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NATIONAL EXECUTIVE BEEKEEPERS' ASSOCIATION OF NZ (Inc.)

Acting President: Jane Lorimer

Hillcrest Apiaries,
"Kahurangi-o-Papa"
RD 3, Hamilton 2021
Phone: (07) 856-9625 Fax: (07) 856-9621
Mobile: 025 294-6559
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Executive: Philip Cropp

Nelson Apiaries, Motupiko,
RD 2, Nelson
Phone: (03) 522-4130 (Wk) 03 522 4413
Fax (03) 522-4513
Mobile: 025 829 143
Email: nectar@ts.co.nz

Executive: Gerard Martin

21 Edgewater Grove
Whakatane
Ph/Fax: (07) 307-8111
Email: busy-bee@xtra.co.nz

Executive: Bob Blair

157 Carlisle Rd, Browns Bay
Auckland 1310
Ph/Fax: (09) 479-4354

Executive: Roger Bray

Braesby Farm, RD1
Ashburton
Ph/Fax: (03) 308-4964

Executive: Don Stedman

Catlins Apiaries, Pine Bush,
RD1,
Wyndham
Ph/Fax: (03) 246-9777
Email: dstedman@xtra.co.nz

Executive Secretary: Pauline Bassett

Waitomo Honey Ltd
PO Box 387, Te Kuiti
Ph/Fax: (07) 878-7193
Email: waihon@actrix.co.nz

Hon. Librarian: Chris Taiaroa

43 Princes Street, Waikari Nth Canty 8276
Phone/Fax: (03) 314-4569
Email: tony.taiaroa@clear.net.nz

www.nba.org.nz



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BRANCHES: The first named person is the President/Chairperson. The second is the Secretary.

FAR NORTH

Bob Banks
RD 2, Kaitaia 0500
Tel: (09) 408-5543
Email: bob.banks@xtra.co.nz

Bruce Stevenson

Kiwi Bee Distributors
Kemp Rd, Kerikeri 0470
Tel: (09) 407-7190
Fax: (09) 407-7194
Email: bucestevenson@xtra.co.nz

NORTHLAND

Simon Peacey
76 Malone Rd, RD 9
Whangarei 0121
Tel/Fax: (09) 434-6344
Mobile: (025) 270-8922
Email: peacey@paradise.net.nz

Terry Gavin

PDC, Titoki 0250
Tel: (09) 433-1891
Fax (09) 433-1895
Mobile: 021 257 6457
Email: terry.gavin@xtra.co.nz

AUCKLAND

Graham Cammell
133 Walmsley Rd
Mangere
Auckland 1701
Tel: (09) 275-6457
Fax: (09) 275-9097

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PO Box 74 078
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Ohaupo Apiaries
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SOUTHERN NORTH ISLAND

Allan Richards
P.O. Box 287, Marton 5460
Tel: (06) 327-5039

Fax: (06) 327-5078

Frank Lindsay

26 Cunliffe Street, Johnsonville,
Wellington 6004.
Tel/Fax: (04) 478-3367
Email: lindsays.apiaries@xtra.co.nz

SOUTH ISLAND

NELSON

Paul Davey
Orinoco, RD1
Motueka 7161
Tel/Fax: (03) 526-8820
Email: orinoco@tasman.net

Michael Wraight
15 Titoki Place, Motueka 7161
Tel/Fax: (03) 528-6010
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Tony Mulligan

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WEST COAST

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OTAGO

Blair Dale
PO Box 23, Middlemarch 9056, Otago
Work Tel/Fax: (03) 464-3796
Home Tel/Fax: (03) 464-3122
Email: blair.dale@clear.net.nz

Peter Sales

"Te Ora", RD1, Port Chalmers
Dunedin 9030
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Fax: (03) 472-7221
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NORTH OTAGO

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Tel/Fax: (03) 208 8210
Don Stedman, Catlins Apiaries
Pine Bush RD1, Wyndham 9758
Tel/Fax: (03) 246-9777

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Fax: 03-479 0753
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President's Report

Jane Lorimer Acting President

What has been happening with the National Beekeepers Association?

It has been pleasing to see how many beekeepers have been paying their subscription to the Association to ensure its continuance. I do know however that there are still a number of people out there who are sitting on the fence. It would be helpful to the Association for these people to join now to enable the executive to set up a budget for the year's activities and cut our cloth according to our available income.

The executive are meeting regularly, using Telecom's 3 way calling technology to link members and save substantially on the costs incurred. Some of the activities we have been busy pursuing on your behalf include:

The Executive Secretary, Pauline Bassett has been very busy in sorting out the changeover from Federated Farmers to herself. This has included not only sorting out our records received from Wellington, but also sorting out information received from Baycorp over the outstanding levies of previous years. Unfortunately it would appear from some of the responses over outstanding levies, that once again, someone has not passed on information, or altered the apiary database. I think that we will need to continue to work closely with Agriquality to see what can be done to assist them to maintain as accurate records as is possible.

Maintenance of an accurate database is not only important for the running of the AFB Pest Management Strategy, but also for the future Varroa Management programme. It is also utilised in export certification. We must stress that it is up to each and every one of us to ensure that we meet our statutory obligations of filling in and returning Annual Disease Returns on time!!!! This in turn will save the Management Agency (that at present happens to be the NBA), time and money in a follow up reminder letter.

Our other financial records are still with Federated Farmers in Hamilton, while they are preparing the 2002 annual accounts for audit. I understand that these had been submitted on the 15th of February, and the auditor was with the Federated Farmers' people on the 7th March to hopefully finalise the accounts.

At the end of February, your executive was involved in pulling together two submissions on your behalf. The first was on the proposed Varroa Pest Management Strategy and we outlined the position of the various regions in New Zealand. Indications from the submissions I have seen indicate support in principle for having a National Pest Management Strategy implemented for future Varroa control, as long as the funding of the strategy is sorted out and beekeepers either pay nothing (continued Crown funding), or pay a small portion to fund the strategy. I am also aware that many have asked for a component to be included in the strategy to ensure continued funding for Varroa research. I also personally share this concern, knowing how difficult it is to secure funding from other sources. If we are forced to compete with other institutions, who may be considered more trendy, we could miss out. This would not only be disastrous for our beekeeping industry, but for future agricultural sustainability.

The second submission was on the draft Biosecurity strategy. This was a huge document, which made it extremely difficult to make a detailed submission. Those involved in this submission decided that it was best to make comments on the strategy from the viewpoint of the lessons learnt during

the initial varroa incursion response. We stressed things like the need for organisations to be involved in the strategy, and that the EDPR exercises which many branches had been involved in, in the past were invaluable to enable our members to make a positive contribution to an actual incursion. We also stressed that each organisation's expertise needs to be recognised and utilised during the decision making process.

The Executive has also been very busy looking at the organisation of Conference.

We have discussed how to run our Annual Conference. We have had offers from some members who have organised conferences in the past to help the Executive organise and run this year's gathering. We have decided that we will follow that plan, and have tentatively booked the Rutherford Hotel in Nelson for the 21st to the 24th July. So mark your diaries now!!!

We are looking at changing the format for conference to make it more "beekeeper friendly", and have two days set aside for seminar and workshops. That will enable greater membership participation to feed in their ideas, and be part of the process to set the direction for the coming year for the organisation. This will of course mean that our AGM and remits will be confined to a single day. Feedback from members and fewer people attending Conference sessions than the seminar, indicate that we need to modify our practices to make our Conference more relevant and the time spent more profitable. This will also mean that the process for handling remits will need to be thought through, so that those who are unable to attend the conference still get a fair chance to put their views. Maybe we will need to ask that once branches have voted on remits at their branch meetings, they then submit their votes to the Executive. Where the vote is in unanimous support for the remit, there would be no need for debate at conference. We would however allow time for any member or branch to raise issues on remits not discussed if they felt the dire need to do so in the Conference of Delegates arena.

If we do go along this line of running the remit session, the branches or members putting forward remits will need to have prepared concise rationale for the remit to be put forward to the Executive for their action. More time may need to be given for members and executive to ask questions about the remits.

The Executive has also been active in looking at how we progress the Review of the structure of the organisation, as was asked at the December Special Meeting. We believe that it will need to be an 18 month process to give everyone the ability to read articles in this Journal, to partake in discussions/



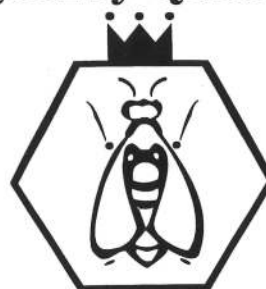
Cover Photo: Dr Bruce Simpson and Paul Bolger at the Varroa PMS consultation meeting in Palmerston North.

workshops in branches and at this conference, and then initiate any changes required. Any necessary constitutional changes can then be made at a Special Meeting at the time of the 2004 conference. To carry out this process, we will be approaching the Honey Industry Trust to see if we can obtain funding. To try to concertina everything needed in the next few months will result in people once again saying that due to their work commitments, they did not have the time to consider everything properly. We are considering engaging two people outside the industry, and two from within the industry to form a steering committee to oversee the whole process, and be involved in the initial articles to go out to members to initiate debate on the best structure to meet the needs of our members.

On Thursday March 6th, Ian Spence, Murray Bush and I met with MAF over the American Foulbrood Pest Management Strategy. As you know, the NBA is the Management Agency for this strategy. We met with MAF personnel to discuss the Application to the Minister for funding under the Biosecurity Levy, and also the five year review of the strategy. The outcome of the meeting was not good in that we have learnt that the application for a Biosecurity levy to fund the AFB PMS will not be going to the Minister for approval, as MAF have deemed that the consultation process was inadequate and flawed. This means that the Association will need to consult with members further before a new application can be submitted. We will keep everyone informed as to what will be happening in the future.

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Pauline Bassett

Executive Secretary, National Beekeepers Association

I would like to introduce myself as I am sure there are NBA members wondering who the new secretary actually is and what is her involvement at this time. Towards the end of last year I was asked to record the minutes of the teleconference Executive meetings in the lead up to the special meeting in December. I was happy to do this as I believed it important that records were kept. After the special meeting I was again approached to make a longer-term commitment as Secretary until the AGM in mid 2003. Although I have not worked hands-on with bees to any great extent I have been a beekeeping wife, business partner and general dogsbody for over 25 years, which certainly helps my understanding of the industry. I have also had a career in my own right for 15 years with the Probation Service, 10 of those as a Manager.

I was born, raised and educated in Taumarunui. My later secondary education was in New Plymouth and I attended Otago University for 3 years. In early 1970 I moved to the Waitomo district with my husband John. We live on 33 acres close to Te Kuiti and this is also the base for Waitomo Honey Ltd which we established in 1980. We have 2 children and 4 grandchildren.

Since my early retirement from the Probation Service 2 years ago I have taken on the administration role in our beekeeping business as well as running a small retail sales section. My office is located in the honey house where John and I jostle for space. I am spending more and more time there as I work on NBA business although fortunately it has not been a full-time requirement (otherwise John would have to learn to cook!). I am appreciating the wisdom and guidance of the current Executive and the NBA members and am enjoying the challenges each day brings.



Don Stedman

As a newly co-opted executive member I offer some background on myself. I'm a Southlander by choice and have been a beekeeper for half my life though seldom dependent on bees for my living.

I was fortunate to find a nightclass introducing beekeeping when I was living in Manurewa and took my first few hives when I shifted to Ruatoria back in 1977. The East Coast provided a baptism by fire as at that time there were no commercial beekeepers operating in the area and feral colonies and swarms abounded. I learnt a lot quickly.

In 1980 we came south to the Catlins where I taught while gradually building up hive numbers and eventually a sideline business. I've always found it easier to make a living teaching than through beekeeping so have mixed and matched for some time now.

Actively involved in the Southland Branch since the mid eighties, I've been Branch President then Secretary for longer than I care to remember and also fill the roles of Branch Disease Co-ordinator and local tutor in Disease Recognition and Elimination, running courses as necessary.

Southland hasn't been able to sustain a hobbyist bee club so I also have a role in keeping in touch with and helping out local hobbyists.

As I'm not a full time beekeeper I've always been a bit diffident about the extent to which I can represent my peers and as a full time Intermediate School teacher at present there are obvious limits to the commitments I can make. However I'm happy to contribute to the NBA to the best of my ability and, as I know how much other workers do for us out of the public eye, I'm happy to do my bit in this complex time.

Don Stedman

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**Bob Blair
Executive Publications**

Message To All Beekeepers Using Methyl Bromide

The Fumigation regulations 1967 are being replaced by the HSNO Act 1996 as from 1 July 2003.

This will have a major impact on the rural sector, which under the old regulations were exempt from the Fumigation Regulations 1967. Fumigants have a new classification of classes 6, 8, and 9 under HSNO and there are no exemptions and quite a few changes.

These include:

HS Locations - proper sign posting and storage facilities.

Approved Handlers certification - 5 yearly renewals - to purchase, handle or use a fumigant, one must have (and carry at all times) a certificate proving you are competent.

Tracking - amounts used, dates, and location must be recorded.

Industries who use fumigants must have a Code of Practice approved by ERMA. This could be expensive for a small industry but we could piggyback on another industry group such as the strawberry growers group.

Approved Handlers must go through a competency test.

They require:

- Knowledge of substance hazard classification, adverse effects, any controls imposed, precautions required to prevent injury, emergency management procedures.
- Knowledge of obligations and liabilities under the Act.
- Knowledge of relevant regulations and codes of practice.
- Practical experience and ability.

Regulations can be viewed on the Govt, website:
www.legislation.govt.nz.

Hazard Substances Regulations. (14 in total)

* - Most effect on beekeepers

2001/111 Hazardous Substances and New Organisms Commencement Order

2001/112 Hazardous Substances (Minimum Degree of Hazard) Regulation

2001/113 " " (Classification)

2001/114 " " (Forms and Information)

2001/115 " " (Exempt Laboratories)

2001/116 " " *(Classes 1 to 5 Controls)

2001/117 " " *(Classes 6,8 and 9 Controls)

2001/118 " " (Packaging)

2001/119 " " (Disposal)

2001/120 " " *(Tracking)

2001/121 " " (Fireworks)

2001/122 " " *(Personnel Qualifications)

2001/123 " " (Emergency Management)

2001/124 " " (Identification)

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There are two ways to obtain Approved Handlers certification. For those with over 2 yrs experience there is the "Grandparenting" scheme. Prove competence before a test certifier and undertake the knowledge part of the new scheme within 2 years.

For less than 2 yrs, go through a new training scheme and be passed by a test certifier.

There are two ways of obtaining this training:

1. Industry group gets together for 1/2 to 1-day training. Courses could be through "Grow Safe" but we, as an industry group would have to contact them to become part of their scheme for the agricultural sector. (Courses could cost up to \$750 for twenty persons).
2. Do a NZQA certificate module provided by the Pest Management Association. This would be the cheapest alternative but we would have to wait until the modules are updated to HSNO specifications.

An alternative to the above is to use a Pest Management Service for your fumigation needs.

Beekeepers who use fumigants should contact the NBA Secretary and register their interest.

Further information can be obtained from the ERMA Web Site www.ermanz.govt.nz

It also might be prudent to order their next lot of fumigant before 1 July.

Frank Lindsay

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Viruses in New Zealand Honey Bees

Jacqui Todd, HortResearch, Mount Albert Research Centre, Auckland, New Zealand.

Brenda V Ball, Plant and Invertebrate Ecology Division, Rothamsted Research, Harpenden, Herts. AL5 2JQ, UK.

When Varroa destructor was first detected in New Zealand in April 2000 it spelt big problems for the country's 4000 beekeepers. It was also a major concern to the country's orchardists and farmers who rely on honey bees to fulfil their vital role in the pollination of important agricultural and horticultural crops and in maintaining the diversity of plant communities in pastoral habitats.

Although the discovery of the mite was a serious blow for the beekeeping sector in New Zealand we are fortunate to be able to benefit from the information and knowledge gained through research on *V. destructor* in other countries. NZMAF and researchers in New Zealand have been active in gathering this information and are trying to relate it to the New Zealand situation.

Recently Jacqui Todd from The Horticulture and Food Research Institute of New Zealand Ltd (HortResearch) visited the UK to continue collaborative work with Brenda Ball at Rothamsted Research in Harpenden. The primary aim of this research partnership is to determine the impact of honey bee viruses on New Zealand honey bees following the establishment of varroa in the North Island.

This research project, funded by the C. Alma Baker Trust in New Zealand, is the result of an earlier visit Brenda made on a C. Alma Baker Fellowship to HortResearch in Auckland. The work complements investigations on host-parasite-pathogen interactions in progress in both New Zealand and the UK, funded respectively by the New Zealand Ministry of Agriculture and Forestry (NZMAF) and the Department for Environment, Food and Rural Affairs (DEFRA).

One of the most important findings from Europe has been the discovery that the death of infested colonies is due to the presence of honey bee viruses (Ball, 1997). Brenda Ball and her colleagues at Rothamsted found that the type and prevalence of these infections change as the mite enters and becomes established in an area.

Laboratory studies have shown that varroa are able to transmit a number of different honey bee viruses between adult bees or to developing pupae, but few of these cause more than transient infections in infested colonies. Detailed investigations of the spread and persistence of the damaging viruses vectored by the mite have shown that to avert colony death, mite treatments must be applied to disrupt the transmission cycle at critical times of year. Identifying and understanding the epidemiology of the important viral infections in New Zealand should result in better targeting and timing of mite treatments. This will decrease the cost of control to beekeepers and minimise chemical applications into colonies.

A survey of honey bee pathogens undertaken 14 years ago (Anderson, 1988) detected nine different honey bee viruses within New Zealand colonies. However, the study provided only limited information on their distribution, seasonal incidence and prevalence, which has not been augmented by more recent investigations. The collaborative work initiated between Rothamsted and HortResearch scientists aims to fill these gaps in our knowledge. Our investigations will provide fundamental information on the range of viruses present in honey bee colonies; the identification of viruses which are responsible for colony mortality in association with *V. destructor*; the changes in prevalent infections over time, and; the ways in which transmission of these viruses may be disrupted.

This year, the work has focused on the monthly collection and analysis of bees and mites from 32 mite infested colonies in New Zealand. Samples of dead and live bees were collected from November 2001 to April 2002, by which time many of the colonies had collapsed. The dead bees were extracted and tested by immunodiffusion against antisera to the following viruses: cloudy wing virus (CWV), deformed wing virus (DWV), chronic paralysis virus (CPV) and its associate particle (CPVA), acute paralysis virus (APV), black queen cell virus (BQCV), Kashmir bee virus (KBV), sacbrood virus (SBV) and slow paralysis virus (SPV). Bee and mite samples were also tested for CWV and DWV using an indirect ELISA, a more sensitive means of detection.

The infection most frequently detected in dead adult bees was CWV, a similar observation to that in Britain. However, it is already known that this virus is not transmitted by *V. destructor* and its prevalence is therefore unlikely to be directly affected by the feeding activities of mites. Five other virus infections were detected; BQCV, CPV, CPVA, KBV and SBV. These were found in a number of different colonies at different times of the year. Analyses of the live bee and mite samples are continuing and will provide further insight into the establishment and transmission of these infections.

It is significant to note that deformed wing virus (DWV), now the predominant virus in infested colonies in the UK, was not detected in any of our samples. Pupae infected with this virus may develop into adults with deformed wings, although not all adults infected with DWV will show this abnormality. Most of the other viral infections also do not cause visual symptoms that allow for reliable diagnosis in adult bees or brood, the two exceptions being SBV and CPV. SBV causes brood to become watery with a sack-like appearance and may result in high levels of brood mortality. CPV causes death in adult bees and is characterised by trembling, flightless clusters of bees, which often have one or more legs paralysed.

Because it was not possible to get consecutive samples from all colonies, future studies planned for the 2002/2003 New Zealand summer will intensively sample fewer colonies. The work conducted through this collaboration will be an important source of information for beekeepers and NZMAF policy makers as they develop the most effective and efficient mite control strategies for New Zealand.

Anderson, D.L. (1988). Pathologists report (to the New Zealand National Beekeepers Association Conference 1988). *New Zealand Beekeeper* 199, 12-15.

Ball, B. (1997). Varroa and viruses. In: #.arroa! Fight the Mite (Ed. P. Munn and R. Jones). International Bee Research Association, p11-15.

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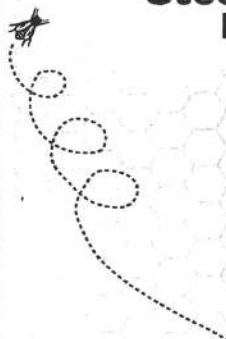
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BK123

From the colonies



Auckland

The honey season is coming to a close, the last of the penny royal crop being washed out through too much rain. Most beekeeper complaints this season has been too few honey supers - some honey has been lost because not enough boxes have been available to put on some hives. As a consequence, quite a lot of swarming has taken place at different times. The swarming impulse began early in the spring and has not really ever stopped. The late frosts in the spring meant lovely hot days and unusually early honey flows. When syrup tanks would normally be emptied every day, I took mine off the truck and only carried a few buckets of syrup - and these were not usually all emptied at the end of the day. Personally, it was the easiest spring I have ever had beekeeping.

Late Summer, early Autumn varroa treatment has started. The hives are looking good with very few mites being seen, but most beekeepers are well aware now that this is very deceiving and are not delaying their treatment. The bulk bee market looks to be very strong and competitive this year and will be real icing on top of a very big cake.

One thing that some beekeepers have noticed over the last two seasons with varroa throughout their beekeeping areas is a sudden unexplained surge of AFB. It is not just one or two beekeepers noticing this. Perhaps varroa is condensing what is naturally occurring, but for those beekeepers who have not yet got varroa, it is something to be wary of.

The branch will be having a meeting this month to discuss what to do when the first signs of resistance that varroa will show to the chemical products that are being used are noticed and how to respond. We are hoping that Mark Goodwin will be at this meeting.

- **Brian Alexander**

Waikato

The Waikato Beekeepers had a difficult spring with the two extremes of conditions, most hives close to starvation with record amounts of sugar being fed, and finding some coming out of winter with large numbers of mites.

We were fortunate that pollination was running late otherwise we would have not had our hives up to pollination strength. Just as we started pollination, hives went from starving then on to a very good honey flow. If there had not been frosts in the Bay of Plenty this year we would have been very short on hives for pollination, as it was we were hard pressed to supply the orchard's requirements.

I attended the NBA's special meeting in December and I have found it to be one of the best meetings that I have ever attended, it was a pity that a few other branches missed this meeting, it was chaired by Doug Kidd and he did an extremely good job.

We have had an extremely good crop this year in the Waikato with some areas producing bumper crops but most areas with above average yields.

A daunting task lay ahead with the crop now having to be harvested and miticides being put in. The mite levels are starting to climb and most local beekeepers are starting to put strips in

- **Lewis Olsen**

Waikato

Otago

Honey production has been patchy. Southern and Coastal areas were OK but it dried out inland. Everything slowed after a cold snap in January. Production ranges from 25 to 60 kg per hives.

Prices range from \$4.50 to \$5.00 including the drum. Some payments are on a cash basis. Beekeepers are fairly happy with the crop.

- **Blair Dale**

Canterbury

By now most of the seasons honey has been removed from the hives and requeening has been completed for those who raise autumn queens.

Generally the crop in Canterbury has been pleasing to most beekeepers, especially after last year. There have been reports of very good crops in some areas however the coastal hives have been poorer.

Following the resignation of the President and Secretary at last months meeting a caretaker President and Secretary were nominated to carry on to the AGM. Our AGM will be held on Tuesday 29th April, 2003 - further details to be advised.

The feral eradication trial is expected to continue again this Autumn to ascertain the ability to kill feral hives. For any attempt at an eradication of varroa from an incursion into the South Island we need to be able to bait and poison feral hives to stop varroa spread.

There is also a limited surveillance for varroa in the South Island and beekeepers have been forwarded letters from David McMillan regarding this exercise, along with the exotic honey bee surveillance.

- **Roger Bray**

Nelson

Beekeepers are just getting extraction underway. The crop looks to be better than last year.

A submission was put into the VMG asking for concentrated surveillance around ports of entry and rail areas with hives monitored monthly. It was felt that this would be more cost effective. They considered it a waste of time to continue surveillance in a broad area as most hives in the districts were used for pollination and once varroa was found, it would have been spread through most of the district. The Tasman Council did not support the idea of ratepayers' money being put into this scheme.

Honey prices are between \$4.00 and \$4.80 with manuka fetching \$11.50 but it is felt this would drop a little when orders were filled.

- **Michael Wraight**

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Marlborough

Cool spring conditions set back early manuka production however things came right over Christmas, which has resulted in an average crop.

Clover looked promising earlier but didn't produce as much as expected, as the weather never got really hot.

35 - 40 attended their Varroa PMS meeting. They were not impressed that the discussion document did not include an eradication plan. They supported the continuation of the buffer zone and wanted increased surveillance for which members were willing to assist.

AgriQuality were planning to hold an Exotic Surveillance Exercise in their district next month.

Honey prices vary from \$4.00 to \$4.50 for clover. Manuka at \$10.

- Will Trollope

Southern North Island

Taranaki.

Overall a patchy, to average crop. Coastal areas produced well. South of the mountain, feeding of hives continued up until Christmas then it warmed and went into drought conditions. Clover produced well in some areas. Manuka was very late and had a patchy flowering in some areas.

Sixty beekeepers attended the Varroa PMS meeting in New Plymouth and they were disappointed to see that the existing line was being scrapped in favour of a north - south line

protecting the East Coast. Their varroa management group had worked hard to educate beekeepers and farmers and felt they had the situation under control with only one apiary in the northern outskirts of the province affected. Varroa had yet to cross another two ranges to be in the province proper so felt that either the line should stay or that a special line should be drawn around the province.

High country was late starting and looked promising but production has been affected by drought and an early frost in January - 2deg C. Still it's a much better crop than last year.

Further south the sand country dried early and hives that were up to strength, produced well. By late January only areas in flood plains were still producing and could have continued with sufficient rain.

On the East Coast, hives against the ranges have not produced well (too cold) but away from the ranges and along the coast, production is average to above average.

Southern areas were patchy. Hives out of the wind produced well but everything stopped about mid January due to insufficient rain. Hives are averaging about 38 kg.

The Varroa Meeting in Palmerston North was attended by approx 22 beekeepers. Members supported continuation of the existing line. It had been very successful and has assisted in slowing the spread of the mite. They asked that a cost benefit analysis be conducted for the western side of the Island and depending upon surveillance results, the line continue until it proved uneconomic to continue.

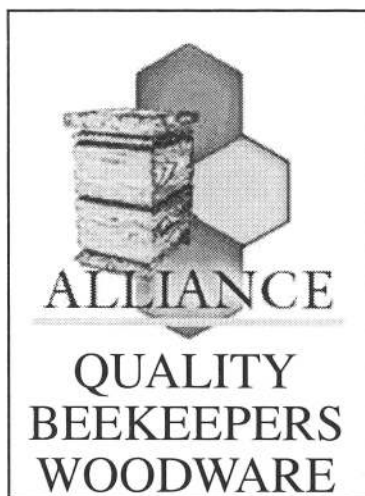
- Frank Lindsay

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BK6

It has been brought to the Executive's attention that one of the articles in the previous magazine had a piece omitted from it. We have asked the publications committee to publish the omitted section from the article in this journal.

Jane Lorimer
Acting President NBA

Appointment of Replacement Executive Members

Rule 16(f) provides that, if a casual vacancy occurs in the Executive, **the remaining members** may appoint a person holding the appropriate residential qualification. There is no mention that a quorum is required for this purpose. The requirement for a quorum of four is only mentioned later in the context of meeting procedures.

It is of course obviously desirable that a quorum is present for co-option of replacement members. However, as a general issue, it would be a sensible interpretation that it is not necessary to have a full quorum to appoint replacement members to cover a crisis situation in an organisation. For example, if we envisage a situation where the majority of members of an organisation's committee suddenly become unavailable because of a tragedy, the sensible approach would be that the surviving members would co-opt other people to help until the democratic processes can take its course.

I therefore believe that, even if it is considered that the Executive did fall below the quorum of four for a time, the sensible interpretation is that the remaining members had the power to act to restore sufficient numbers. Whether this is considered to have occurred by persuading Gerard Martin to withdraw his resignation or by co-opting him back on to the Executive, the outcome is positive. As I mentioned before, Gerard was elected by the membership, and so his presence on the Executive is preferable to having someone who was not elected.

Status and Powers of Federated Farmers

My understanding is that Federated Farmers provided secretarial and administrative services to the NBA under a contract arrangement. In simple terms, they were an employee of the NBA. I also understand that, following the Special Meeting, the Executive of the NBA, with a sufficient quorum, voted to terminate those services as from 31 December. If this is correct, the later action of Federated Farmers in refusing to hand over the property and records of the NBA seems to me to be equivalent to a dismissed employee refusing to return the property of his or her employer. In that situation, an employee may find themselves liable to face a criminal charge. It would certainly not be a legitimate defence against such a charge for a dismissed employee of a company to claim that he or she retained company property because he/she believed that the company's Board of Directors may not have a quorum.

There is no doubt in my mind that the responsibility of the former Secretary was to hand over the NBA material to the

elected Vice-President (and now Acting President), as the most senior remaining officer in the NBA, or her authorised representative. If someone other than the Acting President requested the material without suitable written authorisation, it may have been prudent for the Secretary, for his own protection, to seek written confirmation from her before handing it over. However, it was certainly not appropriate for him to refuse to hand over such material purely on the grounds that he believed that the Executive may not have a quorum. To put it bluntly, at that point it was no longer his business.

The procedure to be put in place to restore a full-strength Executive is entirely an internal matter for the membership of the NBA

Keith Garratt
10 February, 2003

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BK128



This update will focus on the Varroa Phase III (Long term management plan) process which is underway, but will also briefly mention some other points which may be of interest to beekeepers.

Phase III of Varroa Management Programme

In July 2000, the Government instructed MAF to put in place a three-phase management programme for varroa. The initial phase involved the immediate treatment of all known infested apiaries, which was completed in a matter of months. Phase II began in November 2000, and was scheduled to last until November 2002. This programme included education, research, registration of generic compounds, surveillance and movement control. Because the programme has been delivered under budget, MAF will be able to continue Phase II until 30 June 2003. Beyond that point, MAF has no funding for any ongoing varroa management measures. Phase III is described in the initial documents as a sustainable long-term management programme for varroa. MAF was instructed to work with affected industries to facilitate putting a programme into place.

Varroa Planning Group

To this end, MAF called together a Varroa Planning Group (VPG), made up of representatives of affected industries. The VPG membership is made up of:

- Federated Farmers
- Local Government New Zealand (an umbrella group for regional councils)
- Ministry of Agriculture and Forestry
- National Beekeepers Association (NBA)
- New Zealand Fruitgrowers Federation/ Vegetable Growers Federation
- New Zealand Grain and Seed Trade Association (an arable-sector group)
- Pipfruit Growers New Zealand
- Zespri International

Beekeeper membership is currently being adjusted to ensure both the NBA and the Federated Farmers Beekeeping Industry Council is represented on the group.

What Next?

After much consideration, the VPG released a discussion document in December 2002 (available on the MAF and NBA websites). Consultation meetings were held in January and February 2003 to seek feedback on the discussion document. In addition, just over 60 written submissions have been received from interested parties. On 17 March, the VPG will meet to consider the feedback it has received. It will then decide whether to develop a National Pest Management Strategy (NPMS) proposal, and what such a proposal should contain. If they decide to progress with a NPMS, a major effort will be required in order to get a programme in place by 30 June. If this deadline is not achievable, the VPG will need to talk to the Minister of Agriculture about the possibility of 'bridging measures' to maintain controls over varroa until a strategy can come into force.

If it is decided not to proceed with a Pest Management Strategy for varroa, then the current position is that all legal controls

on varroa would be lifted on or before 30 June. In practice, the government may agree to maintain some legal restrictions on movement to the South Island, but it is highly unlikely there would be any awareness-raising measures, enforcement or surveillance specifically aimed at varroa. North Island movement controls would be lifted.

Feedback from Consultation Meetings South Island

In the South Island, there was unanimous support for the objective of maintaining South Island freedom from varroa. A similar level of support was recorded for maintaining inter-island movement controls, and many people wanted a higher level of active surveillance at Cook Strait. Meetings from Christchurch southwards showed a high level of support for intensive surveillance, with the objective of detecting a varroa incursion while it was still eradicable. However, many people expressed scepticism that the government would carry out any response to an incursion, or that an eradication attempt would be seriously considered. In Blenheim there was a consensus that the meeting did not support the idea of an eradication attempt in the South Island. While the Nelson meeting did not reach a consensus about anything, a number of beekeepers expressed a similar view to those in Blenheim.

North Island

Most North Island meetings supported steps to maintain South Island freedom from varroa, but were more focussed on North island movement control measures. Beekeepers south of the existing Movement Control Line (MCL) generally supported the retention of movement controls in the North Island, but had differing views on where any MC Line (or Lines) should be placed. Many of those in eastern regions supported a line running down the Ruahine Ranges, which would cut them off from the south-western regions like the Manawatu where some spread has occurred. Beekeepers in these western regions (Manawatu, Taranaki) strongly supported retention of the line in its existing location, with minor modifications. The two meetings north of the MCL were opposed to maintaining movement controls any longer, as they felt these were unfairly restricting the ability of beekeepers to manage their businesses in the most effective manner possible. The Hamilton meeting also discussed the possibility of a Pest Management Strategy containing measures which would give the Management Agency some degree of control over sale or use of varroa treatments. This was felt to be an essential tool in slowing the development of miticide resistance.

Funding

One theme common to almost all meetings in both islands was that 'someone else' should pay for (or at least contribute to) whatever measures the meeting supported. The Government's position is that it will consider paying for responses to a South Island varroa incursion as if varroa was a 'new to New Zealand' exotic pest, but it will not financially contribute to ongoing costs of a varroa national pest management strategy. This position was re-stated to the VPG in a meeting with the Minister of Agriculture on 20 February.

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BK120

Given the reluctance of the Crown to contribute, all sectors likely to be affected by varroa need to consider whether they are concerned enough about the impacts to fund a strategy themselves. The issues around funding are described in some detail in the VPG discussion document.

General Update Information

Surveillance

By the time this magazine is published, surveillance sampling should be underway in the South Island and lower North Island. In the South Island, sites will be randomly selected within high-risk grid cells. Unlike previous years, all beekeepers will be offered the opportunity to test their own hives if they wish. If they do not want to carry out their own testing, their hives will be tested by an Authorised Person (AP) contracted by AgriQuality New Zealand. Because of funding constraints, only high-risk grid cells will be tested initially. Lower-risk areas will be tested if and when funding becomes available.

Sampling in the lower North Island will also be targeted at risk areas. Beekeepers will be initially asked to test their own hives, with APs used as backup. AgriQuality New Zealand will test a percentage of sites as an audit of surveillance effectiveness.

Autumn Varroa Control

Beekeepers need to be aware that the autumn is the season with the highest levels of mite invasion. Beekeepers in infested areas should regularly test a proportion of their hives as a guide to varroa levels. MAF and AgriQuality still encounter beekeepers who have hives with clear evidence of extremely high mite levels (such as mites readily visible crawling on comb) but who have no immediate plans to treat their hives. While treatment thresholds are still being developed for New Zealand, a precautionary approach to mite treatments should be adopted in the autumn. If in doubt, test a percentage of hives on each site. If still in doubt, carry out a treatment.

Formic and oxalic acid treatments

Despite a high level of interest in these products prior to registration, MAF is unaware of either of them being used widely within New Zealand. While they are not as simple to use or as effective as synthetic miticide strips, these is a large body of evidence that they can play a useful part in a varroa control programme. Beekeepers wishing to use them may be wise to experiment on a small number of hives first, and to monitor varroa levels after treatment. Information on formic and oxalic acids can be found in the green 'Control of Varroa' book published by MAF. More detailed guidelines on use can also be found on the MAF website under <<www.maf.govt.nz/varroa>>.

Thymol

Over the past summer, HortResearch has carried out trials on behalf of MAF to gather information on the residues remaining in hives after treatment with thymol crystals. It is believed this data will be sufficient to allow thymol to be approved for varroa control in New Zealand within the next few months.

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BK131

Letter to The Editor



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BK129

Accurate honey samples show correct UMF™ ratings of manuka honey

By J. M. C. Stephens and P. C. Molan

With an increasing interest in trading manuka honey with the “Unique Manuka Factor (UMF™)” rating, bee keepers and honey packers are having their manuka honey tested by an accredited testing laboratory.

Developed by the Honey Research Unit, University of Waikato, the testing procedure is accepted internationally as a robust and reliable method. Because its procedure depends on a living bacterial species, there will inevitably be a small amount of variation (less than 1 UMF™ unit) when the same honey sample must be re-tested. However, the UMF™ rating may differ substantially if different samples from the same drum of honey are tested, causing confusion for beekeepers, honey packers, and manufacturing retailers.

The main cause of the larger variation in UMF™ rating is the difficulty in obtaining a representative sample from honey in a large container. Layering occurs in a container of honey, with different UMF™ activities in each layer. Poor sampling techniques can result in obtaining an activity rating for a sample that is quite different from that of the whole drum, and any subsequent sample may be taken from a different layer which is different from the first, and again different from the whole drum.

With the aid of a series of diagrams, the reasons for the types of layering that can occur are discussed, and straightforward procedures for obtaining truly representative samples are recommended.

Sampling manuka honey for UMF testing – a checklist

If possible take the sample while extracting

- from a well mixed holding tank
- by split stream sampling

If coring drums, ensure sample is representative

- treat the honey as a viscous liquid
- ensure flow into coring tube matches rate of insertion
- do not core drums that have been stored on their side

Thoroughly stir the honey sample

- immediately after collection by split stream or coring
- again if stored (warm sample if necessary)

Never sample from the top of a drum

Layering in drums of honey

Manuka honey is a difficult product to work with, due to the variability within combs and its inherent thixotropic nature. The UMF™ in a series of supers will differ, depending upon the amount of manuka nectar collected and stored by the bees. For example, the bees on a site may be principally collecting manuka early in the season, but later be working pasture plants. Accordingly, the early supers will have more manuka in the honey, and the latter less.

As the UMF™ in active manuka honey alters proportionately to the amount of manuka in that honey, the UMF™ rating of the earlier supers will be greater, and the later supers less, probably dwindling away to zero as the season progresses. This variability in the non-extracted honey explains the variability found in storage drums.

Small-scale honey extractions when drums are being filled in sequential batches will cause layering (Figure 1A). The honey from different batches of extractions added to a drum will remain in layers, and each layer may have a different UMF™ rating.

A further complication occurs if a less dense honey is placed in the drum first. With the addition of denser layers, the less dense honey will float to the surface (Figure 1B) until cooling slows and the process stops.

Additionally, a drum stored upright without an airtight seal will absorb moisture from the air (Figure 1C), resulting in a layer of diluted honey at the top of the drum.



Fig 1A

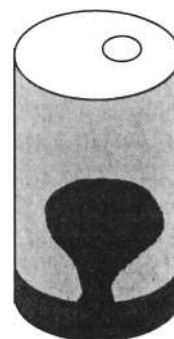


Fig 1B



Fig 1C

The layering (1A) of honey can occur if a drum is filled from sequential extractions, each layer having a different UMF™ activity rating. Flotation (1B) of a less dense layer at the bottom of a drum towards the surface will occur, until trapped by solidifying honey. Moisture dilution (1C) can occur, when moisture from air dilutes the upper layer of an unsealed drum.

Even if the drum is filled from a single batch, layering will result from crystallisation. Honey is a super-saturated solution of glucose, and crystals will form on storage. Typically, the crystals settle to the bottom of the drum, leaving the UMF™ concentrated in the upper layers containing more liquid honey. These crystal layers will form side to side (Figure 2A) if the drum is stored upright, or from top to bottom (Figure 2B & 2C) if the drum is stored on its side.

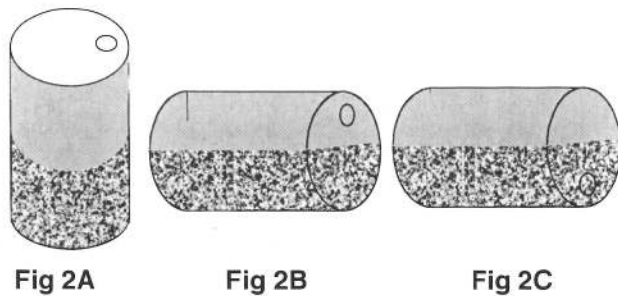


Figure 2 – The crystallisation of honey in a drum filled from one extraction, with the crystals settling to the lower level of the drum concentrating the UMF™ activity in the upper levels; when stored upright (2A) or on the drum's side (2B & 2C).

Sampling methods

It is difficult to obtain a representative sample of manuka honey once it is in the drum. Coring can be done, as described below, but if a sample is to be truly representative, it is best taken as the extracted honey is being drummed. When drums are filled from a single, large batch of extracted honey that has been in a thoroughly-stirred holding tank, a sample from this should be truly representative of the honey in the drums.

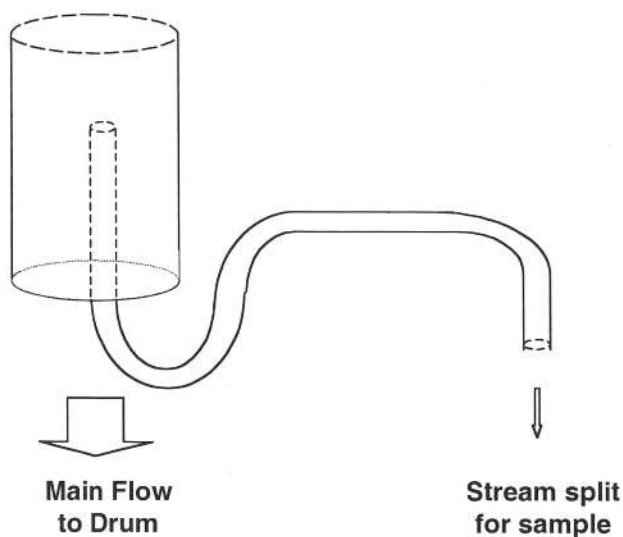


Figure 3 – A device for obtaining a split-stream sample of honey from the pipe when filling drums. The U-bend in the sampling pipe prevents honey from tracking along the outside of the pipe. Alternatively, the sampling pipe could be inserted through a hole drilled in the side of the drum-filling pipe.

An alternative is to split the stream of honey filling up the drums, so a small proportion flows into a sampling container.

If the proportion split off is a regular stream (Figure 3), then the mix of different batches of honey in the sample collected will be the same as in the drum. The honey in the sample Container must then be thoroughly stirred, while still warm, ensuring it does not contain layers with different activity.

When a sample has not been obtained from a stirred vat or split stream during drum-filling, or if there are doubts about a supplied sample's authenticity, testing has to be carried out on a sample taken from the drum. The following guidelines will help provide the most accurate estimate.

The small sample sent for testing must reflect the makeup of the entire drum, and a core sample is the only kind that will be anywhere near representative. Because honey will become fluid under the pressure caused when a corer is inserted, treat the honey as a viscous liquid.

Insert the corer at a slow and regular pace, allowing the liquid to flow into its bottom at the same rate the tube is inserted. This is made more difficult by the differing viscosities of the honey layers and the likelihood of crystallisation in the lower portion of the drum. Therefore, a transparent coring tube should be used. As it is inserted, the level of the honey inside the tube must remain level with the surface of the honey in the drum, ensuring honey is removed evenly from all layers within the drum. The top of the corer should be sealed to prevent fluid honey in the tube being lost as the tube is withdrawn.

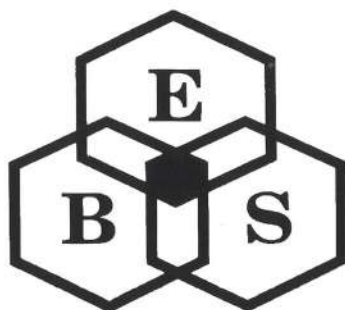
Using this method will allow a fairly representative sample to be collected from the scenarios shown in Figures 1A, 1C and 2A. However it is not possible to determine whether less dense honey has floated (Figure 1B), creating a pool in the centre of the drum. Where a drum has been stored on its side, a core sample will give misleading results, as it could be from the upper (Figure 2B) or lower (Figure 2C) portion of the honey in the drum as it lay.

Many beekeepers are taking representative samples of a batch as the honey is drummed. If these are stored, the honey in the sample container may behave similarly to the honey in the drum and layer because of crystallisation. If a portion of this sample is used later for UMF™ testing, the honey must be warmed then thoroughly mixed, otherwise the 20-30 gram sub-sample from the top will not represent the whole sample and thus the honey in the drum.

The overall recommendation is:

- Take samples when the drums are filled, and realise that even when the best sampling procedures are used, a core sample from a drum may give only a rough indication of the activity of the honey inside it.
- Drums of honey should not be stored on their side before the honey has solidified.

– **Honey Research Unit, University of Waikato,**



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Requeening

Frank Lindsay



Queen introduction was covered in last month's magazine but there is still interest in the subject and is something that must be mastered to be a competent beekeeper.

Failing to find and remove the old queen is one of the greatest failings of hobbyist beekeepers. I have seen queen cages put into hives without first de-queening the hives and the beekeeper wondered why they were killed. Quite a lot of beekeepers do not recognise that some hives contain two queens. A mother and daughter especially at this time of the year.

Observing the signs and sounds of a hive when it is queenless is important. A hive that is not flying when all others are, a hive that "roars" when smoke is puffed across the frames could be queenless or could have a virgin as a queen. A large number of drones and a drop in bee numbers are also important indicators that something is wrong.

Check the brood frames to see if the bees are drawing out queen cells or place a frame containing eggs from another hive into the hive and check in a few days to see if they are drawing out any of the cells.

I have covered finding the queen in other articles. Look on emerging brood frames, look on the 3rd frame in on the sunny side at about 10am in the morning, shaking all the bees through a queen excluder, moving a hive away to reduce bee number, using a queen excluder to find which part the queen is in. I thought of another method that Ted Roberts used to advocate when all else failed. Place a frame of eggs and brood from another hive in the brood nest and close up the hive for 1/2 an hour.

Open the hive and lift out the brood frame. The Queen should be on the frame looking for the foreign queen whose pheromones are all over the frame.

Requeening

When requeening hobbyist should use a method that gives a high chance of success and give them insurance. I.e. if the new queen fails to be accepted, you should still have the old queen available so that the hive is not lost and there isn't a break in brood production. This is especially important in the spring.

Knowing about queens and how to look after them is important. Water them; keep them away from sunlight, in a warm position above the fridge and away from pesticides. Introduce them as soon as possible.

You get better results if there is a honey flow on. Remember that queens are generally produced during a flow so if there isn't one on, feed sugar syrup or sprinkle it over the frames just before the queen cage is introduced. Remember though not to spill it outside the hive in the autumn as this could start robbing.

A queenless hives does not always defend itself against robbers.

Older field bees recognise their own queen and are likely to ball your new introduced queens if she gets out immediately.

Hence requeening systems are designed to fool the older bees or to reduce their numbers in the hive. I.e. make a nuc or split.

Research has shown that by removing escorts, there is a greater acceptance rate and if both queens are laying at the same rate, the pheromone levels will be equal and therefore you get a quicker acceptance.

This was demonstrated in Steve Taber's Book, *Breeding Super Bees* where queens from two different hives were swapped endlessly from hive to hive without the need to cage them. This was achieved by first finding the queens in the two hives and simply picking them up and replacing each queen in the same position on the frame from which they came. The queens went on immediately as before and the bees took no notice of them.

If you try this method of requeening, watch the queen for a minute after she is put down on the frame. If she immediately goes about her business and bulldozes her way through the nurse bees without attracting any attention, she is accepted. If on the other hand some bees jump in her and cling to her, she won't be and will need to be caged until the bees accept her as their queen.

Brother Adam used the 'Nuc' method of requeen by establishing queens and getting them laying before replacing the queens in his production units. Laying queens are acceptance by a strong colony where those "off the lay", are not generally accepted straight off.

Methods:

For real safety, i.e. for an expensive queen one can use a push-in cage. This consists of 4 mm (or smaller) mesh gauze shaped in a square. Before you are ready to introduce the queen, you must first remove all the escort bees from the mailing cage. This is done against a window or in the cab of a vehicle by releasing the cage plug and letting out all the workers. If the queen comes to the opening put your thumb on the opening and wait for her to move away. If she gets out, release all the escorts and then re-catch her. Open the hive (after removing or killing the old queen the day before), take out a frame of emerging brood, shake all the bees off and press the cage into the face of the comb. Then slightly lift an edge and allow the queen to run into the push in cage, which is then pressed down into the face of the comb again. Close the hive and leave for three days. Inspect the hive for any developing queen cell buds on the combs and remove the cage when the queen is laying. In between times, the emerging bees will look after the queen and accept her. If she escapes and flies, put the empty cage on the exposed frames and leave for 10 minutes. She should return to the hive and can be captured.

Another method of introducing a young queen to a colony is to pierce a small (white) sweet bag with a few holes and brush twenty workers from the colony to be requeened into the neck of the bag. Close the bag and shake the contents vigorously for not less than two minutes, and it will be found that the gyrations and shaking renders the bees into a dazed

condition although they are unhurt. Place the new queen in the bag and close the neck with a light string to ensure the bag stays closed.

Fasten the bag by the string to the mid-frame by removing that immediately adjacent and leave the hive undisturbed for three days. By then, the queen will have been released and should be laying normally.

By removing the natural attendant bees and substituting workers from the new colony the risk of fighting is eliminated. This method was practised extensively by the Wellington Beekeepers when I joined about 30 years ago.

Other beekeepers dribble honey all over the queen and place her on a frame. Some have dropped the queen in water for a minute to dilute her pheromones and then pop her on a brood frame.

I have used virgin queens to requeen poor hives. In the spring you may come across a swarming hive with virgins emerging. If you do nothing, it will swarm. I usually split the hive into three to reduce crowding and put a queen cell in each split in the hope that two or three V queens will mate and then the hive can be combined into a double unit just before the flow.

What to do with the excess of virgins emerging from the cells? There are two thoughts here. Firstly by using these virgins you may be using a bee that has a propensity to swarm. After doing this for a few years all the hives will swarm early. However if you have a regular replacement programme (buying in queens) or producing queens from your best producing and over-wintering hives this is unlikely to happen.

So I tend to use these virgins if they are on hand but first they must be fed or else they will die within an hour. Put the newly emerged queen in a cage and smear pollen and honey on the outside of the cage. It's important that new queens get a feed of pollen straight off.

Knowing this, it also makes it easy to find them in a hive if you come across a hive where they are emerging. Look for them on the pollen and honey frames. They are usually much lighter coloured than your bees and tend to move quickly so stand out. Normally queens won't immediately start fighting each other after emerge. There's usually a gap of 3 to 4 hours before they start fighting.

In the autumn it's possible to requeen a hive without de-queen by driving a virgin in at the entrance. Use a little smoke to drive back the guards and then release the queen. She will run in and will head for an outside frame. They are able to get in undetected, as they exhibit no pheromones, the same as a drone. Once inside the queen will normally dispatch the reigning queen, mate and take over the hive.

Never try this method in the spring - the result is a massive swarm and the loss of a honey crop. In the spring always make a split or nuc.

Another method of requeening is the use of queens cells. The Berry Boys from Hawkes Bay, (now famous for a TV advert) autumn queen all their hives using use two-day-old cells into a queenless hive. If they can't find and dispatch the queen straight off, they go through the hives splitting them in half with a queen excluder. Four days later they return and look through the half of the hive with eggs, find and dispatch

the queen and either right away or a day later put in a two-day-old queen cells (More on this in a later article I hope).

Another method is to use 10-day-old queen cells. If you live close to a queen breeder or produce cells yourself, this is a cost-effective option and is a method of requeening straight into production hives. At 10 days its safe to handle the cells gently as the queen's wing buds are not directly in contact with the sides of the cells. (Drop the cell of an 11-day-old and you end up with a wingless queen). The cells are protected from being torn down by placing the cell in a piece of tubing or wrapped in tinfoil /insulation tape leaving the bottom exposed so the queen can emerge. 1980's research by Murray Reid proved you can get an 80% acceptance without de-queen the hive beforehand. In the middle of the flow when bees are plentiful, the cell can be placed in the top honey super. But into the autumn when the bees retract to the brood nest when it gets cold at night, it's best to place the cell in the middle of the second super. I usually go through an apiary and put a cell in each of the good production hives and split those that did not do well in half and put in two cells. This produces spares for those hives that fail to requeen themselves.

Once you start queen rearing you will find out just how many queens do not come back to their hives unless the hives are distinctively painted and are well separated from other hives. When hives are in blocks of four, a new queen tends to head for the hive with the most scent coming from it so you quite often end up with queenless hives, hence it always pays to make up extra nucs to replaced lost queens.

I usually put splits on top of my existing hives with entrances to the side or rear. Even with this method, a percentage of the new queens end up in the bottom hives, so I thought I'd put the splits on the bottom boards and the main hives above. The field bees return to the bottom splits boosting bee numbers which, means the nuc establish well but even with this approach, some new queens still went into the main hives above the splits. How did I know? You find all these things out when you start marking queens. I also found it pays not to mark virgin queens before they are mated. The colours seem to make them more obvious to birds and you get far less mated queens returning to hives.

So when should you requeen? Most Commercial beekeepers do this annually. A new queen more than pays for its self with an increased honey crop, and in the spring there is less work in preventing swarming.

Most hobbyists replace a queen when the queen's fecundity drops, i.e. the rate of egg laying reduces resulting in a spotted brood pattern.

By not planning and ordering ahead, they often find it difficult to get queens in the spring, so autumn is the best time to replace queens when they are more plentiful and you get a better mating.

Incidentally those beekeepers trapping pollen (recording daily outputs) have reported that they can tell a queen is failing long before you see any evidence of spotted brood patterns in the cells. Pollen production drops off quite a bit about a month or so before anything can be seen in the hive.

Good luck with your queens.

Frank Lindsay

“Put some time aside”

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See April Edition for more. . . .



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Draft Bio Security Strategy

Jane Lorimer and
Frank Lindsay

Submission on the draft Biosecurity Strategy for New Zealand on behalf of the Members of the National Beekeepers Association of New Zealand Inc.

The Association members would agree with the aim of the strategy to have the best biosecurity strategy in the world to keep New Zealanders, our natural resources, our unique native flora and fauna safe and secure from damaging pests and diseases.

We would argue that if the above is part of the Biosecurity vision, then Government should continue to contribute a portion to ongoing research, education and control of the Varroa mite, Varroa destructor. We are disappointed that the initial funding has ceased and we as a small industry must pick up the pieces half way through.

We agree there is a need for a greater stakeholder involvement in Biosecurity issues. If MAF, or Mfish become the key groups overseeing biosecurity issues, then they need to form strong relationships with stakeholders, and be willing to listen to 'experts' in the stakeholder groups.

The Associations members would like to see a greater emphasis on pre-border protection. In the surveillance area, our industry does rely on early detection of exotic species but unfortunately the surveillance in high-risk areas was down graded through expenditure cuts backs when "user pays" came in. We look across the Tasman with envy at their surveillance system where high-risk areas are surveyed every six weeks. We know that this is expensive but would like to see some effort put into practical surveillance measures to protect our industry.

We would like to see the Government take into account the cost benefit analysis of early detection and increase the funding to this sector.

The Association would in principle support the draft strategy - but it would depend on who will bear the cost of its implementation. Our members believe it should be at the Governments cost primarily, with some contribution by stakeholders.

Concentration must be on Pre-border and Border Inspections by the targeting of pathways. Our members would like to see all high-risk containers inspected not the 23% currently inspected. We appreciate that research is presently being conducted in this area but wish to emphasise that hitchhikers on or in containers are our greatest threat. We would agree that more work is needed on the potential pathways for pests and diseases entering the country and that through that knowledge there may be better ways to block and detect the unwanted pests.

Formal Pest Management Strategies under the Biosecurity can be used as a vehicle to control pests but unfortunately the process is very expensive and long winded so we cannot see this path being taken by small organisations. Government must ask itself, why are there only two in existence.

The Association is not happy with the two 'lead agencies'

being MAF, and Mfish. MAF has a strong emphasis on trade facilitation that is in conflict with biosecurity - protecting NZ. Perhaps a greater separation is required within these agencies.

Incursion funding is very important. The Government needs to set aside a budget that allows MAF to investigate, do a delimiting survey and perhaps proceed with small incursion without the need to go back to the Minister for funding.

We would agree with the research priorities listed in the bullet points, however, we would put them in a different order:

- Better tools...
- Improved Surveillance...
- Improved ability..
- Improved methodologies...
- Social science..

Better tools: We are not sure that Government is aware that the whole biosecurity intervention system relies on 1930/1940 technology in the form of methyl bromide gas. This is a greenhouse gas and is being phased out of general use. Research is required into the provision of back up products.

Better response capability is needed including access to new improved control and eradication tools.

The "public good" side of each beneficiary groups should be considered when looking at this type of charge. We as an Industry only obtain a financial return from 2% of the overall good that bees provide to the country in the form of pollination to horticulture and agriculture. That is why our small industry is so important to the health and wellbeing of our country and why there is a concentration of preventing bee diseases and organisms entering our country. Hence the Association's members would consider that it would primarily be a government responsibility, but that there may be areas where Industry's could assist.

The Association would urge that in using a risk-management based approach, there must always be precaution used where there is insufficient knowledge, so as to protect New Zealand.

The National Beekeepers Association would like to thank Ceracell Beekeeping Supplies for sponsoring the February Edition of the New Zealand Beekeeper's distribution costs.

**Bob Blair
Executive Publications**

Plastic Combs: Second Season

By G. de la M. NICHOLS,

Senior Scientific Officer, Ruakura Animal Research Station

From the Archives - Publication Committee

As the honeyflow intensifies beekeepers rumage around to locate boxes and frames to use as supers. One alternative is the "plastic frame" and the decision to coat with wax or not.

In the previous article printed in the N.Z. Beekeeper of November, 1962, it was shown that during the 1961-62 season six plastic combs were distributed among various hives. Of these combs, five were eventually drawn out into distorted shapes with prolific drone comb and with large areas left blank, whilst the sixth comb was perfect with worker cells filled with honey.

Inspection of the five poor combs revealed that the blank areas of plastic foundation had no wax coating. It was therefore decided to strip the combs of all wax and to try various methods of coating the plastic foundation.

1962-63 SEASON

Experiments in Wax Coating

The old wax was removed from the five Door combs with boiling water. For coating the first comb the wax was dissolved with chloroform. A little chloroform was applied to the plastic frame with no apparent ill effect, but when the wax solution had been in contact with the plastic foundation for some time it was noticed that everything was softening. Eventually the hexagonally embossed surface became a spongy mess.

Two combs were placed in a domestic electric range, small pieces of wax were placed on the plastic foundation and the grill heater switched on. The wax started to melt slowly and was brushed evenly over the surface with a lin. paint brush. Suddenly the combs sprang into a badly distorted shape with the sides at an angle to each other and to the top bar, and the bottom bar buckled badly. Attempts at annealing and straightening failed.

One comb was placed in a solar wax extractor with small pieces of wax on the plastic foundation. Again the frame buckled and could not be straightened. This left one comb. Heat had ruined three of the previous four combs so it was decided to leave the combs cold and to melt the wax in a tin which was heated with hot water. A 1 in. paint brush was left in the molten wax to acquire the same temperature, and wax was then brushed rapidly over the surface of the plastic foundation. This method proved very satisfactory, but a 6in brush would have completed the work much faster.

Four more combs were begged from Plastic Products in Hamilton, and these were coated in the same way.

Experiments in the Hive

The one perfect comb from last season was placed in a hive on November 10, 1962 and removed full of honey on February 4, 1963.

The first comb to be coated successfully was placed in a hive on January 3, 1963, and was pulled out with worker comb, filled with honey and capped by January 12. The other four combs from Plastic Products were placed in hives rather later and were pulled out more slowly.

Two plastic frames were placed in one hive on January 19. By January 26 one comb had been started all over on both sides and had some sealed honey. The other comb had been partly drawn out. On February 2 one comb had been completed, filled with honey and capped. The other comb was almost completely ignored, so it was taken from this hive to a more active neighbour where it was full of honey and capped by February 20. One plastic frame placed in another hive on January 19, was almost full of honey on February 2, and was extracted on February 20. The remaining frame was placed in a hive on January 19, had just been started on February 2, and was not filled until March 27.

All six plastic frames were extracted at a speed which smashed combs with normal wax and wire foundation, whilst the plastic frames were unharmed. No drone comb was drawn out, though this is not unusual with new foundation placed well away from the brood chamber. Next year all six frames will be used as brood combs to see whether any drone comb is produced.

Conclusions

The great strength of these combs is a real advantage during extraction. No combs were broken during high speed running. They may also be of use in the brood chamber, as the bees may possibly find it difficult to build drone comb from wax covering worker-sized plastic hexagons. (This has yet to be shown experimentally).

The plastic foundation must be properly coated with wax. The first season's experiments were nearly a complete failure due to over economy with wax.

If the plastic combs can be produced at a price which competes with the present wooden frame, wax and wire foundation they should prove a real boon to all beekeepers. Incidentally they will spoil one of the pleasantest of winter beekeeping operations, i.e. wiring wax into frames.

NZ BEEKEEPER AUGUST 1963

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