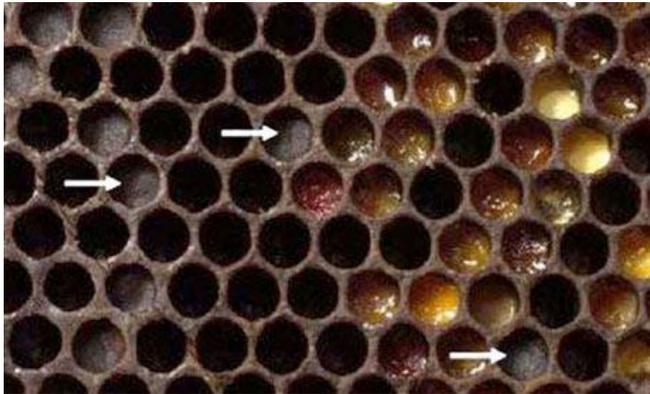


Honeybees 'entomb' hives to protect against pesticides, say scientists

Fiona Harvey, environment correspondent. guardian.co.uk, Monday 4 April 2011 17.21 BST

By sealing up cells full of contaminated pollen, bees appear to be attempting to protect the rest of the hive



'Entombed' pollen is identified as having sunken, wax-covered cells amid 'normal', uncapped cells. Photograph: Journal of Invertebrate Pathology

Honeybees are taking emergency measures to protect their hives from pesticides, in an extraordinary example of the natural world adapting swiftly to our depredations, according to a prominent bee expert.

Scientists have found numerous examples of a new phenomenon – [bees](#) "entombing" or sealing up hive cells full of pollen to put them out of use, and protect the rest of the hive from their contents. The pollen stored in the sealed-up cells has been found to contain dramatically higher levels of pesticides and other potentially harmful chemicals than the pollen stored in neighbouring cells, which is used to feed growing young bees.

"This is a novel finding, and very striking. The implication is that the bees are sensing [pesticides] and actually sealing it off. They are recognising that something is wrong with the pollen and encapsulating it," said [Jeff Pettis, an entomologist with the US Department of Agriculture](#). "Bees would not normally seal off pollen."

But the bees' last-ditch efforts to save themselves appear to be unsuccessful – the entombing behaviour is found in many hives that subsequently die off, according to Pettis. "The presence of entombing is the biggest single predictor of colony loss. It's a defence mechanism that has failed." These colonies were likely to already be in trouble, and their death could be attributed to a mix of factors in addition to pesticides, he added.

Bees are also sealing off pollen that contains substances used by beekeepers to control pests such as the [varroa mite](#), another factor in the [widespread decline of bee populations](#). These substances may also be harmful to bees, Pettis said. "Beekeepers - and I am one – need to look at ourselves in the mirror and ask what we are doing," he said. "Certainly [the products] have effects on bees. It's a balancing act – if you do not control the parasite, bees die. If you control the parasite, bees will live but there are side-effects. This has to be managed."

Pesticides were not likely to be the biggest single cause of bee deaths, Pettis said: "Pesticide is an issue but it is not the driving issue." Some pesticides could be improving life for bees, he noted: for many years, bees were not to be found near cotton plantations because of the many chemicals used, but in the past five years bees have begun to return because the multiple pesticides of old have been replaced with newer so-called systemic pesticides.

Studies he conducted found that bees in areas of intensive agriculture were suffering from poor nutrition compared with bees with a diverse diet, and this then compounded other problems, such as infection with the gut parasite [nosema](#). "It is about the interaction of different factors, and we need to study these interactions more closely," he said.

The entombing phenomenon was first noted in [an obscure scientific paper from 2009](#), but since then scientists have been finding the behaviour more frequently, with the same results.

Bees naturally collect from plants a substance known as [propolis](#), a sort of sticky resin with natural anti-bacterial and anti-fungal qualities. It is used by bees to line the walls of their hives, and to seal off unwanted or dangerous substances – for instance, mice that find their way into hives and die are often found covered in propolis. This is the substance bees are using to entomb the cells.

The bees that entomb cells of pollen are the hives' housekeepers, different from the bees that go out to collect pollen from plants. Pettis said that it seemed pollen-collecting bees could not detect high levels of pesticides, but that the pollen underwent subtle changes when stored. These changes – a lack of microbial activity compared with pollen that has fewer pesticide residues – seemed to be involved in triggering the entombing effect, he explained.

Pettis was speaking in London, where he was visiting British MPs to talk about the decline of bee populations, and meeting European bee scientists.



"Australian Honey Imports issue" from Frank Lindsay :

MAF is working their way towards introducing honey into NZ under the free trade agreements. They have only a couple of things to cross off now and we will pay the consequences for the risk our government takes. Expect to hear something around Christmas on the Australian imports.

GIA's Government Industry Agreements or as somebody said Government Imposed Agreements – where industry pays for Biosecurity lapses instead of them paying for it all, the costs involved will be negotiated with each industry group. If you have been reading papers lately you will have noticed the Fed Farmers is opposed to it. Actually when thinking about this, Government are asking us to “subsidise” importers. We thought these went out with the Muldoon Government but this Government is set to return them. Instead of putting funds aside for future breaches of our Biosecurity by increasing the charges associated with importing products, MAF want us to now pay half the costs involved. They don't want to increase the costs to importers as it could increase the goods on our shop shelves – they can't interfere with “free trade”. Nothing about public good our bees do or in fact what our industry is worth to the country. How are 878 beekeepers going to pay millions of dollars for an exotic disease incursion response? If Government's response is to put a levy on us all, to cover these costs, commercial beekeepers will all be bankrupt in no time.

About the Apiary

By Frank Lindsay

It seems in my area at least that spring has arrived again. Lots of spring natives are flowering. I even saw avocados starting to flower again this month. God knows what this is going to do for the flowering in the spring. Still bees are expanding and putting fresh nectar in and around the brood nest. Luckily the mites (I'm late putting in treatments) are holding them back and stopping them from swarming.

All I believe will be a little disappointed with their honey crop from a season that started so well. Perhaps it will be a good one next season. We'll just have to keep an eye on the La Nino/ El Nino situation as this seasonal shift affects our beekeeping especially in the west of the NI.



An attempt to avoid another confession from a bad beekeeper - Jo Salisbury

Q. I have a whole box of capped crystallised (and therefore fermenting) honey frames which I would like to use. If they weren't still on the frames I could of course microwave them and use for comb honey, but I already have plenty of comb honey. I have put plenty of honey back on the hives so they don't need it and anyway some of it is what I put back on after my abortive attempted winter extraction last year and my bees didn't manage to reprocess them. So... What can I do with it? I was thinking of just bunging the whole lot in a pot and gently heating it up then cooling, in the hope the wax would float to the top and harden so I could lift it off. Then I planned to use the honey as a base for mead. Would this be a really bad idea??? Will I just get a big sticky mess of mixed honey and wax or is there a chance of this succeeding? I would appreciate the advice of anyone who has tried this, Please contact me on 977 5250 or email salisburynz@yahoo.com or have a chat at the next meeting.



needles for her smoker. She claimed it cured foulbrood and prevented foulbrood from developing.

National Bee Week

John spoke about this. It will occur from 30th May to 3rd June. If anyone from the club wishes to speak to schools we have some club resources. The club will buy some presentation packs of material to use and provide these to members who are speaking in schools. Several members indicated they will be speaking in schools. Let John Burnett know if you wish to have a pack for this purpose. The club approved the purchase of these packs.

Honey Competition

This will occur at next month's meeting, requirements for entry will be advertised in the newsletter.

Meeting ended with supper

Next meeting Wed 1st June 2011, Johnsonville Community Centre. New beekeepers at 7pm, regular meeting at 7.30pm.



Chairman's Notices

Honey Competition

During our next meeting, all honey entries will be judged. As has already been e-mailed to all members, please use glass jars as stipulated. Make sure there are no air bubbles etc.

July Meeting – A.G.M

Please note that the July meeting will be our A.G.M. when all officers and committee members resign. This will be your opportunity to have your say and maybe even help in the running of the club.

Mesh Bottom Boards

Would all members who wish to purchase one of my mesh bottom boards please let me know either at the meeting or by e-mail. They are all assembled and already wax dipped and ready for use complete with corflute for varroa monitoring. \$45 each. Andrew Beach.



In the meantime get the bees up to strength and get some syrup into them so that they have sufficient honey to get them through to spring.

Wasps are now starting to be a real problem. Odd areas are really bad. If you can't find the nests involved, I'll tell you about an alternative that works but I'm not writing about the method for various reasons.

Resistance

Resistance to the present miticide strips is not far away. I have seen the odd mite on a bee after 4 weeks of treatment. I'm yet to test to see whether this is from invasion or that my treatments were not effective. Whatever treatment you are using now, think about how you are going to battle through in a couple of years' time when these strips are not as effective. You don't want to come back in the spring to find all the hives in a number of apiaries dead. Start checking a few hives after the treatments are removed to see how effective your treatments have been especially if you are involved in pollination.

Because we have beekeepers moving hives long distances now into all regions of the north Island, it won't be very long before we will all strike resistant mites. Remember once we have resistant mites, they will travel at the same speed as mites travelled through the North Island - 100 k per hour on the back of a truck.



Single Frame Honey Extractor

At our April meeting member Markus Landvogt presented a single frame honey extractor which is very simple to assemble and therefore an interesting option for backyard beekeepers with one or two hives.

Any honey extractor utilises the centrifugal force which makes the honey flying out of the honey combs. The centrifugal force is proportional to the radius or the distance from centre, the mass of the honey frame and the square of the angular speed. The presented method relies on hefty increase of the radius, allowing a much smaller pace for the revolution.

What is needed is a plastic box with a lid big enough for one honey frame. A cooling rack will provide the distance between the honey frame and the

bottom of the box for the honey flying out. The wax cappings can be sliced off with a hot knife. The rope has to be long enough to tie the box and to provide the long radius for the centrifuge. Simply rotate the box on the long rope around the head and be amazed how easy the honey flows out of the combs.

The presentation including a practical demonstration has been put on Youtube and can be accessed on <http://www.youtube.com/watch?v=U0tbPhWwRfo>.

A club member who has difficulties to believe this method is working or has honey frames waiting for extraction Markus offers to come along and demonstrate the extractor with one of the member's honey frames - free of charge. Call him on 04 382 8503.



Honey Project Sweet Deal All Round

By Vicki Waterhouse – Published in the Manawatu Standard on 12 May 2011.

Massey University researchers are set to play a major role in expanding the country's medicinal manuka honey industry to make it a near \$1 billion business.

The university will develop the husbandry techniques to support the emerging practice of manuka plantation to help improve the quality and reliability of the honey, as well as the quantity, so beekeepers can meet demand for the product.

The research will be based out of Massey's Manawatu site and will be part of a partnership with Manuka Research Partnership Ltd and honey company Comvita. The industry's estimated worth is \$75 million. The aim is to make it worth about \$1b in the next seven years.

University vice-chancellor Steve Maharey said the research could pave the way for Manawatu to become one of New Zealand's, and the world's, leading food research innovation centres.

The research could lead to food giants using Massey as a research ground and create jobs.

Slides

- Frank showed slides of diseases, AFB.
- Some mother daughter queen supersedure is happening at the moment because the bees think it is spring. Ink weed and karaka are flowering at the moment.\
- Check new queen, she should have 3 segments beyond the end of her wing, if not squash her (won't last).
- Spotty laying pattern, investigate, (failing queen, disease or may be OK just new queen)
- Drone comb in the middle of worker cells (failing queen, drone comb usually whole comb or bottom of combs). Turn frame over and check back of comb, may be new eggs.
- Close entrances down to prevent mice invasion.
-

Q. How is the honey crop this year?

A. Worst in 40 years. Because essentially no honey flow since Xmas some hives have starved. Be careful to leave enough honey. In Wanganui one beekeeper harvesting only 6kg per hive. Manawatu good crop. No manuka flow but it won't be compensated for by higher prices as distributors keep 18month stock.

Q. How to feed hives?

A. Best for the bees is to put some honey back on, sugar feeding is possible but lower nutritional value for bees. Hold a couple of frames back, put in freezer for spring feeding. For autumn strength sugar feeling fill a container to 7/8ths with sugar, fill to the top with boiling water.

Q. Have 1 frame of brood dying, silvery grey and c in bottom of cell.

A. Given had varroa infestation 3 months ago probably varroa. Test and possibly retreat (see varroa book for tests)

Q. How do people tie down hives with straps?

A. Hard to get off, rocks on top easier and cheaper (someone demonstrated their strap method to the questioner at the meeting re straps).

Q. Any further information on the kiwifruit PSA disease and associated Nosema Cerana bee disease discovery?

A. Haven't heard anything more but are looking at options.

Q. Could we have a field day on wintering down?

A. Too late in the year to get a good weather day.

Ivan Presented

Had ¾ foundation for sale \$10 per pack of 14/15 sheets.

Ivan's wife is from Russia and is a beekeeper. She had a visit from a the Russian Society. A woman who has been a beekeeper for many years and has 35 hives told of a plant called 'cotton lavender' (*santolina chamaecyparissus*). It is not a true lavender but a member of the daisy family. This beekeeper planted it and used the dried plant instead of pine

However Apivar is not recommended now as it needs about 18 degrees to activate, it is also not to be applied when the honey supers are on.

DECA Course

There is one in Palmerston North on 4 June, otherwise our club will arrange one later in the year. It is recommended new beekeepers leave it until their second beekeeping year so that you have enough experience to recognize different cappings etc in the combs.

Save the Bees Campaign

The green party have a petition on their website which our members can download if they wish and collect signatures for it. As part of this campaign the film Queen of the Sun is being screened and promoted. It is on daily at the Paramount. Many members have seen it, said it was an interesting film with some real characters.

Bee-suits

John can do a bulk order of these, contact John Burnett or sign up on the clipboard at the meeting.

Wax Dipping

Tony Coard advises that Wayne Wilde has had a shoulder operated on so hold off on wax dipping or contacting him for the next month or so.

Legality of Topbar Hives

Currently these may breach the AFB regulations once brace comb is built as the frames are then not removable. If we try to ban them there is a risk of non-registration of hives. Needs to be some regulatory work around this as they are not more exposed to AFB but hive inspection can be the problem.

Siting of Hives on Other People's Land

John has been doing some research. Someone in Auckland is willing to rent out a hive to a household for \$500 per annum, the householder gets the honey and the beekeeper looks after the hive. John has been asked by people to put a hive on a property to pollinate their trees (generally no takers and no offers of \$ from the landowner yet). We changed the food cooperative offer to get a beekeeper to talk to them and they may become beekeepers themselves. One member at the meeting offered to do the same as Auckland and supply and care for hives for a fee in Wellington if we are approached.

Old Gear For Sale From Members

This was discussed, the danger of old gear is that it may have AFB, Frank inspected 4 hives for sale over the internet and 2 had AFB! We said we would let ex members put ads free in the newsletter. An approach may be to add a sentence warning of infection dangers and saying that the club does not vouch for the gear in any way. Most ex beekeepers give the gear away. You should quarantine any 2nd hand gear for 18months and get several brood cycles through then inspect.

"Then, of course, the sky becomes the limit. This is very important to us," he said.

Massey was always keen to back business innovation, particularly with primary industries, he said.

"This project will help develop a high-value industry by cultivating manuka on New Zealand backcountry where traditional farming has been challenging. It's a sustainable option for our hillcountry land-owners and will help meet market demands for medicinal products."

Mr Maharey said improving the supply chain and ensuring the reliability of that supply for medical grade manuka honey would see the industry's value increase.

The potential for its use was huge, he said. "It's very popular all over the world; the whole notion of natural remedies for health is certainly something that's taken off," he said.

"The market is big and growing in the West, but it's already extraordinarily large in Asia. The Chinese, for example, are very keen to avoid moving into a Western style of chemical-based drugs."

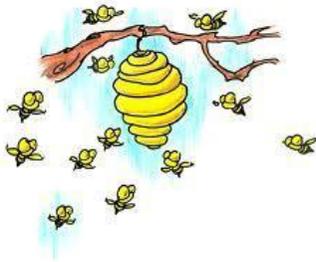
Comvita chief supply chain officer Nevin Amos said the market demand for medicinal manuka products was increasing.

"The research will enable us to improve the yield per hive, increase the number of hives per hectare and grow the land area in manuka plantings," he said.

Dr Amos said fewer than 50,000 of the one million hectares of marginal land were needed for manuka plantations to achieve growth of the industry to \$1b.

Massey's Institute of Food and Nutrition and Human Health head, Professor Richard Archer, said the knowledge developed would help produce manuka plantations capable of greater yields of honey suitable for medicinal products.

Members of the Manuka Research Partnership would use the research to develop plantations. They would also make the information available to others wanting to invest in plantings for production of manuka honey for medicinal products.



Honey in the money

By Sue O'Dowd. Published in the Taranaki Daily News on 12 May 2011.

A Taranaki entrepreneur's dream to develop manuka honey into a billion-dollar industry has attracted government funding of \$850,000.

A Taranaki entrepreneur's dream to develop manuka honey into a billion-dollar industry has attracted government funding of \$850,000.

The Government has announced the funding over seven years as part of a \$1.7 million partnership with Manuka Research Partnership (NZ) Ltd and Te Puke healthcare company Comvita.

Neil Walker, of Hawera, is managing director of Manuka Research Partnership, a consortium that consists of Nukuhau Carbon Ltd, owned by Mr Walker, Taihape apiarist Don Tweeddale, who owns more than 17,000 beehives, and Wairarapa sheep and beef farmer Dan Riddiford.

Manuka Research Partnership and Comvita want to find out what affects yields and activity levels in manuka honey - commercially described as the Unique Manuka Factor (UMF) - and to increase the reliability of supply and the amount of medical-grade manuka honey.

New research in Britain suggests manuka honey could play a role in the battle against antibiotic-resistant superbugs. The findings show that some manuka honey has unique antibacterial properties, the exact origins of which are yet to be fully understood.

The New Zealand manuka honey industry is estimated to be worth \$75 million, and the consortium hopes that its research will lead to a billion-dollar industry.

Mr Walker said growth in the market was constrained by the supply of economically accessible, high-activity manuka and a lack of consistency in yield and quality. The aim of the research was to double the number of beehives per hectare, the honey yield per hive, the proportion of medicinal manuka honey and the area of manuka economically accessible to beekeepers.

WELLINGTON BEEKEEPERS ASSOCIATION MINUTES FOR MAY 2011 MEETING 4 MAY 2011

Present: John Burnett, Andrew Beach and 83 members/visitors.

Apologies: Wayne Wilde, David Pearson, Bill Bligh, accepted.

Visitors: Phil Kirk (Upper Hutt), Phillippa and Graeme Elliot (Upper Hutt), Margot Broadhead (Mt Victoria), Andrew Bicknell, Shawn McAvinue (Massey Uni), Andy Maloney (Aro Valley), Peter Brooking (Kapiti), Kath Lees (Raumati Beach).

Minutes of the Previous Meeting. Proposed Amor, Seconded Ken Breden, passed.

Matters Arising

Lobbying Aussie Honey

Please write to Chris Carter. We did get a reply to our Official Information Act request. About 1000 pieces of paper sent to our working group. We have a two pronged approach:

- 1) Seeking information
- 2) A direct letter to the Minister setting out all issues concerned about. We have since received a 2 page reply and response to each of our issues/questions. The working group will respond to that. Keep writing please, we do not believe that MAF Biosecurity is capable of stopping diseases which could come in on Aussie honey.

Bulk Woodware

John is still taking orders, cut-off is tonight's meeting. We are getting a 20% discount from Ecroyds. NB: There will be another order later and this order will include some extra Club stock. John will order on the basis of payment on collection (not up front). We order standard grade boxes, not premium or budget.

Wairaka Apiaries: Kevin says could possibly match Ecroyds, the club may ask for a quote from him next time.

Box and Frame Assembly

We will have a workshop organized within a couple of weeks of the wood arriving. This will be at Wayne Wilde's and the assembled boxes can then be left to paraffin wax dip in the club's dipper.

Varroa Resistance

Pauline did tests on her own hives. Her varroa kill rates were: Apistan 222.6%, Bayvarol 18.5% (both same chemical), Apivar 100% kill. These figures suggest some varroa resistance so check for mite drop after you have treated.

WELLINGTON BEEKEEPERS ASSOCIATION



Meetings Johnsonville
Community Centre
Main Hall, Ground Floor,
Moorefield Road

1st Wednesday of the month
Main Meeting @ 7.30pm
Beginners Tuition @7.00pm

WHO TO TALK TO

President

Andrew Beach
(04) 904 1634
andrewbeach@hotmail.com

Treasurer

John Burnet (04) 232 7863
johnburnet@xtra.co.nz

Secretary

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salisburyz@yahoo.com

Newsletter Contributions:

Jamie Walker (04) 5627183
xpc20xpc@gmail.com

Newsletters are published in the **last week** of each month, except January. Members contributions to be with editor **by 20th month**. Word document format preferred.

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New Zealand had about a million hectares of erosion-prone pastoral land suitable for manuka plantations, and less than 50,000ha was needed for the programme.

Mr Walker said manuka plantations for honey production were a potential source of income for back country farmers with marginal land. The plantations could also be registered in the Emissions Trading Scheme.

"Manuka is no longer a weed. It's a valuable crop that can last for 80 years. Farmers can either let it regenerate to native bush or farm it to protect it."

He was concerned at the state of back country farms, many of which were reverting to wasteland because farmers were unable to afford fertiliser or to fix fences.

Mr Walker, elected to the Taranaki Regional Council in 1998, is chairman of the policy and planning committee. He has a bachelor of science from Victoria University and a bachelor of business studies from Massey University, is a fellow of the New Zealand Institute of Chemistry and the New Zealand Institute of Food Science and Technology, and worked for Fonterra and its predecessor, Kiwi Dairies, for 35 years until 2007.

His company, Nukuhau Carbon, owns a 200ha property near Waverley and a 41ha property near Maxwell, where 150,000 eucalypts, pines and native trees will be planted by the end of the year and registered in the ETS. Neither property carries stock.

Thirty hectares of manuka seedlings grown from seed produced by Comvita will be planted in about August on the property near Maxwell, as part of a trial to investigate the effects of sunshine, frost, rainfall and soil types on the production of manuka honey with a high UMF.

Mr Tweeddale and Mr Riddiford will also develop plantations. The three men's company will make the information available to others wanting to invest in plantings for production of manuka honey for medicinal products.

A testing service to identify manuka cultivars for medicinal honey production in different environments is also anticipated.

Comvita chief supply chain officer Nevin Amos said the programme would move the manuka honey industry from wild harvesting to science-based farming, using science to increase the value of the honey, not just the volume.

Comvita has already developed a range of elite manuka cultivars.

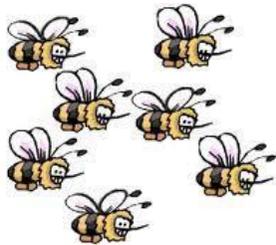
Massey University vice- chancellor Steve Maharey said the programme showed New Zealand innovation at its best, with strong business initiatives combining with research and the Government to develop a sustainable industry.

"This project will help develop a high-value industry by cultivating manuka on New Zealand back country, where traditional farming has been

challenging. It's a sustainable option for our hill country landowners, and will help meet market demands for medicinal products."

Head of the Institute of Food Nutrition and Human Health at Massey and former Hawera man Richard Archer said the programme would develop knowledge to produce manuka plantations capable of greater yields of honey suitable for medicinal products.

"Our staff will match new cultivars to the growing environments best suited to honey yield and quality. This will include consideration of the effects of soil biota, companion plants and insects. The work will be achieved in glasshouses, in controlled environments, and in the field," he said.



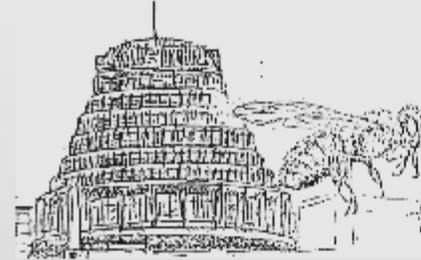
Bee's in Politics

Pauline Downie, Joint CEO of the National Beekeeper's Association of New Zealand highlighted the following report to WBA members: "Bee Welfare 'Crucial' to NZ, MPs told". The report gives an account of the NBA's appearance before the Local Government & Environment select committee recently at Parliament.

Pauline said "Following on from a recent United Nations Environment Programme report which examined an emerging worldwide trend of declining bee and other pollinator populations Committee members were interested in hearing in the first instance from the National Beekeepers' Association on issues affecting pollinators in NZ and possible remedies".

Pauline Downie

Joint CEO | [National Beekeepers' Association of New Zealand](http://www.nba.org.nz) | P: +64 4 471 6254 | www.nba.org.nz



Wellington Beekeepers Association Inc.
Newsletter- June 2011

Next Meeting:
Wednesday 1st June,
Main Hall, Ground Floor,
Moorefield Rd, Johnsonville Community Centre.

7.00pm Beginners meeting – Yearly Manipulations

7.30pm General Meeting – Plus Honey Competition

Return address PO Box 11- 089 Manners Street Wellington (ph 04 565 0164)

THIS MONTH FOR BEGINNERS –
Yearly Manipulations