not required, sold to a new beekeeper. There is nothing worse than getting all enthusiastic about beekeeping, only to find it hard to obtain bees. We have several queen breeders producing nucs in New Zealand but most of these are ordered/taken by commercial beekeepers. Making a nuc and producing a few queens extends your knowledge.

The important thing to remember when starting a new hive is that until you have 10 frames fully covered in bees (five to six frames with brood), it needs assistance to grow. Feed it until it reaches this size. Those starting nucleus hives in the autumn will need to feed them right up until it turns cold to ensure the hive has enough bees and honey to survive the winter.

In looking at the frames from a number of beekeepers who lost hives this winter, I found most died from varroa; perhaps because treatments were applied too late or the hives weren't monitored and re-treated after the robbing season had finished. Others died because there was only a small population of bees in a big box. The bees couldn't control the temperature in the cluster as well as move the cluster to where the honey was. If you have only five frames of bees going into winter, put them in a smaller box, or use follower boards and move the honey frames to beside the bee cluster so the bees can use the honey.

Things to do this month

Check feed, check pollen.

Check for AFB: get your COI in the post before the end of the month.

Cull old frames, or at least move them to the outside of the super so they can be removed at the next inspection.

Check varroa mite levels. We learnt at conference that hives with a 5% varroa level don't produce much honey. At or below a 1% level, a hive produces 100% more honey.

Add foundation frames into and above the brood nest to keep the bees busy. Fit foundation into comb honey frames. Super hives just before the flow starts.

References

Manley, R.O.B. (1946). *Honey Farming.* Faber & Faber Ltd.

Taber, S. (1987). *Breeding Super Bees.* Ohio: A. I. Root Co

Left: Ian & Pat Berry celebrated their 60th wedding anniversary at the inaugural New Zealand Apiculture Industry Conference, Wanganui, June 2014. Left: Ian and Pat cutting their bee-themed anniversary cake at the Conference dinner.
Right: Pat & Ian Berry with their card of congratulations from Queen Elizabeth II. Photos: Frank Lindsay.

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www.ecroyd.com

CLUB CONTACTS AND BEEKEEPING SPECIALTY GROUPS

Auckland Beekeepers Club

www.aucklandbeekeepersclub.org.nz
Meets second Saturday monthly at Unitec, Pt Chevalier, Auckland
Kim Kneijber
P: +64 9 418 1302
E: kimk_bees@hotmail.com
Carol Downer
P: +64 9 376 6376
E: thefairy@xtra.co.nz
Please send all correspondence to:
PO Box 44-427, Pt Chevalier 124, Auckland 1022

Franklin Beekeepers Club

www.franklinbees.co.nz
Meets second Sunday each month at 10.00am for a cuppa and discussion. 10.30am open hives.
Contact: **The Secretary**
PO Box 1082, Pukekohe, Auckland 2340
E: graham@thewheelers.co.nz

Waikato Domestic Beekeepers Club

www.waikatobeekeepers.org.nz
Meets every third Thursday (except January) at 7.30 pm. For prospective members: please contact the Secretary for venue meeting place.
Peter Gray, President
P: +64 7 855 0290
E: president@waikatobeekeepers.org.nz
Maryanne Partridge, Secretary
P: +64 7 825 2691
E: secretary@waikatobeekeepers.org.nz

Wanganui Beekeepers Club

Meets every second Wednesday each month (except Jan), at 7.30pm, at Canaan Apiaries, Mosston Road, Wanganui.
Neil Farrer
P: +64 6 343 6248
E: nfarrer@xtra.co.nz

Manawatu Beekeepers Club

Meets every fourth Thursday in the month at 7.30 pm
Newbury Hall, SH3, Palmerston North
Matthew Telfer, Chairman
M: 021 0273 2875
E: matt@manawatubeeclub.org.nz
Mali Swanney, Secretary & Media Liaison
M: 021 0225 4124
P: 06 376 8247
E: secretary@manawatubeeclub.org.nz
(NB: Preferred address for email correspondence)
Mailing address: PO Box 4103, Manawatu Mail Centre, Palmerston North 4442

Wellington Beekeepers Association

www.beehive.org.nz.
Meets first Wednesday of the month (except Jan) in the Johnsonville Community Centre, Main Hall, Moorefield Road, Johnsonville. 7 pm Beginners' session, 7.30 pm main meeting.
Richard Braczek, President
5 Tyndall St, Waiwhetu, Lower Hutt 5010
P: +64 4 973 3028
E: ibraczek@paradise.net.nz
Suzanne Basiora, Secretary
26 Glen Rd, Raumati Sth, Paraparaumu
P: +64 4 904 2365
E: sbasiora@gmail.com

Rotorua Honey Bee Club

Meets monthly
Kim Poynter, President
374B Hamurana Rd, RD7, Rotorua 3907
P: +64 21 926 937
E: birchwoodfarm@xtra.co.nz
Jude Thomas, Secretary
4 Rika Place, Kawaha Pt, Rotorua 3010
P: +64 7 348 6227
E: jude.ken@xtra.co.nz

Nelson Beekeepers Club

www.nelsonbeekeepers.org.nz
Meets first Wednesday Mar–Dec inclusive, 7–9 pm
Waimea Lounge, Richmond A&P Showgrounds
Lower Queen Street, Richmond.
Ian Henbrey, Secretary
P: 03 548 6220
M: 027 546 8283
E: tasmanbees@gmail.com

The Buzz Club Otaki

Meets every third Wednesday of the month at 7 pm at the Waitohu School Hall, Te Manuao Road, Otaki.
Rusty Barrett, Chairman
P: +64 6 362 6950
Sheree Bishop, Secretary
P: +64 21 298 2801
E: thebuzzclubotaki@gmail.com

Christchurch Hobbyist Beekeepers' Club

www.chchbeekeepers.org.nz
Meets on the first Saturday of each month, August to May, except January for which it is the second Saturday, at 681 Cashmere Road, commencing at 1.30pm.
Peter Saunders, President
Myrtle Davey, Secretary
E: chch.beekeepers@gmail.com

UMF® Honey Association (Inc)

www.umf.org.nz
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M: +64 27 441 8508
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NBA Branches

Refer to Branch contacts (page 54) to request details of Branch meetings.

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NZ Honey Bee Pollination Association

Russell Berry
P: +64 7 366 6111

NZ Queen Producers Association

Russell Berry
P: +64 7 366 6111

NZ Honey Packers and Exporters Association Inc

Contact: Allen McCaw
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E: amccaw@clear.net.nz
Mary-Anne Thomason
P: +64 6 855 8038

Bee Products Standards Council

Dr Jim Edwards, Chairman
P: +64 6 362 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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Maraetai
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Masterton 5810
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Email: happy.ferris@xtra.co.nz

Central South Island Ward
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Email: birdsnbees@xtra.co.nz

Waikato Ward
Stephen Black
Bees-R-Us
685 Uruti Road, RD48
Urenui 4378, Taranaki
Ph: 06 752 6860
Email: bees@beesrus.co.nz

Bay of Plenty Ward
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PO Box 16156, Bethlehem
Tauranga 3147
Ph: 07 579 2554
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Upper South Island Ward
Ricki Leahy (President)
151 Mangles Valley Road
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Ph/Fax: 03 523 9354
Email: beechdew@farmside.co.nz

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Russell Berry
2488 State Highway 5, RD 3
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NBA Branches: First named is President/Chairperson. The second named is Secretary.

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Interested parties wishing to start this branch up again, please contact Kim Singleton 09 536 6516 or beewise2005@gmail.com

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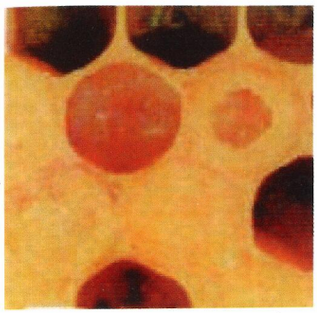
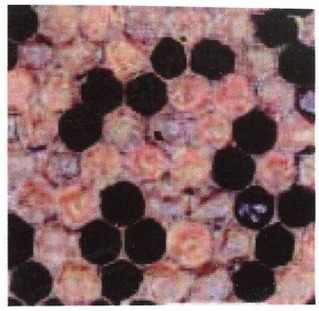
Email: maureen@wildforage.co.nz

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.

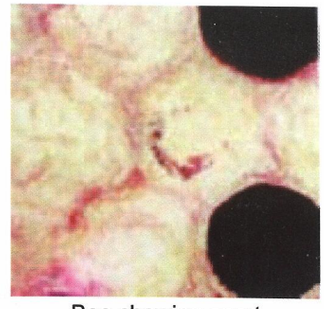
AFB RECOGNITION & COMPETENCY TEST PHOTOS



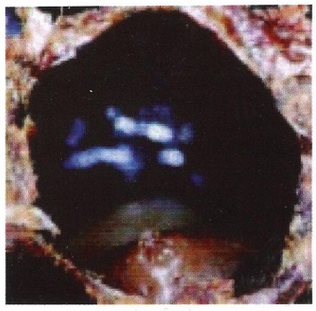
Unfinished cappings of healthy brood (yellowed)



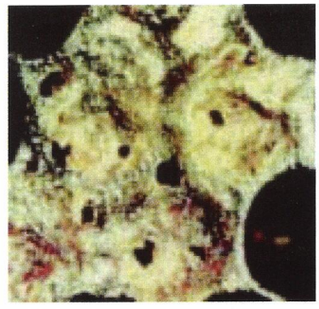
Cappings of brood infected with AFB



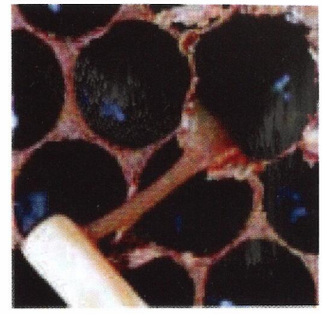
Bee chewing apart prior to emerging



AFB diseased larvae

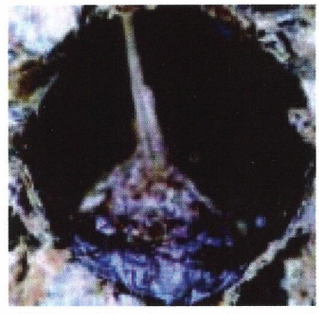


Holes in cappings of brood infected with AFB

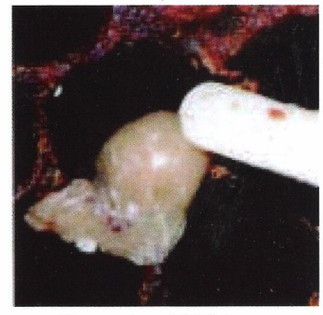


AFB "ropiness" test

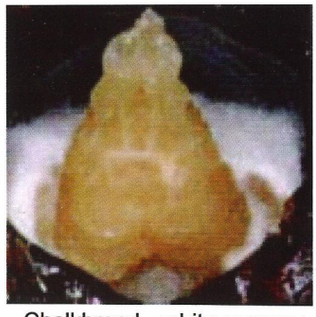
PMS larva with varroa



AFB—older, darker, diseased pupa

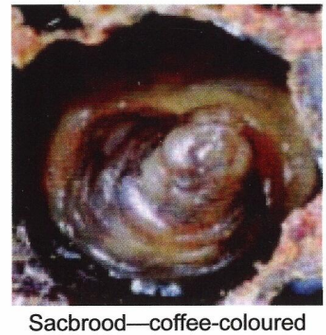


Removing PMS larva

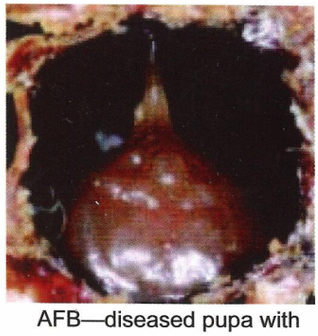


Chalkbrood—white mummy

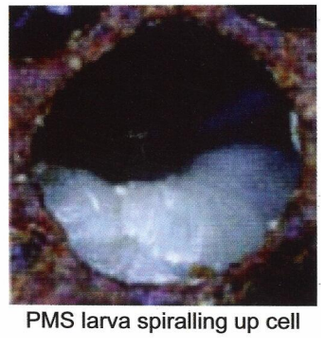
Healthy prepupa



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.

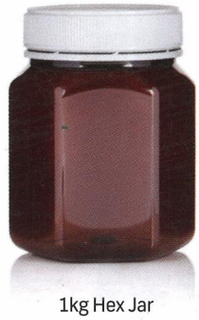
360ml Round Pot

500gm Round Jar

340gm Round Jar
(coming soon)

250gm Round Jar

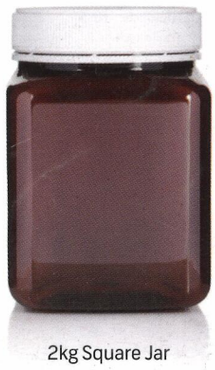
2kg Hex Jar



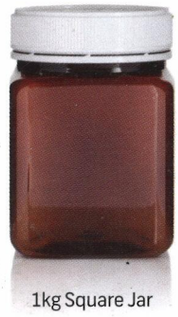
1kg Hex Jar

500gm Hex Jar

250gm Hex Jar



2kg Square Jar



1kg Square Jar

500gm Square Jar

250gm Square Jar

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