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Winter training

Disease recognition course in the Wairarapa, June 2007

Photo: Diana Braithwaite

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President's Report

Field day

Tony and I have just come back from attending the Bay of Plenty Field Day. I would like to congratulate the branch on their efforts as the day was enjoyed by everyone who attended and was most informative. I learnt more about what Zespri is doing in order to become a provider of kiwifruit to its markets for the full year, and they also gave an update on the plantings of Gold and Green kiwifruit. Some of the new orchards will, in time, take all of the 1,000 hives that we own—this is truly mind-blowing stuff! Zespri are, therefore, looking more closely at artificial pollination improvements and new technology.

The presentation from the avocado industry was also interesting, in that they emphasised that the cropping of this plant tended to be biennial (every second year), unless sufficient new wood could be grown beyond the current fruit to allow for next year's flowering. This biennial cropping tends to occur in areas where there are cold/frost conditions, so Northland is the place to grow avocados successfully.

Dr Mark Goodwin also gave a presentation on HortResearch's work on honey sampling for the AFB Pest Management Strategy, as well as their work in Italy with the kiwifruit growers there to see how well the fruit are pollinated. I'm sure Mark just enjoyed the trip to see the sights of Italy! However, it is good to know that our pollination industry is well ahead of our overseas counterparts.

Jim Sim of the New Zealand Food Safety Authority addressed the meeting about progress on RMPs and verification. I talked with him at lunchtime, and raised the issue of how consistent the verifiers had been. I had heard stories of some beekeepers being told that they hadn't cleaned the cobwebs off their store shed walls and roofs where they were storing drums of honey that had been covered. He replied that NZFSA is now auditing the verifiers to see how much variation there had been (e.g., some were raising OSH issues when they should not have been), to enable them to improve consistency across the board.

I also told Jim that I had heard that a beekeeper had been told that all beekeeping premises would be bought up to abattoir standards in the future. Jim replied that this is not the case; however, if you mix honey with other ingredients (e.g., deer velvet), then you are dealing with a less safe product so will require a better standard of hygiene in your premises.

I would also like to applaud the Bay of Plenty branch for ensuring that branch field days are continued, even though we are all busier with having to deal with varroa. So many other branches have ceased to run regular meetings and field days, and this is an area that I feel is crucial for our industry's growth in the future.

We cannot afford to have beekeepers out there who are ill-informed of issues and regulations, which is one good reason why people should belong to a beekeeping organisation or club. For example, during the presentations at the field day it was pointed out that a beekeeper was using a substance for wax moth control that was not registered for that use. This exposes the industry to possible residue/poisoning issues in the future.

Whatever you do as an individual beekeeper can destroy an export/domestic market in one easy stroke if you use products incorrectly, or use a product that is not registered for use. Please think of the consequences before you act!

Last column

This will be my last column as President of the Association. I have enjoyed my time in the 'hot seat'. There have not been too many times when I have faced irate beekeepers. I indicated at last year's conference that I would not be seeking nomination for the Presidency this year, as I felt it was time that new blood stepped in to give a new, invigorated approach to the job.

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The rewards are many, from meeting and working with some exceptional people associated with the industry, to knowing the work the Executive has undertaken will give beekeepers greater opportunities and fewer compliance requirements than might have occurred if we had not been there to educate the regulators like MAF and NZFSA of the role of our industry.

I am also happy with the progress we have made as a team in our role as the Management Agency of the American Foulbrood Pest Management Strategy. Policies and procedures are now in place that should allow the strategy to be run effectively with the AFB NPMS Manager in place.

I thank you all for the support that has been given, and look forward to continuing work within the industry—albeit behind the scenes.

- Jane Lorimer

Telford National Certificate in Apiculture – Level 2

The Telford National Certificate in Apiculture – Level 2 (beekeeper's assistant) is being delivered in Christchurch this year at CPIT's Seven Oaks Campus.

The programme begins in mid-August and finishes in May 2008. The delivery comprises eight weekends (Saturday and Sunday), a five-day workshop and a three-day workshop.

The course will give you the theoretical and practical skills necessary for working as a beekeeping assistant. This will include the skills required to work in an apiary and honey house (including requeening, construction and repair of beehives and beehive frames), and general knowledge related to bee types, bee behaviour, bee diseases, the beekeeping industry in New Zealand, and career and training opportunities.

The programme will be taught by Jeff Robinson (President of the Christchurch Hobbyist Beekeeping Club) and Maggie James (queen bee rearer).

For further information contact 0800 TELFORD (0800 835-367) and ask for details on the National Certificate in Apiculture being delivered through CPIT.

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Chemical damage costing beekeepers

For the past six or seven years I have been working with the KPA (Kiwifruit Pollination Association) in the capacity of:

- beehive auditor
- educating the horticultural industry regarding spray application and their responsibilities (both legally and morally)
- policing spray application contractors and others in the horticultural industry applying chemical sprays, and investigating complaints.

We have definitely come a long way in building networks and relationships among the key stakeholders: Zespri, the avocado industry, OSH, NZFSA, Environment Bay of Plenty (EBOP), orchardists and spray contractors, etc., thus allowing us to work in and alongside these organisations. The prosecutions we have attained certainly have had an impact.

Unfortunately we have been severely handicapped by the availability of resources and by my other responsibilities as a horticultural consultant and contractor, and also by my work in dispute resolution (arbitration).

This situation meant that we would build momentum, then I would drop the ball to fulfil my other obligations, then pick it up again and rebuild the momentum I had. This has been a very frustrating and inefficient process.

Another consequence is that our attack is only on a couple of fronts:

1. the education and policing at the grassroots
2. a certain level of management in the above-mentioned organisations.

The result is that we still have a major issue that is very hard to quantify. The KPA and others share my view that the misuse of chemicals is costing the beekeeping industry huge amounts of money in lost earnings. In my opinion, the real miracle is that there hasn't been any significant chemical residue detected in honey.

As an example, here are three cases from last year. There were many more—many of which were minor, and others for which we could only give advice as no actual regulations were breached.

- The application of Lorsban®, an ecotoxic chemical, in winds that were averaging 20 knots and gusting to 35 knots. There were bees next door pollinating an organic orchard. The application was in an air-blast form, sending mist high through the kiwifruit canopy. These droplets would have been carried large distances and spread far and wide, putting the community at risk and potentially a large number of beekeepers. The application was managed by a long-term orchardist responsible for managing a number of orchards. This man was fully aware of his responsibilities.
- The spraying of an orchard with an ecotoxic chemical that was unprepared with unmown grasses and flowers; also, the male kiwifruit was still in flower. Surrounding this orchard were some apiaries that were being prepared for the Manuka flow. This incident occurred because the manager of the spray contracting firm was unaware of his responsibilities.
- The application of a new-generation chemical onto open kiwifruit flower. This was done against label requirements but the applicator thought this product was safe for bees. Unfortunately this resulted in a significant amount of bee mortality in neighbouring properties. We are still unsure how this chemical had such a drastic effect. This is the second incident of this nature with large levels of bee mortality, and this product is the prime suspect. Serious questions have been asked overseas about this product, even resulting in a label change on this chemical. This applicator was a long-term orchardist and fully aware of his responsibilities.

I feel I'm at a time where I need to do the job properly or look at my options. I would like to drop my other responsibilities and really fulfil this role by adding more prongs to our attack; such as:

1. working with all organisations involved to set up a robust reporting, investigating, policing and prosecuting procedure. This procedure would differ from area to area, dependent on resources. There is no reason that where one organisation may have limited resources, another cannot pick the mantle up. This requires us to take the lead and facilitate this action.

2. raising the bar in the area of education; that is, a wider focus moving into the polytechnics, other organisations involved with tutoring horticultural students, the Growsafe certificates, through to board level in the industries involved.
3. building relationships with ERMA and ACVM in regard to the labelling and introduction of existing and new chemicals. There are concerns here and overseas with a number of products currently being used. Some of the breaches I've investigated have been directly attributed to a misunderstanding of label requirements.
4. where there are concerns, initiating and attaining the necessary backing to research and test these products to ascertain their impact on bees.
5. forming alliances as a method of information transfer both here and overseas, particularly with beekeepers and horticultural industries in America and Europe to try and pre-empt future problems and to form strategies to move forward.
6. creating databases including problem areas, negligent operators and chemicals (by collating the information from New Zealand and overseas).

The KPA has undertaken to initiate this process so I'm under way, but what is required is to bring the beekeepers who share our concerns into the fold and form a system of funding from outside the KPA. I have had many offers of support, but unfortunately to date there's nothing to facilitate it.

We would be grateful if this issue could brought up in meetings around the country and if you share in our concerns, feel free to contact any member of the KPA or me.

- Neale Cameron
Ph 07 543 3421
Mobile 0274 991 300
e-mail neale@maxnet.co.nz

Hydraulic stabiliser leg

Here's a photo (taken a couple of years ago) of an upmarket hydraulic stabiliser leg on an Australian beekeeper's truck.

Pull the lock pin (slightly obscured at the top) and the leg drops down. Then the hydraulics are used to level the truck. Simple and easy to use.

- Frank Lindsay

Thymovar

Last year I tried a thymol product but it didn't give me a full knock-down after the prescribed period. I believe I didn't get the evaporation rate correct as the temperature was a little cool.

This year I was given a sample packet of Thymovar® to try in a number of hives. I selected two organic hives on which to try this product. My hives are normally wintered three high, so this time I put the wafers between the second and third supers on either side of the frames of brood (as prescribed on the packet) and closed the entrance right down to a gap of four centimetres.

As can be expected, the thymol fumes caused the bees to fan like mad, and quite a few also came out and up the front of the hive. On checking the hives 20 days later, the wafers had been partially propolised over (the exposed parts), but I could still detect the smell of thymol. I dug out 100 pupae with a capping fork and didn't see any mites. I scraped off the propolis from the wafer and left them in position for another couple of weeks.

A very good result.

- Frank Lindsay

NZ Food Safety Authority to stand alone

Agriculture Minister Jim Anderton and the Minister of State Services, Annette King, today announced the separation of the New Zealand Food Safety Authority from the Ministry of Agriculture and Forestry (MAF), thereby creating a new Public Service department administering Food Safety. The new department will be established on 1 July 2007.

"The new department, which will retain the name New Zealand Food Safety Authority (NZFSA), will continue to protect and promote public health and safety in relation to food and food-related products, and to develop economic opportunities by facilitating access to international markets for these products," Jim Anderton said.

Annette King said that at the time NZFSA was established in 2002, "it was accepted that MAF was New Zealand's only credible brand in international trade. Now, however, NZFSA is operating as a highly reputable agency and no longer needs to be attached to MAF to ensure its credibility in international trade.

"Separating the two agencies will result in more effective relationships for NZFSA and an agency with a clear focus on food safety issues for New Zealanders," Annette King said.

The new department will reflect the services and outputs of NZFSA as it currently operates, preserving the existing responsibilities, services and intersecting networks of both MAF and NZFSA.

"As part of the decision making process, officials from NZFSA and MAF made a significant and valuable contribution. The process was also informed by advice from Fonterra, the Meat Industry Association and the Ministry for Foreign Affairs and Trade" Annette King said.

The State Services Commissioner, Mark Prebble, will appoint an acting Chief Executive, who will assume the responsibilities of the Chief Executive of NZFSA until a new CEO is appointed.

Questions and Answers on the New Zealand Food Safety Authority

What will it cost to separate NZFSA from MAF?
Establishing NZFSA as a Public Service department will require a $7.5 million capital contribution, with additional and ongoing costs for both departments of $2.95 million per annum. There is a one-off set up cost of $0.63 million. These costs will be fully funded by the Crown.

Will there be job losses?
No. Only one position in NZFSA will substantively change as a result of the separation. NZFSA will need to fill 15 new corporate service positions to operate as a stand-alone department. However, four of these will be positions transferred from MAF, giving a net 11 new positions.

Will MAF and NZFSA share services?
Yes. As part of a shared services agreement, NZFSA will purchase services from MAF, for a proposed payment of $5.9 million, including contract management, financial services, procurement, payroll and information management. This arrangement will be for a period of five years, with a review clause after two to three years.

How will these shared services be managed?
The preferred governance model is a committee comprising the Chief Executives of MAF and NZFSA, supported by their respective corporate service directors and by a new shared position of Manager, Shared Services.

What will be the functions of the new department?
The functions that will transfer from MAF to NZFSA are those that relate to the administration of the Food Act 1981, the Animal Products Act 1999 (except in relation to live animals and germplasm), the Agricultural Compounds and Veterinary Medicines Act 1997 and the Wine Act 2004.

Who was consulted over this decision?
In addition to officials from NZFSA, MAF and advice from Fonterra, the Meat Industry Association and the Ministry for Foreign Affairs and Trade, the Treasury and the Department of Prime Minister and Cabinet were consulted.

Source: press release from the Minister of Agriculture, Hon Jim Anderton, 28.5.07.

Wax roller

Last year's Roy Paterson Trophy for new inventions was taken out by Chris Valentine for his wax roller for coating plastic frames. *(See page 9 of the September 2006 issue.)*

Neil Farrer made the wax roller pictured above from a stainless steel basin he had in the back of the shed. He added the legs and roller supports. A gas ring provided the heat to melt the wax. Neil uses a little water in the bottom to collect any dirt particles in the wax, and as a buffer from direct heat to the wax.

Apply heat slowly underneath and the water melts the wax. Allow time for the roller to soften by slowly turning in the hot wax. It is then possible to roll wax straight onto three-quarter depth plastic frames, one pass each side of the frame.

-Frank Lindsay

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From the colonies

Auckland Branch

The Auckland Branch held its AGM and votes for the notices of motion on Wednesday night. The current officers were re-elected. Although the usual suspects attended, the turnout was pretty poor. (Those of us who were there enjoyed a decent selection of biscuits though: cheers, Trevor.)

The small turnout didn't stop some good discussion on various topics. Some gripes were raised from the surveillance team about turning up to sites registered with 25 hives and finding nothing there, or just one crapped-out hive. A lot of guys aren't bothering with deregistering sites when there haven't been hives there for quite some time.

There was some talk on hobbyists and semi-commercial beekeepers who only have small runs to put through RMP-registered premises. The problem seems to be not many registered premises can be bothered with small runs of honey as it's more trouble than it's worth. It might be an idea for someone to come up with some sort of service for the small and mid-range operations.

The weather in Auckland has been extremely mild: we're all still turning up to work in shorts. I even ran out of water at home yesterday and had to get the tanker in, which was a shock at this time of year. At the moment we are busily machining up gear and scraping propolis.

As I write this there is a lot of Manuka in flower, which is really early for this area. Correct me if I'm wrong, but it seems that this will be a bad thing as when the weather does actually get warmer in the spring, the flower will have done its dash.

- James Harrison

Bay of Plenty Branch

The autumn came early after a short summer but has been warm and dry, with the cold weather only arriving in June. As a consequence of the mild weather some have fed a bit more sugar than normal, but now the cool weather has arrived and with it some welcome rain. The wasps seem to have diminished as well, so are no longer the problem they were for some in February, March and April. A decent spell of cold would be helpful to kill off a few in hibernation.

Now it is a case of doing the winter chores to get ready for the next round and have a holiday in preparation for the spring. We have a number of members heading for Conference where we look forward to catching up with old acquaintances, learning more and generally having an enjoyable time.

- Barbara Pimm

Waikato Branch

Finally we are having a cold patch after a glorious late autumn. The good May weather has probably led to a false sense of security and in some cases wintering down of hives is not yet completed. I am hearing that some have not finished taking strips out, some have not finished extracting, and—dare I say it—some still have honey on hives.

Our branch has been very late getting the AFB inspections underway and at this stage they are about two-thirds completed. AFB has been found in some areas, which is worrying. We are hoping to undertake inspections in the spring months in the future as this may fit in better with the beekeepers and those doing the inspections.

The general consensus seems to be that the RMP audits have gone well and we are starting to learn what is expected of us. Certainly it is a process that creates a level playing field for us all.

And finally, a couple of Waikato beekeepers have had time out in Australia and very much enjoyed the NSW conference and the hospitality of their Aussie counterparts. And they have learned to call a truck 'deck' a 'tray'—there are no dual meanings to a 'tray'!

- Pauline Bassett

Nelson Branch

I am writing this somewhat early before going overseas on holiday. This has been an amazing Indian summer (still!), and we have not had any frosts yet. Certainly the days are shorter and aren't quite as warm, but the last of the summer flowers are still giving late pollen, and it won't be long before we have the Heather and the Tree Lucerne to thank for fresh new pollen.

Varroa continues to find its way around the Nelson area, including the Dovedale and Upper Moutere areas. Amazing that the mite has still not found its way into our valley in Wakefield. Our recent testing with Apistan® and sticky boards shows nothing. A beekeeper here has observed varroa hopping a great distance to catch a ride with a nearby bee—they remind me of fleas in this respect. Imagine what takes place with bees foraging on the same plant or even flower?

Biosecurity New Zealand's autumn varroa surveillance has found a single apiary incursion east of Pelorus Bridge within

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the Marlborough controlled area. A Restricted Place Notice has been put in place to limit the movements from this sole affected apiary, and there will be a review of movement control when the varroa surveillance is complete in June. So far 8,000 hives have been tested within a band approximately 50 kilometres wide, below the southern boundary of the Nelson–Marlborough controlled area. Beekeepers have been busy assisting with this testing and it's been somewhat easier this year with the milder weather.

Several local beekeepers have registered to attend Apimondia in Melbourne in September, even though the date of this conference is difficult as it coincides with our busy spring work.

- Merle Moffitt

Canterbury Branch

On 24 May the Canterbury Branch held its first mid-winter seminar on varroa at the Hornby Workingmen's Club. Although hosted by the Canterbury Branch it was open to all beekeepers, and at least 80 beekeepers turned up to hear the three North Island beekeepers speak on their experience in dealing with varroa. The decision was made early on in the planning not to seek sponsorship as we were after a beekeeper perspective.

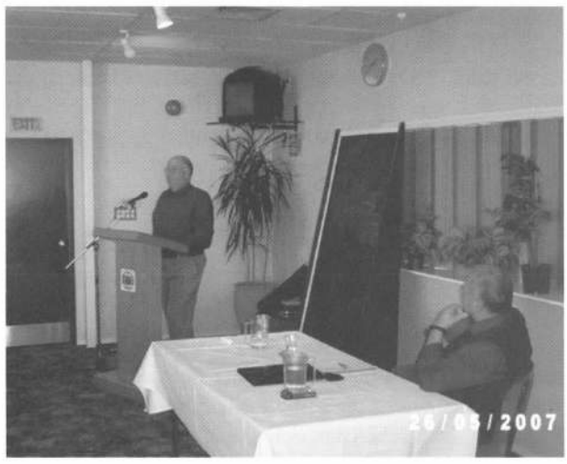
First up was John Berry, followed by Brian Alexander and Russell Berry. Each speaker gave us an overview of how varroa had affected their business and how each one of them dealt with the emotional, physical and financial aspects.

The audience appreciated the warts 'n' all approach that the speakers took, and their candid advice about dealing with the initial invasion period. If I heard it right, you won't find this kind of advice in any handbook, but that's just my take.

All speakers took questions from the floor as they spoke and were available after afternoon tea for further clarification. On behalf of the Canterbury Branch, I would like to thank John, Brian, and Russell for making themselves available to the beekeepers of Canterbury in the way they did. We are very grateful that they were prepared to share their experiences so that we can learn from their misfortune and hopefully avoid some of the inevitable pitfalls.

Perhaps this is a step for beekeepers both North and South in working together for the common goals of beekeeping issues to benefit us all!

- Brian Lancaster



John Berry, Brian Alexander and Russell Berry share their experiences with attentive beekeepers. *Photos: Trevor Corbett.*

Southland Branch

We wish to thank Russell Berry for attending our AGM and giving us a first-hand account on varroa and its pros and cons. As far as we are concerned, there are no 'pros' as others have said. Southland does not have Manuka in any quantity and no pollination. It will mean an extra lot of hard work, with diminishing prices for honey and a weather pattern that's not kind. Should we sell up or tough it out? The Southland way will be to try and tough it out, but as Russell said, the ones that will survive will be members of the NBA or other clubs that do a lot of networking and information sharing.

The honey season for Southland was very patchy, with western southland slightly better.

We hope you all have a good time in Dunedin: see you there.

- Doug Lomax

You can't help laughing

Over the years I've witnessed a number of things that were amusing as long as you weren't the person directly affected. Like stepping on a banana skin, the humour is in the eye of the beholder.

When we first started keeping bees, they were a really nasty lot. We used Kiwi ingenuity and made our smoker out of a baking powder tin with a hole at each end. We exhaled into the bottom of the smoker and smoke came out the top. Normally this was quite effective, but one day a friend was extra-enthusiastic in the smoke department. The resulting flames left him without a silk veil or eyebrows.

However, his best endeavour was when he arrived one day at our apiary, all set up with overalls, gloves and his veil tucked in. He proceeded to rip the hives apart, saying that they wouldn't be able to sting him now.

One modern invention is the zip fly. In those days (early 1960's) this fellow was still using a button closing fly. Do you realise how difficult it is to help someone when you are doubled over with laughter? We thought the poor boy was practicing for the Russian acrobatics team, as he was virtually doing backflips in his endeavours to remove the nasty stowaways. Those overalls and gloves were just a hindrance.

- Gary Jeffery

Propolis extract cancer breakthrough

A Waikato bee-product extract is being used in human cancer treatment trials after being found to stall tumours in mice.

Results of tests involving Manuka Health's propolis liquid Bio30™ were announced yesterday at a medical conference in the United States, with German researchers claiming it is 40 per cent more effective on a particular tumour than the first natural anti-cancer treatment known. Dr Hiroshi Maruta, head of the research team at University Hospital Eppendorf, said Bio30™ suppressed neurofibromatosis tumours in mice by more than 90 per cent over 100-day tests.

The first known natural anti-cancer treatment, a Chinese pepper extract, was only 50 per cent effective, the tests showed. Neurofibromatosis variant NF1 affects one in 3000 people.

Bio30™ is a propolis-based product available either in an alcohol base or as an alcohol-free preparation. Propolis is a resin collected by bees from young tree buds and used to seal small gaps in the hive after mixing with their own enzymes and beeswax.

Bio30™ is so-named because it contains at least 30 mg per gram of bioflavonoids, a natural substance which has anti-oxidant, anti-bacterial, anti-viral and antiseptic properties.

Neurofibromatosis is a set of genetic disorders affecting one in 3000 people which cause tumours to grow along various types of nerves, and can affect the development of non-nervous tissue such as bone and skin.

In a paper presented to a cancer research conference in Utah, USA, Dr Maruta describes Bio30™ as "a potent natural anti-NF therapeutic".

Bio30™ was developed by Manuka Health New Zealand Ltd (www.manukahealth.co.nz).

Sources: 'Bee product stalls tumours', The Dominion Post, *Thursday, June 14 2007; and excerpts from press release by Manuka Health New Zealand Ltd., 14 June 2007. Photograph courtesy of Manuka Health New Zealand Ltd.*

Come on gals, represent your branch and country

Apimondia 2007 Honey Queen Competition

Conditions of Entry:

Contestants will be female, 18 years of age or over, and must be a registered delegate or registered accompanying person.

Contestants must be actively involved in the beekeeping industry and be nominated by their local beekeeping group or association.

There is no charge for entry.

All contestants will deliver a 10 minute presentation of their own choice pertaining to beekeeping, during Apimondia. (Time and date to be determined at Apimondia.)

There will be a written quiz on world beekeeping. Contestants not speaking or writing English must advise the convenor prior to Apimondia to enable the quiz and presentation to be in her chosen language.

Contestants may wear a sash noting the association or group that nominated them.

As contestants are to be nominated by their local group or association there can be more than one contestant from any country.

Contestants are requested to wear National Costume during the final presentation.

All contestants will be expected to assist with the selling of raffle tickets—proceeds to Diabetes Australia.

Judges will mark contestants on their presentations and their interaction with delegates during Apimondia. Quiz results will also form part of the competition.

Entry/Nomination form must be forwarded to reach the Apimondia Honey Queen Convenor by 1 August 2007.

Entry/Nomination Form:

Name .....

Address .....

..... Country .....

Email address: .....

Apimondia Congress Registration reference/receipt number .....

I, ... being the authorised representative of

..... (Beekeeping Group/Association)

from .....(Country) hereby nominate

..... (named above)

who is 18 years of age or over, for entry into the Apimondia 2007 Honey Queen Competition.

Please forward completed entry/nomination form to:

Apimondia Honey Queen Convenor
Mrs Paula Dewar,
2157 Lake Moogerah Road
KALBAR Qld 4309
AUSTRALIA

Or email: aqbba@bigpond.com

About the Apiary

The latest batch of cold weather has slowed the bees down considerably. Most have closed down and have gone into a winter cluster. However, on fine days above 13°C, the bees are still going out collecting nectar and pollen from winter flowering Eucalyptus, Black Wattle, Spanish Heath, Gorse and Tree Lucerne.

If you live in one of the warmer areas where the bees are flying, place a board on an angle from the front of the landing board to the ground, so that bees landing short can walk up into the hive. This can save the lives of quite a few bees, especially if hives are shaded by trees during part of the day.

Buying hives

A number of new beekeepers out there are eager to start beekeeping. A new beekeeper, full of the joy and enthusiasm of obtaining bees for the first time, is not really in a good position to judge the quality of the hive(s) he or she is intending to buy. Being excited, they are not critical of what they are about to purchase and often overlook essential aspects and faults.

Often bees for sale are being sold off by an older beekeeper going out of the craft. Not all have been studiously looked after and could be in different states of repair. A new beekeeper will be happy to buy a hive with a few bees flying in and out, and could be shown a frame of bees not knowing what they are really looking at.

All new beekeepers should ask an experienced beekeeper to go along with them to inspect the hive. With a screwdriver, soft, partially rotten woodware becomes obvious. An experienced eye can access the strength of the hive, if it's disease free and the laying condition of the queen to verify that the price matches quality.

What size supers should one buy? Commercial beekeepers prefer full-depth supers, whereas it's easier for hobby beekeepers to handle three-quarter depth supers. Whatever you settle on, consider buying all the same type and size so they can be interchanged between honey and brood supers, or just have three-quarter depth honey supers as these are definitely lighter than full-depth supers full of honey.

Beware of being given a stack of old supers from the back of the shed that haven't been used for a few years. They may have been put in there because the hive died out some time in the past. Always be suspicious unless you know the disease status of the beehives.

If you already have hives and are purchasing more hives and supers, don't interchange the new gear with yours until it has been through one complete year. Keep and work them separately so that you are fully confident that they are disease free.

When paying for the hive(s), work out a sales agreement. Offer half of the payment immediately and the balance in four to five months' time (after the spring inspection), at which time the hives will have been verified as being disease free. An alternative option is to draw up an agreement where the seller will replace any hives or return your money if they are found to have AFB within the first three months (after the initial spring inspection).

Here's a tip for those purchasing a stack of honey supers with a number of hives. In the spring, spray sugar syrup lightly into the cells of all frames, or dip the frames into a bucket of 50/50 sugar/water solution and then shake most of the syrup out so they are just sticky. Put these on the hives, and four weeks later give the hives a full brood nest inspection. If they are disease free, you will have lovely hives. If they had a high spore loading or a few cells with AFB scale, you will find the odd cell of AFB-diseased larvae among the emerging brood. Many beekeepers have been given supers and frames from the back of the shed, only to find when they were used during a good honey flow that they had acquired diseased hives. Better to find out sooner than later, but remember that sometimes AFB takes 18 months to show, so keep the gear separate for this length of time before using it.

All this talk of disease should not frighten you off. Most hobbyists will not experience AFB in their beehives. The warning is there just to make you aware that beekeeping isn't always rosy.

Something else to watch out for: family safety

Beekeepers learn to take stings. Over time your pain tolerance will go up and your body will build immunity to the venom. Bee stings always hurt, but after six months of beekeeping you

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will no longer get the swelling and the itchiness that lasts for days. Actually, it's a good idea to have at least one partial bee sting each month so your body can build immunity. A partial sting is where you put a bee on your skin and immediately scrape it out again, using the flat edge of a knife.

The unseen damage you can do to your family is from the bee venom that is deposited on your bee suit by angry bees stinging your protective clothing rather than you.

When you take your bee suit into the house after working your hives, the venom dries and minute particles are released into the air. Your family breathes this same air, and they in turn pick up minute traces. At puberty, exposure to this venom can turn a child who doesn't normally react to bee stings into one that becomes allergic with life-threatening reactions to bee stings. This is called an anaphylactic reaction. Learn from our mistakes. One of our sons is highly allergic. All bee gear now stays outside and is washed after each use, separately from household washing.

In commercial beekeepers' families, children also become allergic to cockroaches. It seems strange but apart from bees, cockroaches are the next most plentiful large insect found in beehives. They hide away during the day and come out at night to clean the food debris from the floorboard of the hive. When honey supers are brought into storage, cockroaches also come in with them. If stored in an enclosed shed, their urine dries and can act on a child going through puberty in the same manner as a bee sting. If you are a commercial beekeeper, put out roach baits and replenish them frequently along with the mouse baits.

Things to do this month

Continue to render down old comb and make up new equipment. Most woodware only lasts 10–12 years, and brood frames should be replaced every three to four years. Most commercial beekeepers replace or scrape down a third of the frames each year. Larger-scale beekeepers are cleaning up supers, dipping supers in paraffin wax and repainting them, ready for the coming season to extend their working life.

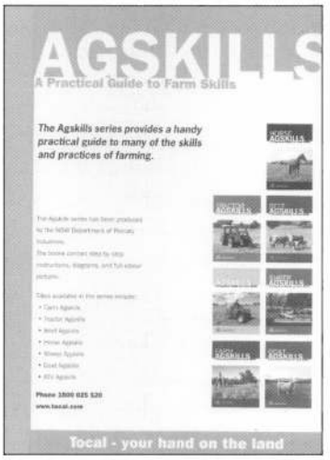
If you plan to buy plastic frames, purchase them early and let them air for three to six months. The bees will build them out quicker once they have lost that initial 'production' smell. Late treatment mite strips should be all out of the hives.

If you haven't already done so, order new queens. You should be able to get queens in November, as most of the early spring queens have been ordered by commercial beekeepers. Anyway, the later the better as the bees will have had better mating conditions. Sit in front of the fire and read a few books from the NBA Library, or buy some new beekeeping books.

- Frank Lindsay

AGSKILLS books valuable

One thing I'd like to push is education.



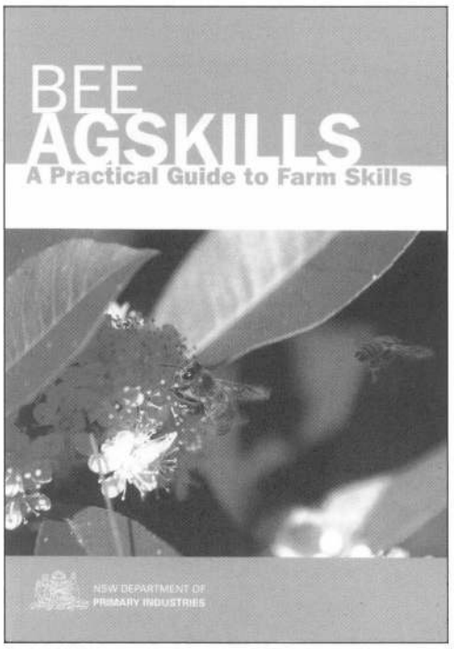
We have excellent rural training institutes and farming schools in New Zealand but there is a greying across the land. Farmers are getting older.

Not all those with a bent to nature and an interest are being tapped.

The New South Wales Government encourages primary industries. They contribute 'dollar for dollar' and they are progressing faster than New Zealand in some aspects.

The NSW Department of Primary Industries has produced a series of AGSKILLS books covering bees, tractors, ATVs, farms, goats, sheep, beef, and horses.

The bee AGSKILLS book costs $25, which is very reasonable but the postage is high at $A16.45 (it's a heavy 750 g). Perhaps the NBA can organise a bulk order.



I would also like to see these books in every secondary school library. Even though they have been produced for Australian conditions, they are still very relevant and will at least give a student an indication of what's involved if they are thinking of an agricultural career.

You can purchase online at www.tocal.com

- Frank Lindsay

Letters to the Editor

Ask why

Recently we have been brought under the New Zealand Food Safety Authority regulations in respect to honey sheds, etc.

We have been subjected to various rules and conditions, but it appears that the younger beekeepers have been so indoctrinated that they just accept things without daring to question *why*. Typical examples are having to replace brass honey pumps and cast iron honey taps with stainless steel.

So I asked *why*.

What may not be known is that some stainless honey pumps actually have brass cogs, as stainless steel cogs apparently do not mesh together well.

Anyway, why stainless? Is it just for the appearance, ignoring the fact that stainless could add cobalt, chromium etc. to your honey, or is there really a health problem?

So I had some honey tested for copper and zinc (the components of brass) and for iron—before and after going through the pump and honey gate.

First, the brass honey pump. Copper: before, 1.6 parts per million; after, 1.7 parts per million (within the margin of error: identical). Zinc: before, 16 parts per million; after, 16 parts per million. In other words, no change. So why change your pump? Actually, Zinc is an essential mineral for a healthy diet.

Next, the results for the cast iron honey tap iron. Before: 50 parts per million; after: 20 parts per million. I doubt if the tap actually removed the iron. It indicates that the iron level in honey varies a lot, as is also seen in tested Active Manuka honey, which shows levels from up to 3000 parts per million down to perhaps two or three parts per million in similar honey.

Anyway, I would suggest that in future you do not, as a matter of course, accept bureaucratic demands without first asking for reasons. 'Why?' is a reasonable question and you should expect justification for any requested condition.

Gary Jeffery
Mountain Beech Apiaries Ltd.
Westport

There's gold in that thar honey

Honey is reputed to have great healing properties, especially demonstrated with the isolation of the Manuka Factor of Active Manuka honey, independent of the hydrogen peroxide effect found in most honeys.

Having a curious nature, I asked what contributed to the activity and it was thought that there was some kind of chemical reaction between iron ions in the honey and the honey. A chemical reaction would explain why the activity appeared to increase over time.

A common factor of Active Manuka honey is that it appeared to be found in areas that had a history of gold mining or volcanic activity. In many areas, the gold is found in iron pans. As iron could still be the answer, I arranged a number of tests. The results were quite interesting.

The iron levels varied greatly from 3000 parts per million down to two or three parts per million. At the same time the gold levels were very consistent, between 0.2 and 0.18 parts per million. Not enough gold to make you rich, but interesting anyway. This is especially true as some gold compounds have been used in medicine at times (such as treating some cancers), and I have seen the side effects of such treatment in curing severe arthritis. Of course the levels of gold in Active Manuka honey could be of little or no use at all, but are nonetheless interesting.

Perhaps describing our honey as 'golden honey' is not too far from the truth?

Gary Jeffery
Mountain Beech Apiaries Ltd.
Westport

Bureaucrats and border control

To meet my obligations as a beekeeper I notified MAFQual in November 2006 that an unidentified hive had been moved into my area. To date I have received no response. It appears that border control is no longer about disease prevention or eradication. It is about economics, about spin, more about assessing disease risk while maintaining a lifestyle for fat cats at the expense of the individual.

Bureaucrats and management are very quick to impose legislation onto individuals, charge levies, add penalties but very cleverly avoid individual accountability, credibility and especially penalties for non-performance. There also appears to be a hidden agenda to make it uneconomic for the small hive owner to operate. They are costly for agencies to service. There is nothing about a passion or a way of life.

In my experience for any disease eradication programme to be totally successful there needs to be a level playing field. Both sides should be playing by the same rules.

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Unless there is a change in thinking, it will be the decision makers, the bureaucrats, big business and the pen pushers that will stuff the bee industry long before the genuine beekeeper or the hobbyist who owns a few hives.

Yours sincerely
Trevor Wright
26 Rutherford Drive
Waikanae Beach
Kapiti 5036

The revised edition of *Elimination of American Foulbrood Disease without the use of Drugs – a Practical Manual for Beekeepers*, by Dr Mark Goodwin, is now available from:

Jim Edwards, 10 Nikau Lane, Manakau Heights, RD 1, Otaki 5581

NBA members $20.00 plus $1 postage

Non-members $25.00 plus $1 postage

Kudos for Mountainhoney product

Hi Frank,

Read your article and was intrigued to read of the comment on the *Saveur* magazine. We are in it too so I have attached a copy of the page concerned. Last year we went to the Fancy Food Show in New York City, which was amazing. Got some funding from NZTE. We export our Blue Borage to the USA. Check out our website at www.mountainhoney.com

Regards
Nick Parkinson
Mountainhoney Kaikoura Ltd

[Editor's note: Nick refers to the article by Frank Lindsay in the April 2007 issue, page 31, which mentions that BeesOnline's Manuka honey was voted as one of the top 12 honeys of the world (out of 200 mono-floral honeys) by Saveur *magazine in the USA. Mountainhoney Blue Borage also made the top 12 list; here are the tasting comments from Saveur: "On the tongue, this dark amber honey made from the nectar of bright blue borage flowers bursts with the taste of butterscotch. We think it's perfection when served over a warm scone".]*

What happens at an Apimondia conference?

Attending an Apimondia conference is an experience that will stay with you for many years. It is a golden opportunity to:

1. Hear what is happening in research
2. Wander through exhibitor stands covering the widest range of beekeeping related material that you could ever imagine
3. Attend cultural and presentation evenings
4. Meet and share ideas with beekeepers from around the world
5. Enter competitions.

Research is a topic that turns many practical people off! There is a perception that academics investigate things that are too far removed from the hands-on person. However you may be surprised at the number of presentations that will widen your understanding and help you as a beekeeper. Some presenters are from undeveloped countries and work very hard to produce honey with only basic equipment. Would you like to hear the latest in respect to control of small hive beetle, breeding disease resistant bees, the growth in crop pollination and how beekeepers operate in undeveloped countries? The topics covered by the papers presented are divided into seven specialised areas managed by Standing Commissions.

The range of exhibition stands at Apimondia is quite challenging. There are usually several suppliers of stainless steel equipment—everything from two frame extractors to large units with the latest in control technology, uncappers, creamers, packaging/bottling units, sachet fillers and many small items including hive tools and smokers. There will also be plastic equipment including hives, frames, queen rearing supplies and gadgets for dispensing treatments for pests such as wax moth, small hive beetle and varroa. Not all based on chemicals, some are claimed to be biological control.

Manufacturers of health products based on beehive products and herbal extracts are generally well presented. It is amazing how much propolis is used overseas particularly in lozenges, sprays and syrup. The Tentorium Apicompany, based in Russia, has a range of over 60 products and if present will probably have free samples. *[Editor's note: please note that you might not be able to bring these products back to New Zealand.]*

Check out the bookstands, but do it early in your walk around. There may only be a few copies of the most interesting titles.

As the next Apimondia congress will be held in France in 2009, there will be an evening of entertainment and culture presented by the French as an invitation to attend their congress.

Perhaps the most challenging part of the conference is talking to beekeepers from all over the world. It is great to find out how they approach different aspects of beekeeping and what plants produce nectar for their best honey. So, will you be there to soak up the experience and information, or will you have regrets later?

Excerpted from Honeybee News, *the Journal of the New South Wales Apiarists' Association Inc., Volume 7 Number 5, September–October 2006.*

Observations on comb building

English Heritage

For twenty years before the publication of his *Origin of Species*, Charles Darwin knew that the cell-building instincts of the honey bee had to be included in anything he wrote on natural selection.

Many people kept bees and most had seen or were aware of the beautiful honeycomb they built. Darwin knew he had to show that the honey bees' instinct to build comb evolved in small steps over millions of years or his whole theory would fail.

The theory

He used three examples of living species to demonstrate the evolution of cell building.

The bumblebee nests consist of oval cocoons and spherical pots of various sizes made of soft wax and placed together in an irregular comb. In the construction of these pots, Darwin suggests, *'there is no greater difficulty than in a bird making its nest'.*

As an intermediate stage in evolution between the bumblebee and the honey bee nests, Darwin cited the Mexican stingless bee, *Melipona domestica*. The important point for Darwin was that the cells of Melipona are *'made at that degree of nearness to each other that they would have intersected or broken into each other if the spheres had been completed; but this is never permitted, the bees building perfectly flat walls of wax between the spheres which thus tend to intersect. Hence, each cell consists of an outer spherical portion, and of two, three or more flat surfaces, according as the cell adjoins two, three or more cells'.* Darwin suggests that if Melipona made the cells of equal size and at a regular distance from each other they could result in hexagonal cells like those of the honey bee.

Darwin writes *'Therefore I conclude that the marvellous comb of the Hive-bee—the most marvellous instinct known—does not present an insuperable difficulty on our theory of natural selection...'* This interim conclusion, first written in the long draft before 9 March 1858, is confirmed in the published book in November 1859. However, Darwin appears far from being satisfied that this would convince the critics of his theory.

The experiments

Darwin corresponded at length with friends including eminent naturalists and beekeepers. Some of this correspondence reveals the difficulty he had in explaining how cell building by bees could fit with his theory.

He started out by attempting to collect samples of comb that included cylindrical cells and the commencement of cells. Repeated requests to beekeepers and naturalists failed to find suitable material. In May 1858, Darwin appears to have decided that he would have to find suitable bits of comb for himself.

Darwin was not an experienced beekeeper and it was fortunate that he discovered that WB Tegetmeier had the beekeeping skills and resources to help with his work on comb building. Tegetmeier's experiments and observations were the turning point in Darwin's struggle to explain how bees' cell-building instinct evolved. The experiments were reported by Tegetmeier at the British Association for the Advancement of Science (BAAS) meeting in Leeds in September 1858 and are described in more detail in *The Origin of Species.*

Conclusion

Darwin sums up the result of the experiments and observations: *'The work of construction seems to be a sort of balance struck between many bees, all instinctively standing at the same relative distance from each other, all trying to sweep equal spheres, and then building up or leaving ungnawed, the planes of intersection between these spheres.'*

It was over one hundred years after the publication of *The Origin of Species* that W Ulrich confirmed Darwin's observations in 1964. Ulrich describes the comb as not a structure composed of cells, but as a pattern and it grows as a pattern. Bees work independently of one another; they are not able to knead wax, they can only add or remove wax particles. To sum up, the two simple instincts of the bee are to make cylindrical cells and save wax.

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Source: Reprinted from* Bee Craft, *October 2006, page 23.

A summary of the Health and Safety in Employment Act 1992

The object of the Health and Safety in Employment Act 1992 (the Act) is to prevent harm to all people at work and people in, or in the vicinity of, a place of work. To do this, the Act:

- promotes excellence in health and safety management
- defines harm and hazards in a comprehensive way
- imposes duties on those who are responsible for work, or do work
- sets requirements that relate to taking all practicable steps to ensure health and safety, and that are flexible to cover different circumstances
- encourages employee participation in health and safety management and that the process is conducted in good faith by all those involved.

The Act creates duties for most people connected with places of work including:

- employers
- employees (including trainees and people gaining work experience and volunteers)
- the self-employed
- principals to contracts
- persons who control a place of work
- hirers, sellers and suppliers of plant.

Regulations

Regulations are promulgated from time to time under the Act. Regulations may, among other things, impose duties on employers, employees, designers, manufacturers and others relating to health and safety. These regulations may apply with respect to places of work, plant, processes or substances and may deal with particular problems that have arisen.

The Health and Safety in Employment Regulations 1995 require the provision of facilities such as toilets, meal rooms, first aid, and for employees to wash, and the provision of wholesome and sufficient drinking water. The regulations also set a range of general health and safety and welfare requirements in addition to the Act, including:

- restricting children and young people from certain hazardous work and times of work
- requiring certification of workers using some hazardous equipment
- requiring notification of particular types of hazardous work, including forestry and construction
- creating duties for the designers, manufacturers and suppliers of plant and protective clothing and equipment.

The Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999 describe a system of design verification and inspection to maintain the integrity of hazardous equipment (refer to part 2).

Approved codes of practice (i.e. cranes)

Approved codes of practice are provided for in the Act. They are statements of preferred work practice or arrangements, and may include procedures which could be taken into account when deciding on the practicable steps to be taken. Compliance with codes of practice is not mandatory. However, compliance with an approved code of practice may be used in Court as evidence of good practice and an employer or other duty holder having taken "all practicable steps" to meet the duty.

Employers' duties

Employers have duties to ensure the health and safety of employees at work.

Employers have a general duty to take "all practicable steps" to ensure the safety of employees while at work. In particular, they are required to take all practicable steps to:

- provide and maintain a safe working environment
- provide and maintain facilities for the safety and health of employees at work
- ensure that machinery and equipment is safe for employees
- ensure that working arrangements are not hazardous to employees
- provide procedures to deal with emergencies that may arise while employees are at work.

Taking "all practicable steps" means doing what is reasonably able to be done in the circumstances, taking into account:

- the severity of any injury or harm to health that may occur
- the degree of risk or probability of that injury or harm occurring
- how much is known about the hazard and the ways of eliminating, reducing or controlling it
- the availability, effectiveness and cost of the possible safeguards.

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A person is required to take all practicable steps in respect of circumstances that they know or ought reasonably to know about.

Hazard management

Employers must identify and regularly review hazards in the place of work (existing, new and potential) to determine whether they are significant hazards" and require further action. If an accident or harm occurs that requires particulars to be recorded, employers are required to have the matter investigated to determine if it was caused by or arose from a significant hazard (refer to part 2.2(2)).

"Significant hazard" means a hazard that is an actual or potential cause or source of:

(1) serious harm (defined in a schedule to the Act), or
(2) harm (being more than trivial) where the severity of effects on any person depend (entirely or among other things) on the extent or frequency of the person's exposure to the hazard, or
(3) harm that does not usually occur, or usually is not easily detectable, until a significant time after exposure to the hazard.

Where the hazard is significant, the Act sets out the steps employers must take:

(1) where practicable, the hazard must be eliminated.
(2) if elimination is not practicable, the hazard must be isolated.
(3) if it is impracticable to eliminate or isolate the hazard completely, then employers must minimise the likelihood that employees will be harmed by the hazard.

(EIM) – Eliminate, isolate, minimize

Where the hazard has not been eliminated or isolated, employers must, where appropriate:

(1) provide protective clothing and equipment and ensure that it is accessible and used
(2) monitor employees' exposure to the hazard
(3) seek the consent of employees to monitor their health
(4) with informed consent, monitor employees' health.

Information for employees and health and safety representatives

Before employees begin work, they must be informed by their employer of:

(1) hazards they may be exposed to while at work
(2) hazards they may create which could harm other people
(3) how to minimise the likelihood of these hazards becoming a source of harm to themselves and others
(4) the location and correct use of safety equipment
(5) emergency procedures.

Employers are also required to inform employees of the results of any health and safety monitoring. In doing so, the privacy of individual employees must be protected.

Where there are employee health and safety representatives, the employer must ensure that the representatives have ready access to sufficient information about health and safety systems and issues in the place of work to enable them to be able to carry out their functions effectively.

Training and supervision of employees

An employer must ensure that every employee who:

(1) does work of any kind, or
(2) uses plant of any kind, or
(3) deals with a substance of any kind

in a place of work has the knowledge and experience —or is supervised by someone who has—so that they are not likely to suffer harm, or lead to the harm of others.

Every employee must be adequately trained in the safe use of all plant, objects, substances, and protective clothing and equipment that they are, or may be, required to use or handle.

Employers to provide opportunities for employee participation

Employers must provide reasonable opportunities for employees to participate effectively in on-going processes for improvement of health and safety in the place of work. Where there are more than 30 employees, or where an employee requests it, the employer must seek agreement on, develop, implement and maintain a system of employee participation. Where agreement cannot be reached on the system of employee participation, there are default provisions set out in the Act.

Where employee health and safety representatives are elected, they are entitled to paid leave to attend approved training courses. A trained employee health and safety representative may issue a hazard notice to an employer where they believe there is a hazard in the place of work, they have brought it to the employer's attention and the issue has not been resolved.

Employers and employees must deal with each other in good faith while seeking agreement on, developing and maintaining a system of employee participation. The dispute resolution processes of the Employment Relations Act 2000 apply.

Responsibility for employees' work activities

An employer is also responsible for the health and safety of others arising from the work activities of their employees. They must take all practicable steps to ensure that no action or inaction of an employee while at work causes harm to any other person.

Deemed employees

People receiving on-the-job training or work experience, loaned employees and volunteer workers are all deemed to be "employees" of an employer or self-employed person for whom they are working. Most employer duties apply, but not the duty to provide opportunities for employee participation.

In addition, for volunteers, the exceptions are:

- to provide training and supervision
- to ensure volunteers' action or inaction at work does not harm others.

Duties of employees

Every employee must take all practicable steps to ensure:

- their own safety while at work (including using protective clothing and equipment)
- that no action or inaction of theirs while at work causes harm to any other person.

An employee has a right to refuse to undertake work that they consider likely to cause them serious harm.

The self-employed

Every self-employed person must take all practicable steps to ensure that no action or inaction of theirs while at work harms the self-employed person or any other person.

Principals

Principals to contracts are required to take all practicable steps to ensure that:

- no employee of a contractor or subcontractor, or
- if an individual, no contractor or subcontractor
- is harmed while doing any work (other than residential work) that the contractor was engaged to do.

Hirers, sellers and suppliers of plant

The Act places duties on people to ensure that any plant or equipment that is used in a place of work is designed and made, and has been maintained, so that it is safe for its intended use. The duties apply to people who:

- hire, lease or loan plant to another person that could be used in a place of work
- sell or supply plant (other than for hire, lease or loan)
- install or arrange plant in addition to either of the above.

Persons in control of a place of work

The Act places duties on "persons who control a place of work" in relation to people in the vicinity, and to visitors.

A "person who controls a place of work" includes a person who owns, leases, subleases or occupies a place of work, or who owns, leases or subleases plant or equipment used in a place of work.

Accidents and serious harm (recording and notification)

The Act requires employers, the self-employed and principals to contracts to keep a register of work-related accidents and serious harm. For employers, this includes every accident that harmed (or might have harmed):

(1) any employee or self-employed person at work
(2) any person in a place of work under the employer's control.

Employers are also required to investigate all accidents, harm and "near misses" to determine whether they were caused by a significant hazard. "Serious harm" is defined in Schedule 1 of the Act. Any occurrences of serious harm of a kind that must be recorded, must also be notified to the Secretary of Labour (in practice, the nearest Department of Labour office) as soon as possible after the occurrence. In addition, the accident must also be reported in the prescribed form within seven days. (Forms are available from stationers, or from the Department of Labour website.)

If a person suffers serious harm, the scene of the accident must not be disturbed unless to:

(1) save life or prevent suffering
(2) maintain public access for essential services, e.g. electricity, gas
(3) prevent serious damage or loss of property.

A health and safety inspector will advise whether or not the Department of Labour will investigate the accident and what action may be taken in the meantime.

Source: Department of Labour, 2007, Approved Code of Practice for Cranes, http://www.osh.govt.nz/publications/cranes-acop/hse.html

This season, work towards your 10% workplace safety discount.

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(2) your work falls within the specified units – 1593 Beekeeping
(3) you have attended a training course, or can show appropriate experience or industry relevant capability in hazard identification and management, injury and incident investigation, emergency readiness and in training employees
(4) you agree to a possible on-site audit of your health and safety systems by ACC approved auditors.

Need help? Call ACC 0800 222 776

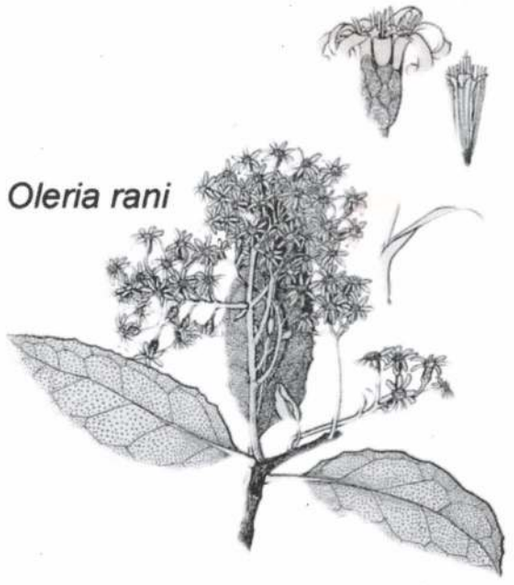
Trees and Shrubs of New Zealand

Oleria furfuracea

Akepiro

The Akepiro is a shrub up to five metres in height, with velvety branches and grooved twigs. The leaves are 5–10 centimetres long, oval, stiff and slightly toothed, with a hairy underside silvery in colour. The flowers are white and sweet-scented, and flower in large heads between August to October. It produces yellow pollen.

Although Akepiro is confined to the North Island there are various species of *Oleria* in the South Island similar in size etc., and one species grows on the Chatham Islands. All in all there are over 20 species of *Oleria* growing in New Zealand.



Oleria rani (Heketara) grows to be a small tree with more rounded leaves, looking like a small Rangiora. The Heketara, like Akepiro, has large heads of white flowers, which in some years flower profusely and is quite a sight against the dark-green background of the bush. Again like all *Oleria* species, the Heketara produces pollen more than nectar and is also yellow in colour.

The Maori used the gum and the leaves from the Akepiro and Heketara as a scent. The leaves were also used as wreaths as a token to the dead.

- Tony Lorimer