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Notes from the Executive

I don't suppose there are many beekeepers who haven't made the acquaintance of this 'El Nino' character during these past three or four months. Floods, gales and in some areas severe droughts seem to be the principle manifestations, none of which makes for easy or productive beekeeping.

The weeks of hot dry north west gales and no appreciable precipitation since September have contributed to the present drought conditions in our part of Canterbury. Some say, and I guess they should know, that this is the worst drought in 50 years.

Be that as it may I don't much care if it is 50 or 500 years, just looking over hives divest of foraging bees, all blown over to South America, and empty supers is enough to convince me that I never want to encounter El Nino again.

Never mind it will be something to talk about at the next Branch meeting if nothing else.

While on the subject of Branch meetings, I like most other members grow increasingly concerned at the evident decline in attendance at these meetings and an apparent diffidence of people to participate in what are the very foundations of our present industry setup.

Recently many members to whom I have spoken, have echoed these concerns and in doing so have proffered a raft of reasons why this is occurring.

It has been put to me that one of the contributing factors is the increasing demands on individuals time as a consequence of domestic and family considerations, the demands of maintaining a viable business, community involvements, sports etc. Similarly the cost of travel is a concern also.

These are real and legitimate reasons which certainly carve large chunks out of one's discretionary time and resources. Even so the question one asks is, has it ever been greatly different in fact. Haven't we always had to balance these concerns against our resources and at the same time determine just what our priorities are. When one looks about at the empty seats at a meeting one cannot be blamed for concluding that the NBA/Industry is not a very high priority to the majority of beekeepers these days. If this is the case then I suggest we've all got ourselves a bit of a problem here.

We should reflect on the fact what we get out of any organisation, or event is in direct proportion to what we put into it. It follows, does it not? That if we put nothing into the industry by way of the Branches we ought not be upset if we get nothing in return.

Another school of opinion has it that there is too much politics in Industry/ Branch affairs these days and many members fear they are fluttering away their time to no good effect.

There may be some truth in this indeed, but at the end of the day I suggest there has always been a considerable element of politics in Branch affairs and that the political process is inherent in the present industry structure by design. It is this self same political structure by which the membership accesses the industry that has secured it for over six decades.

Given this can the Branches avoid a substantial political involvement.

On the other hand may be it is not politics per se that the membership is objecting to, it may be the 'nature' of the politics that is the big turn off.

It has been said that all too frequently of recent times, the real industry issues are being subverted and circumvented by vested interests. Concerns about who is doing what, to whom and for why, garnished with inanities of the does Mr X beat his wife type statements.

My guess is that there is and always will be a measure of so called 'vested interests' in community and industrial politics. This in itself is no great problem or threat until such time as those with vested interests construct a 'halo' around themselves in order to promote their own personal values. When that happens reasoned, constructive political expression is thrown over in favour of influence through emotion rather than intelligence.

In which ever way we participate in our industry affairs now and in the future the paramount consideration must be for the good of the NBA and all it's members. Well might we remember this from now on.

Perhaps however it is neither a question of time nor that of politics which is behind this issue of low meeting attendance. There is the supposition that a low membership turn out at community, sports, political and service organisations is a symptom of apathy.

Against this is the notion, supported by a many noted political commentators; that a low turn out at meetings is most likely to mean that a majority of the membership are in fact quite satisfied in their present circumstances and comfortable in the knowledge that there are others who are able and prepared to look after their individual and collective affairs for them.

If this is in fact the case then clearly the NBA generally and the Branches particularly, are not seen as dissimilar to any other community of interest and its primary role is that of being a support mechanism.

Something upon which we can fall back to in times of adversity or when Chinese pollen is imported or the EU imposes further stringent entry conditions on honey etc, etc, etc.

It's a bit of the when everything in the garden is rosy the need for support systems evaporates and support, participation and attendances at meetings fall away accordingly.

I wonder if this is not, in fact true of the beekeeping industry at this time. If so, it beggars the question of what happens if El Nino hangs around for another year, history suggests this happens and the second year is the worst, or some other infinitely worse event strikes, we might well find ourselves in dire need of a mutual support mechanism such as the NBA and its structures.

Where then would we be then if on knocking at the door we find the room empty of all but a big notice which says "This branch is defunct due to lack of support."

It may be appropriate now, with El Nino presently trying to tear the roof off the house, that we question our attitude toward the industry and review our input to it. Recognising as we do that best way to secure it is through the active participation of the whole membership. And this is something we can all contribute to more effectively through the regional branch structure.

Don Bell

Front cover...
Loading the hives onto the ferry for Rangitoto.
Photo courtesy Peter Berry.

The New Zealand **BeeKeeper**

THIS ISSUE

Letters to the Editor

Dear Sir

What is the problem with this Nick Wallingford, NBA member chap?

Can't he ever find something good to say about the NBA? It is sad to see you continuing to print such negative criticism from this person. I don't like the NBA either as they force me to pay a levy on my 12 Hives (soon to be 10).

I understand he was the president for about two or three years and presented the deficit budget for 1997. He had his chance to shape the NBA for the future and he obviously hasn't been successful or else he wouldn't be writing to you all the time.

It is disappointing to see his home page being used by other members to castigate the NBA as well. I have recently read a three page grizzle from some person called McCaw, who went on about the 1977 Minutes being 105 days late! Mr McCaw 1977 — 1997 is not 105 days but 20 years. Why complain now? I understand that the Executive meet in Christchurch in December. Did this member avail himself to raise his concerns first hand? (I don't know, as I wasn't there), or does he have to hide behind an electronic page to voice his concerns? Why doesn't he ring the Executive up if he has such strong views and beliefs and talk to them first hand instead of hiding behind this medium. To all of you out there who have concerns, be professional and ring the Executive members up, I do and they are quite receptive people.

B. Peterson, Nelson

I think Allen was referring to the September 1997 Minutes. Ed.

Dear Sir

The myth of leadership in the New Zealand Beekeeping Industry

I wonder what it is about science in New Zealand that prefers ignorance to knowledge and the beekeeping industry is a perfect example.

Health, wealth and happiness are basic dreams but patriotism is the last refuge of the scoundrel and leadership and innovation are nonexistent in the modern New Zealand Beekeeping Industry.

It is the duty of leadership to lead, and examine new facts but first to have an open mind and seek the truth.

Experience shows that it is not remarkable that no beekeeper let alone leader has contacted me since my letter/article published in the December 1997 NZ BeeKeeper, (and announcement page 11, June 1997 NZ BeeKeeper).

The NZ Honey Research Unit is a classic example of money wasted in trying to re-invent the wheel. It seems to be intent on ignoring all overseas research by claiming that New Zealand honey products are unique, but its real purpose seems to be hype to keep some New Zealand scientists in paid employment whilst ignoring publicly all overseas discoveries. It is time that the rank and file of the New Zealand Beekeeping Industry demanded accountability. But they will not for several reasons (1) Mainly due to ignorance, (2) Is that the bulk of New Zealand beekeepers are amateurs in the sense that their main income is not connected with beekeeping so their interest is centred on only whatever drew them to beekeeping in the first place plus in many cases very useful pocket money. The few full-time beekeepers are only now moving into the 20th Century, but not the 21st, by listening to marketing experts on primarily niche marketing and re-packaging for so-called mono-floral based honeys but in truth are guilty of double standards and deception of the public as well as themselves. Every beekeeper knows that there is no such thing as a 100% pure mono-floral honey, for honey is a blend of many flower species and the main source depends on locality, season and time of day. What is needed is a cheap, low cost test (under $1) to determine pollen specific content. It is not good enough to set an industry standard of near enough is good enough and then claim/imply to the public that a product is pure. Try selling gold bars as pure, that were 70% gold and 30% lead! Shoddy, double standards are the fault of the New Zealand Bee Industry scientists with a post office mentality of membership who have seldom read one book on beekeeping, let alone one on its modern potential.

Any research should start with the Holy Bible. Wonder on its 68 references to honey as a food and medicine — but also wonder on why it does not refer to manuka honey or kanuka or rata or tawari or etc, etc, etc. So is the Bible full of rubbish or is it that we are too dumb to realise the truth that it is honey which is unique — not New Zealand honey.

Wonder also why the Koran has a whole chapter "The Bee" devoted to its mysteries and yet the Prophet Mohammed is said to have instructed the faithful to eat honey every day because it will do you good and is God sent.

Hindu Ayurvedic medicine uses honey in many ways such as covering small pox

Obituary

Walter Watts passed away peacefully, surrounded by his family on Tuesday, 23rd December 1997.

Walter was a beekeeper in Hawke's Bay for many years and some of the older beekeepers around the country will probably remember him.

He emigrated from England with his family to Napier in 1964. He had previously owned his own nursery and glasshouses growing chrysanthemum's, he had also worked as a representative for an electricity company (Tricity) and for the Milk Marketing Board (in England). His daughter Sarah remembers going to the various Agricultural Shows with him. Of course, he had bees during this time and it wasn't long before he started with them here as well.

He worked as a builders labourer and then with Holts. After about five years he decided to take on bees commercially, and built a honey house in Onekawa. Interestingly enough the place where I now live was where Walter kept some of his hives.

Following the early loss of his first wife, Walter met and married Essie and spent time working with her at the Ahuriri Drapery.

As Walter's daughters came of marrying age, Walter would take any likely suitors out beekeeping with him!

He figured it was a good test in that if they could cope well with bees they'd be suitable husbands, apparently not all of them made the grade! If I remember correctly Walter sold his bee business to Paul Marshall.

Walter was an active and keen participant of the Hawke's Bay Branch.

His enthusiasm and humour will be greatly missed, a very approachable man who always welcomed new faces.

I guess, not surprisingly Walter never really gave up beekeeping.

After selling all his hives, on several occasions, he would end up with another couple of boxes, a floor and lid and... well you know the rest of the story.

Colin McLean

victims to prevent scarring; old honey for diarrhoea or fresh (uncapped) for constipation — works like green apples. Lay people talk of apple cider vinegar and honey for arthritis yet have not read the books that made this old American pre-penicillin Vermont recipe famous, in order to understand why (still in print read "Arthritis and Folk Medicine" by DC Jarvis MD in Pan).

Even the Greeks who gave us Hypocrites used honey for cataracts and especially glaucoma.

The next source of research should borrow the Apimondia Publications from the NZ Beekeepers library and again read the apitherapy sections. The only reference I ever found to New Zealand Beekeeping Science was in a section on 3rd World emerging countries because New Zealand Apicultural research is at the tail end of everywhere else and is basically a rehash of what everyone else has found out and is a reflection of New Zealand medical research which is one-eyed and drug company oriented.

Lord Platt, a past-president of the Royal College of Physicians stated "that research should support people with ideas but money without ideas only leads to going over the same ground with a few new tools. Research without (fresh) ideas are sterile. Ideas without money aborted (lost).

The NZ Medical Journal, 23 April 1986 (12 years ago) had the article "Bee Venom and Arthritis: Magic, Myth or Medicine?" by the physician doctor Stan Somerfield who worked with Chas Mraz of Vermont, USA, the acknowledged master of Western Apitherapy who also taught me and I was present when East met West in Nanjing, PR China over four years ago as the only New Zealander or Australian present at this historic meeting when MR Mraz met Professor Zhu the acknowledged master of Eastern apitherapy who later invited me to Japan, October 1997 and placed me on the Supreme Committee of the IAHBA.

The fact that New Zealand scientists and doctors have ignored Chinese and Japanese research unless spoon-fed by the Internet or highly subsidised travel is but a reflection of the New Zealand Beekeeping Industry who budgeted over $100,000 for marketing and research this past year primarily to rediscover what is ancient history and is on file, but does not source Asian research.

Readers who wish to access the American Apitherapy Society Internet website can do so at http://w.w.w.beesting.com

Andrew Matheson's otherwise excellent book omits apitherapy and this sitespace on the basis of no space (or is it no interest). The above website is good but at least 50 years behind the Japan conference that I attended at my own expense and which the NZ Honey Trust refused financial help to attend.

The top Americans, Chinese and Japanese are all friends or acquaintances of mine, but New Zealand Beekeeping leaders prefer to ignore the hands of friendship offered and re-invent the wheel despite the best doctors and professors in Asia saying "Chemical medicine has failed and apitherapy is the third medicine for the 21st Century."

Ask your leaders for answers or do your own research — because they don't seem capable of learning.

Graeham Gaisford,
Apitherapist/Researcher, Levin

Dear Sir

In the December issue there was an article on propolis — Collecting and Processing by John Lannuzzi. He talks about a Bell Board for collecting propolis. Could you or a reader describe how to make one, preferably with a diagram?

Having used the plastic sheets I can agree with him that they don't work very well.

Thank you

D.C. Kennedy

Dear Sir

I am a Bulgarian beekeeper with over 40 years experience. I would like to bring this expertise to your country and learn about your methods.

All replies to:
Vasil Nikolov
52A Mara Gidik str
Sevlievo, Bulggaria 5400

Marketing

Do you want the good news first, or the bad news... about the honey crop?
In this month's *BeeKeeper* is a copy of the media release put out in January regarding the 97/98-honey crop. It can be summed up by saying that a few beekeepers seem to be having a very good year... but a whole lot more are having a terrible one: and between the two groups the best estimate, at this stage, is that the honey crop is going to be down significantly.

Bush and tree honeys seem okay... but the situation for pastoral honeys is close to disastrous! Expect to see a gentle (or even dramatic) darkening of the honeys marketed as basic creamed table honeys; and they'll have more flavour too!

As at time of writing, 2 February, the lower South Island was picking up slightly, and there may be a rush of nectar if there's a wet February... but it's unlikely to compensate for the overall national decline in volume; especially in the areas of the Big Dry (from North Otago to Marlborough)!

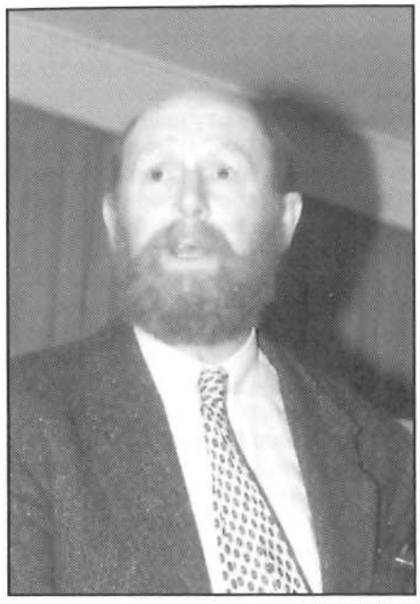
I hear that beekeepers are being offered long-term supply contracts; a sign that not only is the harvest down this year: but there's little around in the way of stocks!

Pollen and propolis and royal jelly and the Ministry of Health
Also in this month's *BeeKeeper* is a copy of the submission put to the Ministry of Health by your Executive on the issue of Food Labelling.

I was involved in researching the issue for the Executive, and preparing the Paper for them. As a result I got a very good understanding of the issue from the perspective of the Ministry and industry.

Some people in the industry have extremely strong (and sincere) views on the matter: but our perspective was that, at the end of the day, the wellbeing of the consumer and the hive industry at large meant that we would have been wrong to object to mandatory warnings: but we wanted the protocols regarding placement and type size etc to be reasonable.

One matter that came out of the research is a very important one for hive marketers: and that's an understanding of how allergies work. The people from the Ministry of Health raised this issue at one of the public meetings: the commonly held theory that taking small doses of a substance to which you are allergic, on the basis that you will develop immunity to the allergic response, is not correct!



Bill Floyd

In fact, what can happen is that the body gets its defence mechanisms into gear to combat the attack of the allergen... and you can even feel 'good' because of the adrenalin rush that happens as part of that defence mechanism... but the body eventually tires of this... and one day the defences don't work... and the person can have a severe reaction: it's as if there's been a build-up of the reaction values! AND SO... the message here is: be very careful about what you promise to your customers! And be sure you know what you're talking about when it comes to selling products with an implied health value!

I don't want to buy a fight with any group in the industry: I believe that there are real, powerful, nutraceutical values in hive products that our research is and will uncover and confirm! But that belief has to be tempered with knowing that what any of us say is true : and that we must not offer our products in such a way as to jeopardise the health of our customers ...or affect the high reputation for integrity that we have as an industry.

If you have any doubts, talk to your local Health Protection Officer about what can and can't be said or claimed on your products: don't put your family business (and assets) at risk!

And while on the subject of the real and proven health values in hive products.....

Peter Molan to take manuka message to Apimondia in 99
Our favourite, and one of the world's top international honey research scientists, Peter Molan, has been asked to deliver the Keynote Address at Apimondia 1999, in Vancouver, on the topic "Manuka Honey and Apitherapy" for the plenary session: "The Scientific Basis of Apitherapy".

This is a superb honour for Peter; and a fantastic promotional opportunity for New Zealand honeys! The organisers are planning this to be the most significant beekeeping meeting ever held: and will promoting the topics over the two years leading up to it. That will give publicity to Manuka honey worldwide: credible and authoritative publicity that money simply couldn't buy.

Well done Peter!

Timaru's hive wizard does it again
Robert Davidson created a phenomenally successful product with his Apis Mellifera cream. I've used it myself for a rash on my face: went within three days. That sort of corroboration is very unscientific I know: but it sure made a believer of me.

Part of the success of the product has been the general marketing of it: especially the mystique surrounding the secrecy over the formula. I'd like to think I've worked out what the active ingredient is... and the answers staring at you if I'm right. But good luck to Davidson's with it.

But the reason for this comment: Davidson's latest product, Pollenaze, is superbly marketed. Everything, from the background information about Ambrosia (bee bread) to the packaging and the superbly good looking product itself: is exceptionally well done!

(Will need compulsory warning under the new Health Pollen regulations but that won't detract from the product at all.)

By the way: if anyone's annoyed because they have a good product that I haven't mentioned: don't get your hives in a buzz: send me some information about it. I can't tell people about what I don't come across in the shops or get sent to me.

Pollenaze was in one of the local pharmacies.

The butter-free moist and delectable Comb Honey Muffin is here!
Also included in this month's *BeeKeeper* is the full copy of the Report on Comb Honey In Baking commissioned by the NZ Comb Honey Association.

This work was done as a result of a submission I put to the Comb Assoc at Conference last year: they paid for the research work to be done by our industry chef, Dennis Taylor, and are paying towards the cost of promoting the findings.

The article makes excellent reading: and you can look forward to some very positive publicity about it.

Comb honey marketers should also be thinking about developing 'kits' of comb seconds that can be sold at retail for people to make their own muffins: and some major comb processors should be talking with bakeries and the like about commercial product development.

I've had the local boutique bakery in Marlborough making Blueberry comb honey muffins. They are utterly delicious! And selling well! No exaggeration!

In Dennis's article he asks for feedback on beekeepers trialling the recipes. If you have some information please send them to me and I'll discuss them with Dennis. (Phone, fax and email details on the inside front page of the Beekeeper; under the NZ Honey Food & Ingredient Advisory Service.)

Conference 98

The Honey Tasting Competition that was launched last year will become an annual event: and I'm in the process of developing the competition format for this years Conference. Canterbury won it last year and I have heard gossip that they're thinking of training by getting samples of North Island honeys to taste and develop profiles for. The rest of you have been warned. (Although it might just be gossip of course.) Keith, can I suggest you taste all those superb honeys of your own... you wouldn't want to not recognise your own honey two years in a row; well, your teammates wouldn't want you too!

Does sound like the North will be putting on an excellent Conference: looking forward to it.

Ice-cream entrepreneur goes all the way with New Zealand honey

Article to supermarkets in Retail Today (Dec 97) profiled the success of Dunedin's Gourmet Ice Cream Company. Along with Dawson Cherry, Calvados and Sultana, and Speights Old Dark icecreams is Lavender and Nodding Thistle Honey Ice Cream. And it is a delight. Delegates at last year's Conference will remember those superb icecreams created by Honey Chef Dennis Taylor: here's the concept in the marketplace... and successful. Speaking of Dennis...

Honey chef goes ice over fern in Japan

Our NZ Honey chef-consultant Dennis Taylor was selected to represent New Zealand at the 98 Winter Olympics. Dennis is Captain of the New Zealand ice-carving team: their theme is a sliver fern. Unfortunately he couldn't fit a bee into the design; even though I tried to tell him that the honeybee pollinates the fern and therefore without the honey bee there'd bee no silver fern... and therefore no All Blacks! And for reasons that I can't understand, he didn't believe me.

Can your company assist (and benefit from) the Honey Research Unit

I've listed some key HRU research project opportunities in this issue of the Beekeeper. If you believe your company could benefit from the research project, and create a good learning environment for one of Peter Molan's students: please contact me.

Note that in the event of more than one company offering to collaborate in the project a decision will have to be made based on what's best for the student; and the project concept overall.

All offers or inquiries will be treated in the strictest confidence!

And that's all for this month... a very busy year ahead: great products! Receptive customers, Equals huge opportunities for NBA members. And remember... when there's not a lot of crop about you need to look at how to get the maximum value from every kilo your faithful little furry fellows produce. (Actually, they're not 'fellows' are they... does 'fellows' encompass the feminine gender?... no doubt someone will tell me.)

Except... my favourite honey: two this time... one for December and one for January. December's came from Bill Bennett (that's a good web site Bill) and it was a sample of Kanuka. (Otherwise known as 'white manuka': as opposed to traditional manuka honey, which is known also as 'red manuka'.) Lot of people tell me the two are very easy to confuse when packing honeys. I was talking to Bill about this and he said he'd send me some honey that had to be Kanuka... because there was nothing else flowering at the time... and no manuka around!

And its delicious: has a citrussy overtone and in the background, a hint of nectarines (well, that's the best way I can describe it: you try better and write and tell me! Sandee found it had hints of vanilla in the after-taste). Was there any blackberry growing in the area: seemed to remind me vaguely of some Nelson Blackberry I once had. A very very nice honey: and in no way similar to the woody-mineral-medicinal-bittery manuka flavour that we all know (and love). Thanks Bill... I appreciated the sample and good information... wouldn't object to a pail of it falling of the back of a truck going past Blenheim.

And the other honey... from Christchurch's art and craft market: I chanced across Rae Blair at the market. Like a lot of NZ beekeepers Rae has gone from hobbyist to small producer: and is now expanding quite considerably. I tried Rae's Dandelion honey. And once again was amazed at the incredible differences between NZ's honey varieties. This is a most intense honey! The intense floral nose leaps out of the jar at you... the colour is a wonderful lustrous orange gold... and the flavour, again, intense: buttery, floral, and yet with hints of melons and apricots in the after-taste. Superb stuff!

And lastly (and sorry I didn't have time to buy a jar and taste it) very impressed with DE Kennedy's Manuka honey packaging. Saw it in Akaroa... along with a photocopy of the full Certificate of Pollen Analysis Certificate from Chalmers Laboratory. The Certificate, hung on the stand with the honey, explained the 80% manuka pollen content and the integrity of the floral definition. Nice to see the voluntary Standards evolving in the marketplace: it will give consumers a reference point and allow companies to differentiate with price.

That's all for now... bee good with your business (I'll try and think of something better to end with next month):

PMS Update

Steady progress is being made toward the implementation of the pest management strategy for the elimination of American Foulbrood Discussions on the draft of the final strategy will be held in Wellington on February 17th to iron the last bits of alterations so that the strategy can then be handed to parliamentary counsel to be written as a legal document.

A PMS Review Committee conference call was held on January 28th and a full discussion on all matters took place. Tenders for most components will need to be advertised by April 1st, 1998. Most of the educational components are in hand and will be complete on time. A disease identification video is also planned.

After over two years of trying to get Government's plans on the MAF Apiary Register, a discussion on this and several other industry matters will be held in Wellington between industry leaders and MAF officials on February 17th. Hopefully, finality can be reached on most of the subjects at that meeting.

The operational plan has still to be done but this is not expected to be difficult owing to a very good set of rules in the strategy. MAF have been asked for guidelines to assist.

A start up date has been fixed for 1st July, 1998 and a launch ceremony will be held at 1998 conference at Waitangi.

Terry Gavin

Tales from the past

Reading Syd Line's obituary recently I though of other things that could have been added.

For instance, Syd was very artistic. He used to take marvellous photos. Two still are fixed in my mind.

One entitled 'Land of the Giants' was obviously taken by Syd lying on his stomach as the photo showed pumpkins towering above and stretching into the distance. Another one which I think he called 'Siesta' was of a Maori carved figure lying on it's back in the grass.

Another long lasting memorial to Syd related to the Department of Agriculture building in Hastings. When Syd was transferred to Hastings, there was a lawn in front with a flagpole.

Syd without asking anyone, planted a weeping willow to set off the flagpole. No doubt those in the Department of Agriculture thought the Ministry of Works had done it or vice versa. No one suspected Syd, so it remains till this day. Perhaps the NBA could ask for a preservation order on it?

Thinking about Syd Line I also reminisced about other Apiary Instructors of the past who in many ways were a breed apart.

Their close personal involvement with beekeepers in their districts was possible because of smaller districts than now and perhaps more systematic sharing of information throughout the industry.

Being very individualistic, many things done might bring a laugh. The Apiary Service progressed from the days of Billy Bray (and ???) who used to use a bicycle and train to get around an island each trying to keep AFB under control. As having a hive was widespread throughout the farming community no doubt they were extremely busy and had to be very energetic.

Progressing on from that stage districts were created with 20,000 to 30,000 hives under the care of each instructor.

Some instructors were very systematic and others less so. Some had ideas that would hardly be accepted nowadays.

For instance one instructor divided his district into 5 and only inspected one area each year. Disease got well out of control by the time he completed his circuit. Plenty of work for him but it did upset the beekeeping community as many were being put out of business.

A concerted systematic approach was needed by the next instructor to get things right again.

Another instructor was keen on colour therapy and was convinced he could detect AFB in gear using his pendulum, coloured cotton etc. I doubt if his diagnosis would be readily accepted nowadays.

Experimental work was a big feature of Apiary Instructor activities those days. Remember when a gadget called the apidictor was proposed for swarm control. A bit like wearing a concrete mixer on your head with the amplified sounds from the hive being forced into the ears. Hours after removing the head phones, the sound lingered on.

A lot of experimental work related to insecticides on brassica crops. Laurie Griffin (Griff) had to count bees in a big chou moellier crop near Ashburton one time. After a considerable time he had failed to return to the edge with his tally. Eventually he was found walking around in circles in the centre. With the crop above his head and no trees to line up on he had lost his sense of direction entirely.

Griff's graph was often remarked upon. He worked out that crops in Canterbury followed a seven year cycle as showed by his graph of honey crops. There appeared to be a build up of crops. On the 6th season a good crop was then followed by a bigger crop and then the cycle started again with a very poor crop. Although it appeared to follow a pattern in the district as a whole, as far as individuals within the district went, it did not follow the pattern of his graph.

Remember the days when we used to have Roy Patterson in the North Island and Ivor Forster in the South as Apiculturists testing ideas on honey processing, hive management etc. Nowadays we find ourselves by trial and error, which can be very costly.

In respect to research, there was a research technician who had the job of pushing a mower around some experimental hives. I think he used rather 'Irish' logic in his endeavours. He said pushing the mower made him too hot, so he used to strip down to swimming trunks and sandshoes. Unfortunately the bees were really nasty, so he used to run like crazy past the hives, ending up hotter than if had remained clothed.

National Beekeepers' Association (NBA) of NZ

Pest Management Strategy (PMS)

The above Association is looking for expression of interest from persons who could provide Contractual services for the requirements of the NBA's PMS for American FoulBrood (AFB) as described in the PMS Document.

All inquiries to: PMS Box 3079 Napier.

Notes for beginners and others

Errors have sneaked into these notes during 1997, words and sentences totally different from what was submitted. The latest mistakes were made in the November 1997 issue, page seven centre column, underlined 'only strong qualities etc", the word qualities must of course be colonies. Also in the diagram of the broodnest (3) F6 should be where B2 (honey) is and B2 on the outside.

Sorry folks these mistakes are not my fault. It has been taken up with the editor who is also sorry and all that and will do his best to not let it happen again. After all this sort of thing is very confusing to readers and takes away much of any value these articles may have. So let us hope that there will be no need for corrections in 1998.

Apologies readers and to John. ***Ed.***

Speaking about difficult beekeeping seasons I think that this one must have been the granddaddy of the lot. Just not funny. Many localities in the country have suffered in one way or another. Gales, drought or too much rain and low temperatures here in the South. El Nino certainly did it's best to upset the apple cart. If anything could go wrong it did, no matter how hard the beekeeper tried to cope with these unusual climatic conditions.

Consequently an awful amount of sugar has been fed prior to Christmas but still, I hear, a fair number of colonies did not make it, fell by the wayside through starvation. Those losses are more pronounced among commercial outfits. The small beekeeper is under these circumstances in the easier position as only a limited number of hives are involved and which are usually close to home.

I am now looking after just six hives. Situated at a very well sheltered spot, trees with a lot of shrubs, flax etc, under and amongst them. Could not wish for better. But we got a hurricane force gale in November resulting in two fifteen year old gums going over. One snapped off at ground level, the second one came over with roots and all. And of course they had to land right across the hives. Plenty of room for them to fall a bit different but that is Murphy's Law for you. Anyway not a great deal of damage was done to the hives, one was knocked apart, the rest stayed together. After some preliminary clean up with a chainsaw and plenty of pulling branches away the hives were pulled back a short distance. Since five of the six hives have been functioning normally but number six, the one which was pushed over and came apart, is lagging behind. No wonder really.

From New Year on we have had some fine warm days and now and then the colonies picked up a full super and are now filling a second one and may be a little more. However one hive was united with a top, small nuc wintered over. In other words it has been a two queen colony. It has managed 2½ supers of honey at present (24 January) and will probably finish up with 3½ supers surplus against two supers for the others with single queens. Just goes to show the difference a two queen colony can make.

When this issue arrives in your mail box the 1997/98 honey season will be over. You will probably have removed most of the surplus honey (if any!), or are in the process of doing so. Watch it, don't take too much away. You could sit back now till it is time for wintering down. But this month and the next are good for a spot of autumn re-queening. If done now colonies will go into the winter with young queens which have a much better rate of survival than old ones have. Much less likely that young queens will fail during a time when replacement is impossible. Autumn queens are usually more readily available. Also spring queens often arrive later than what you plan for. The queen breeder is also very dependent on the weather. It's not a bad time too for trying your hand at raising a few cells, given you have a good breeder hive and can cope with the robbing risk which is greater now than in the spring. All in all there is a lot to say for autumn re-queening.

Also consider making some nucs now to be wintered over on top of hives. They are worth their weight in gold. Good for replacements, increase in numbers, patching up or for creating two queen units next season. There are plenty of bees in the hives at this stage and also mature drones. Of course these tops will take some feed, honey and/or sugar, but you will find it to be a good investment. It has been stated that a number of tops representing about 10% of a hive holding is not unrealistic to compensate for winter losses and patching up weak or inferior colonies.

There was an article in the Otago Daily Times of 15/11/97 which caught my eye. "Pest plant improves soil health". It is about Hieracium or hawkweed which is a very invasive weed especially in the high country. Landcare researchers are studying how hieracium invades the high country so that it can be better controlled. In general it is regarded as a real enemy. First of concern in Otago and Canterbury it has also spread to the North Island and regional councils have it on their lists of noxious weeds. However it now appears that soils under hieracium are healthier than those under depleted tussock grassland close by. The plant seems to have the ability to transform mineral nitrogen into organic forms which accumulates into the soil under and round the plant. It is a perennial and returns more carbon to the soil from dying leaves and roots than annuals do. This in turn releases more of the sugars, amino acids and organic acids needed for the growth of microbes. Now those are big plusses for a plant regarded as a major problem.

In "Nectar and Pollen Sources of New Zealand" it is well regarded as a source of both nectar and pollen. The honey being of fine flavour, sparkling and of an extra ordinary bright yellow colour.

Well it looks that some consideration will be given to the beneficial side of hieracium before whole sale eradication is attempted. That's good news for beekeepers.

John Heineman

Extracted from APIS
Apis - Apicultural Information and Issues
Florida Extension Beekeeping Newsletter

Volume 16, Number 1, January, 1998

by Tom Sanford

More on Transgenic plants and beneficial insects

I recently received a letter from Mr. Chris Allen, president and general manager of Hat Honey Farm, Medicine Hat, Alberta, Canada. He said that hybrid transgenic canola pollination now uses 25,000 to 30,000 hives in his region and is expected to grow in the future. He concluded that the technology used to produce these genetically modified plants is amazing, but also troubling because of little-known potential long-term effects on honey-bees as pollinating vectors. Mr. Allen believes some of the problems seen in canola pollinating colonies, which include population decline and queen supersedure, may be the result of genetic modification of the plants. He asked if there are some unresolved issues that beekeepers and others should look at concerning this technology. Transgenic plants are those that have had genetic material inserted into them to provide built-in protection against diseases and pests. I reported on this in transgenic oilseed rape from France in the April 1997 APIS <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apapr97.htm#4>. In the July 1997 APIS, I relayed more developments and resulting concerns about this technology. At that time I concluded, "Premature use of the technology in a worse case scenario would be to develop transgenic plants to which insect pests become resistant that at the same time discourage pollination by beneficial insects." <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apjul97.htm#5> Now I have received news that beneficial insects might in fact be affected by this technology. This comes from an article by Dr. Claire Gilbert, who writes the Blazing Tattles newsletter, titled "Ladybug, quickly fly away home!" <http://www.concentric.net/~blazingt/info/index.htm>. Transgenic potatoes in Scotland, bred to discourage aphid feeding, did not completely eliminate all the aphids. Ladybug beetles were used to clean up the remaining population. Unfortunately, the beetles that ate those aphids, which had been feeding on the transgenic potatoes, were also affected. This information, according to Dr. Gilbert, was reported in A.N.E. Birch, ET. al., "Interactions between plant resistance genes, pest aphid populations and beneficial aphid predators," Scottish Crop ResearchInstitute (SCRI) Annual Report 1996-1997, esp. pp. 70-72. SCRI is located at Invergowrie, Dundee DD2 5DA. Telephone: National (01382) 562731, International +44 1382 562731, Fax: National (01382) 562426, International +44 1382 562426. It is too early to tell where all this will lead. History has shown that in the race to produce superior crop varieties, many resources go into determining the agricultural inputs necessary to get the plant out of the ground. Often, however, one of the most difficult to study, pollination requirements, gets short shrift. Mr. Joe Robinson, a bee inspector in West Florida, contends that there is no

difference between cotton nectar production when comparing genetically altered to normal or control plants. His opinion that most of the discrepancies reported can be traced to underlying soil type appears to provide some reason to be optimistic in this area. Until more information becomes available, however, beekeepers should continue to carefully monitor their bees foraging on or pollinating genetically modified plants.

Dr. Malcolm (Tom) Sanford, Extension Apiculturist, University of Florida

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Thanks to Murray Reid.

Organic honey: What are the possibilities?

The proposed regulations governing the USDA's National Organic Program were published in the December 16, 1997, Federal Register. The proposed rule is 113 pages long. It can be purchased for $8 from the Federal Register (202/690-4632), downloaded in Adobe Acrobat (R) format <http://http://www.ams.usda.gov/nop/rule/complete.pdf > and viewed on the National Organic Program World Wide Web home page <http://www.ams.usda.gov/nop/rule/20513.htm>. The document is composed of the following:

Subpart A - Definitions

Subpart B - Organic Crop and Livestock Production and Handling Requirements

Organic Crop Production Requirements

Organic Livestock Production Requirements

Organic Handling Requirements

The Use of Active Synthetic Substances, Non-synthetic Substances, Non-Agricultural (non-organic)

Substances and Non-organically Produced Ingredients in Organic Farming and Handling Operations, Including the National List of Allowed and Prohibited Substances

The National List of Allowed and Prohibited Substances

Crop Production Substances

Livestock Production Substances

Processed Products Substances

Subpart C - Labels, Labeling, and Market Information

Subpart D - Certification

Subpart E - Accreditation of Certifying Agents

Subpart F - Additional Regulatory Functions

State Programs

Fees

Compliance Review and Other Testing

Appeals

Equivalency of Imported Organic Products

The proposals are causing controversy as might be expected. The provisions appear to be such that it will be impossible to certify honey as "organic" under most circumstances. Comments on the Bee-L Internet discussion list have called the rule everything from unrealistic to downright manipulative, simply a way to tax unsuspecting beekeepers through fees for services not needed. One wag said, "...the thing looks like a real tar baby. Lawyers will have a lot of fun with this one and I doubt anyone will eat any better on account of it." Another point of view is that although the rules may be uncompromising, at least they will apply to all, foreign producers who import honey included. The result would be removal of many products now labeled as "organic" from the market place. In essence this would mean a leveling of the playing field. The issues involved are extremely complex and not easy to quickly summarize; additional information not published in the Federal Register concerning the reason for the proposed rule and some of the expected costs and benefits to producers and consumers can be seen at <http://www.ams.usda.gov/nop/rule/ria.htm>.

Consumer Reports magazine has recently published an online report concerning organic produce. The results show that some has pesticide residue, but much less than that found in conventionally grown non-organic fruits and vegetables. The report states it is almost impossible for consumers to tell the difference between these two types of produce based on quality, taste or nutritional differences <http://www.consumerreports.org/Special/News/Reports/9712n001.htm>. For other information on organic honey, read about miel biologique in Europe (May 1997) <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmay97.htm#3>, and the organic certification program in Florida (May 1991 and February 1996) <http://www.ifas.ufl.edu/~mts/apishtm/apis91/apmay91.htm#6>; <http://www.ifas.ufl.edu/~mts/apishtm/apis96/apfeb96.htm#1>.

One intriguing subject in the proposed rule deals with wild crop harvesting.

A case might be made that some honey produced from feral plants might fall under the following provisions:

205.11 Wild crop harvesting.

(a) Any land from which a wild crop intended to be sold, labeled or represented as organic is harvested shall have had no prohibited substance, as delineated in the categories of substances prohibited for use in organic farming and handling set forth in 205.21, applied to it for a period of three years immediately preceding the harvest of the wild crop and at any time thereafter.

(b) A wild crop shall be harvested in a manner that assures that such harvesting or gathering will not be destructive to the environment and will sustain the growth and production of the wild crop.

Comments on the proposed rule must be received by March 16, 1998. They should be mailed to Eileen S. Stommes, Deputy Administrator, Agricultural Marketing Service, USDA, Room 4007-S, Ag Stop 0275, P.O. Box 96456, Washington DC 20090-6456, faxed to 202/690-4632, or submitted online through the National Organic Program Web Page.

Beekeeping Memoirs

The nerve centre

by Ron Mossop

If readers are fed up with my stories they should blame Russell Berry, the NZ Beekeeper's National President. He was the man who first suggested that I should write stories for the *NZ BeeKeeper's* Journal. Having started, I am having difficulty stopping. However, I do not expect any heavyweights will be sent over from Rotorua to deal with me.

Ron Mossop

New Zealand beekeepers seem to have got themselves almost submerged in a sea of documentation. If they have a few woodworking machines there is the Occupational Safety and Health Department to deal with. If they employ staff there seems to be no end to the documentation involved. If he owns some land with a honey-house on it he is subjected to all sorts of regulations as to what he may, or may not, do with his own land. If he has a truck or two there is a registration certificate of fitness for each vehicle and mileage tax for diesel. The Goods and Services Tax and ACC levy must be paid on time. The Income Tax Department must not be forgotten as they will have the shirt off your back as well as their pound of flesh.

There is little wonder, then, that a beekeeper's office has become the nerve centre complete with fax machine, computer, duplicator and phone answering machine etc, etc. If the 'mouse' in one of these machines breaks down it will cost the beekeeper many dollars to put it right. As I am computer illiterate the only mouse I know anything about is the sort that our cat brought into the house and let go under the fridge. I fixed that mouse and it didn't cost me a cent.

I expect much of this documentation is necessary, for example, hive inspection returns for American Foulbrood would qualify, unless you are one of those beekeepers who likes to sit in his truck in the evening and watch his hives burn. After a very hard days' work in the fields it must be extremely frustrating for a beekeeper to come home to heaps of documentation. It is little wonder, therefore that the beekeeper's wife gets to do much of the office work, that is after she has cooked the breakfast, got the children off to school, done the housework, washing, shopping, answered the phone and all those other little jobs like mowing the lawn. She is then ready to do battle with all the paper work. Readers could no doubt add to the formidable list of documentation they could gladly do without.

Some beekeepers I know are planting pine and gum trees to help the paper making industry along. The theory is, that if you can't beat them you should join them. The pinus radiata trees have lots of pollen that blows everywhere, but the bees do not seem to collect pine pollen. A certain percentage of gum timber is added to pinus radiata for making writing paper, but the species of gum trees used for paper making does not seem to have flowers, so the poor beekeeper misses out again.

With an office full of electronic devices, one small glitch in the system can cause pandemonium. I know, because I was once at the centre of one of these glitches. About five years ago, like a lot of older men, I needed a prostate gland operation. By this time I knew about every lamp post in Tauranga. I kept putting the job off, because I had heard bad things about his operation. In the end I had it done in a private hospital. My wife took me to the hospital at about five in the evening. The job was to take about an hour. When she rang the hospital about three and a half hours later to enquire how I was, the matron told her that I was fine and in the recovery room but that the doctor wasn't feeling too good. Apparently his sophisticated high tech and state of the art boring machine or what the urologist called a resectoscope had broken down half way through the operation and the doctor had to race up to the main hospital and borrow a mate's boring machine. When he came around to see me the next morning he was full of apologies and must have been immensely relieved when I made a joke of the whole thing and told him that I believed in Murphy's Law - "If something can go wrong, it will".

I had heard stories that when you first pass water after a prostate gland operation it is similar to passing broken glass. This is not true, it more like trying to pass large fish hooks!!

Feeding sugar syrup to honey-bee colonies to improve pollination:

How much should you feed?

Mark Goodwin, Heather Haine, Hort Research.

Feeding colonies with unscented sugar syrup inside their hives can cause colonies to collect more pollen. Increases in pollen collection have been recorded from sweet cherries, field beans, red clover, kiwifruit, and almonds following syrup feeding. The technique is now used extensively in kiwifruit orchards in New Zealand with more than 60,000 colonies routinely fed either daily or every second day.

Feeding unscented syrup to colonies in hives is thought to convert nectar collectors to pollen gatherers. This is though to help pollination because pollen collectors are better pollinators as they frequently come in contact with a flower's stigma as they scrabble around to collect pollen.

Syrup feeding is hypothesised to create a shortage in the number of workers (house bees) available to accept nectar loads. Nectar foragers usually pass their loads to house bees when they return to their hive. When a colony is fed, the house bees consume the sugar syrup instead of waiting at the hive entrance to accept nectar loads. This lack of house bees available to accept nectar loads is thought to discourage nectar collecting. These nectar collectors are then thought to switch to collecting pollen that they can pack away themselves.

Feeding sugar syrup to colonies can stimulate them to increase the amount of brood they rear which also affects the amount of pollen a colony collects. The increase in pollen collection following syrup feeding does not appear to be directly related to any increase in brood rearing. The increase in pollen collection that occurs during syrup feeding usually stops soon after feeding is discontinued even though brood rearing may increase after this time.

The methods used to feed syrup can affect the amount of pollen collected. The amount of pollen is independent of the concentration of syrup fed (40%-62%) or the type of sugar (white or industrial raw). Feeding dry sugar does not increase pollen collection and the type of feed (Top or Division board) is unimportant. The time of day the syrup is fed is important. Feeding syrup at 0900h and 1300h were equally as effective at increasing kiwifruit pollen collection but feeding at 1700h is less effective.

The size of the response in pollen collection depends on the volume of syrup fed and the frequency. When fed every three days, three litres per feed gave a better response than two litres per feed which was better than one litre per feed (Goodwin & Ten Houten 1991). No significant difference was found between feeding one litre/day and one litre every two days. Even though the total amount fed is the same, feeding one litre/day caused a significantly greater increase in pollen collection than feeding three litres every third day. Feeding volumes larger than an average of one litre per day have not been tested.

Aim:

The aims of this investigation were:

1) to determine whether increasing the volume of sugar syrup fed over one litre/day would further increase the amount of pollen collected and
2) to determine whether colonies could be overfed as it is possible that feeding large volumes of syrup may result in a decrease in pollen gathering if the colonies have nowhere to store the pollen.

Three trials were conducted (in spring, in summer during a honey flow and in autumn) using 155 colonies which were fed between zero and five litres of 50% sugar per day and the amount of pollen collected determined using pollen traps. All the colonies had an empty super added to ensure that space was not limiting. An additional group of colonies was fed five litres per day and was confined to two supers to determine if over-feeding might be a problem.

The amount of pollen collected increased with increasing volumes of syrup fed up to a maximum of three litres per day (Fig 1). The amounts of pollen collected declined where more than three litres was fed per day. Colonies fed five litres per day still collected more pollen than colonies that hadn't been fed.

There was no difference in the amount of pollen collected by colonies fed five litres per day with and without an additional super added, even though some of the colonies with only two supers consumed up to 50 litres of syrup and were severely restricted in the space they had available for brood rearing. The reductions in pollen collection from the peak of three litres may have resulted from the colonies withdrawing part of their foraging force to handle the large volumes of syrup.

In conclusion, increasing the volume of syrup fed, up to a maximum of three litres per day, should increase the amount of pollen collected.

Reference:

Goodwin, RM; Ten Houten, A 1991: Feeding sugar syrup to honey-bee colonies to increase kiwifruit *(Actinidia deliciosa)* pollen collection: effects of frequency quantity and time of day. *Journal of Apicultural Research 30(1)*: 41-48

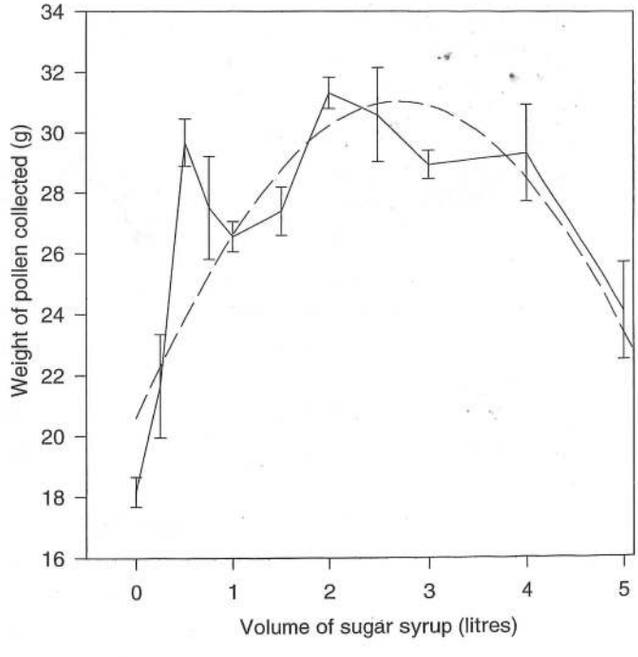


Fig 1.
Average daily weight of pollen trapped when different volumes of syrup were fed (solid line). The vertical lines are standard errors and the doted line a curve fitted to the data.

Media Release - Jan 98

New Zealand honey crop stung by El Nino

Pasture based honeys could be in short supply although some premium tree honeys will have a good season. That's the predicted result of El Nino on the New Zealand honey crop.

Premium New Zealand clover honey from the South Island's rolling pasture lands will be in very short supply, but New Zealand's flagship honey variety, manuka, looks like it will produce a good crop. The industry is also expecting reasonable quantities of its premium Rata, Pohutukawa, and Kamahi honeys.

Severe drought combined with below average temperatures means the South Island honey crop should be down significantly on previous years, says NZ honey industry spokesman, Bill Floyd. The East Coast of the North Island is also expected to produce less honey.

But the vagaries of El Nino means that some regions have done well; and these include Nelson, lower and central North Island and parts of the far North. The quality of the honeys from these regions is also looking very good! Unfortunately, the expected crop volumes from these areas won't compensate for the shortfalls elsewhere.

The very strong development of honey exports over the last few years, combined with a steady increase in New Zealand consumption meant that there was already no significant reserves of honeys in New Zealand. As a result a below-average crop this year is likely to mean a firming of honey prices within New Zealand.

Asian markets have been a key focus of the honey export trade and although the present economic crises in Asian countries have had an impact on some exports, for example, comb honey, the El nino-caused drop in production means there will be no surplus as a result of that trade cut-back.

The New Zealand industry is very fortunate in that its export development over the last three years has been based on premium honeys to niche markets, rather than simple commodity honey trading. The demand from these niche markets is less prone to fluctuations in commodity demand and pricing. Our reputation as a supplier of quality honeys that are drug-residue free is also ensuring our export growth; having a major impact on key markets such as Germany and Japan.

The potential for a good manuka crop augurs well for the industry says Bill Floyd and may help offset the otherwise low crop this year. Current research projects are proving some important benefits in our manuka honeys and as that research is published during 1998 we will see a dramatic increase in the international demand for manuka honey.

The New Zealand honey industry's focus on 'decommoditising ' its honeys, in creating demand for varietal honeys with unique flavours and functionality's, is setting an international precedent that is now being copied by other countries; in particular the USA.

The El Nino effect may slow down on our export growth, says Bill Floyd. This is because, as an industry, we recognise the New Zealand consumer as our prime customer, and will satisfy the local market before meeting export opportunities. But exports of our tree crop honeys like manuka, honeydew and kamahi should continue to grow.

For further information please contact:

Bill Floyd
Floyd Marketing Ltd, Marketing Consultants, NZ Honey Food & Ingredient Advisory Service, Ph (03) 577-6103, Fax (03) 577-8429.

New Zealand Honey Innovation Award Profile: Actimel

Actimel partner, Graham Cammell, explains how his company and it's product was developed.

"After hearing Dr Peter Molan speaking at Beekeepers Field Days extolling the virtues of Active Manuka Honey, we decided to investigate how we could develop products using AMH to the best benefit.

Through Dr Molan we met a pharmaceutical Chemist also interested in Active Manuka Honey - so REG International Ltd was formed.

Our experiments have led to looking at several products both for animals and humans. After many trials in conjunction with Dr Molan and the Waikato Hospital the ultimate has been the production of ACTIMEL Ointment which after long periods of testing has been found successful in treating irritations of the skin, burns, ulcers and bed sores etc.

The name ACTIMEL is a registered Trade Mark and is derived from Acti for Active Manuka Honey and Mel, an abbreviation for MELIA - French for honey.

ACTIMEL Ointment for which we won the award has had a very favourable response in many areas - from Rest Homes for the treatment of elderly people with ulcers and sores to the treatment of athletes foot, tinea and many skin complaints in a wide range of ages.

We also produce Natures Nectar Active Manuka honey SKIN CREAM which contains less strength of Active Manuka Honey is proving to be an excellent supplement of Actimel in that it is an anti-bacterial cream which keeps the skin smooth and clear of infection.

We are now developing and testing Active Manuka Honey dressings for hospital use.

While we are convinced of the value of AMH, it will take years to convince the Medical Fraternity of it's value ahead of drugs."

For further information on these products contact Graham Cammell on (09) 275-6457.

New Zealand Honey Innovation Award Profile: The Honey Collection

Jean Coombe has had a life long interest in the health giving properties of the products of the beehive. As a busy housewife, mother and veterinary assistant she did not have the time to develop her ideas until she retired. As Jean was unhappy with the large amount of unnatural additives used in all sorts of products which seemed to be the modern trend, she wanted to develop a wholesome product devoid of unnatural ingredients.

With the help of her husband John, she started making skincare preparations in her kitchen using honey and beeswax as the key ingredients giving them initially as gifts to friends. The preparations became so popular that the production was increased and a loyal market developed around the Auckland craft fair circuit and some local honey suppliers.

Waitemata Honey in particular offered much encouragement with both contacts within the honey industry and also supplying raw materials. They in fact gave Jean her first opportunity to supply the retail market. The relationship between the two companies is still flourishing.

Three years ago as the demand for her preparations increased, her son Nick and his business partner Robert, saw the advantage of these ideas and formed a company named The Honey Collection and helped develop this fledgling enterprise.

As the company had very limited financial resources, John's experience and expertise in the engineering field became invaluable. As at this time all production processes were hand operations, John helped by designing and building apparatus to speed up production. Because of his interest in woodworking John has also developed a natural beeswax wood polish which is proving popular with those who have natural finish wooden furniture. He is currently working on a natural leather dressing using beeswax as the key ingredient.

Jean Coombe displays her Honey Innovation Award alongside a display of the company's innovative and successful hive products.

A graphic design company was engaged to produce the eye catching packaging used across the range of products and a brand identity has developed as a result.

This is very much a family enterprise, with everyone turning their hand to the tasks that they are best adapted to and all members of the team wear several hats. As a result of much hard work and dedication, The Honey Collection has been recently awarded the Gold Medal for Innovation within the industry by The New Zealand Beekeepers Association at their national conference.

The company is now servicing an ever increasing demand for these natural, honey based skincare preparations within New Zealand and is in the process of developing a promising export market.

Proposed compulsory warning labelling for food products, including dietary supplements, containing royal jelly, bee pollen or propolis

The National Beekeepers' Association of NZ INC, (NBA), makes this Submission. The NBA represents the 5000 plus professional and hobbyist beekeepers of New Zealand.

General Comment on the Ministry of Health's Consultation Process for this matter:

The NBA is concerned that the Ministry may have an underlying attitude towards hive products that has affected the development of this proposed legislation. This attitude was summed up in the Ministry's media release that stated:

> *"The majority of products containing royal jelly, bee pollen or propolis are sold as dietary supplements in New Zealand. However, there is no scientifically demonstrated nutritional or medical benefit from these products."*
>
> *Acting Director General of Health Dr David Lambie, November 19,1977.*

Separate to this submission, the NBA is collating internationally recognised and scientifically sound and published research material to show that this statement in itself is unsound and incorrect; especially as relates to 'nutritional benefit'.

But the issue at the moment is the Proposed Warnings.

The potential for health risk from consuming hive products

The Ministry of Health produced details of allergic reactions to Royal Jelly, Propolis and Pollen in New Zealand and Australia.

We are aware that some industry members dispute the findings (especially whether or not 3 deaths have been caused in Australia from consuming Royal Jelly). But we believe that unless the Coroners findings are proven otherwise we would be wrong to take issue with them; and we can understand the Regulatory Authority in Australia wanting to act on the coroner's advice.

In New Zealand, in the last three years, according to the Ministry's Adverse Reaction monitoring system, there have been three adverse reactions to Royal Jelly (two severe); four to pollen (three severe) and four to Propolis (two severe).

We would like to see this alleged 'threat' to the public health put into perspective: for example, by understanding the incidences of allergic reaction to other foodstuffs and to pharmaceutical products: but we are advised that such statistical data is not kept by the monitoring agency. A situation we are surprised by; and cannot understand.

The NBA is also concerned that the Ministry's own monitoring system makes no attempt to distinguish between hive products from New Zealand and those imported. This issue is an important one because the NZ Honey Research Unit at Waikato Hospital has confirmed that unique indigenous bio-compounds in our native flora create, in turn, unique honeys and propolis. And may also create unique pollens, waxes and Royal Jelly's (these latter are still the subject of research).

The NBA would welcome the opportunity to work with the Ministry in identifying the issues relating to New Zealand as opposed to imported hive products and will make an approach to the Ministry, separate to this Submission, to achieve that collaboration.

The Ministry's monitoring agency, Carm, also appears 'happy' to believe that the fact that reported incidences are statistically so insignificant as to have almost no relevance to the community as a whole, can be answered by suggesting that "most cases aren't reported."

Yet there is no intelligent support for this

claim and a reasonable counter to it, of course, is that the whole incidence of reporting is based on anecdotal methods: what measures are taken to prove that the allergic reaction is indeed from the hive product and not from pharmaceutical treatment the person may be undergoing... or indeed from some other environmental cause altogether.

Changes in food regulations to minimise allergic reactions

Under ANZFA the Australian and New Zealand govt's are at present considering Proposal 161: A Review of Specific Labelling Statements on Packed Food.

This addresses the need for a wide range of food ingredients to be clearly identified on food packaging. These ingredients include royal jelly and pollen. (Propolis is not included because it is not marketed as a food.)

But both Governments are seeking, under Urgency provisions available to them, to immediately change the labelling requirements for royal jelly, propolis and pollen because of the alleged danger to the Public Health.

The existing labelling situation in New Zealand

Many marketers already put Suggested Doses and/or Warning descriptions of some sort or another on their packaging. And the NBA notes that these are not consistent in their advice.

The NBA believes that there should be consistency and integrity in advice given to consumers for hive products!

And regardless of the Ministry's actions on this matter the NBA will be recommending that its members adopt a responsible policy with a consistent 'message' to consumers on all packaging.

So are these urgent regulatory actions warranted

It is both logical and proven that people can have allergic reactions to Royal Jelly, Pollen and Propolis. (Just as with nuts and gluten and fruit and shellfish and caffeine et al!)

Logical because if the identified naturally occurring compounds in those products are credited with being able to positively influence the human metabolism it follows that it is possible, no matter how remote, that in the wrong person or in the wrong dosage such an influence could be neutral or negative, not positive!

Therefore the NBA agrees that 'warnings' or 'advice' are appropriate. (Although we must emphasise that there is no proven evidence that New Zealand sourced hive products have caused the isolated incidences being used by the Ministry of Health as their mandate for this exercise!)

The specific warning messages

Wording:

The NBA agrees with the advisory wording as proposed by the Ministry for both propolis and pollen.

The NBA is concerned about the severity and dramatic nature of the proposed warnings for Royal Jelly. We would ask that common sense prevail and that the Ministry consider strong warnings.... but not in the extreme as proposed.

It must be emphasised that no New Zealander has died, or, to our knowledge, even been in a life-threatening situation because of the ingestion of Royal Jelly produced from New Zealand hives!

Placement:

The New Zealand Ministry of Health proposes that the warnings be immediately next to or under the product name; on the principal display panel of the labelling.

The NBA submits that the labelling protocols for medicines and therapeutic products should be adopted for labelling of these hive products. ***(Excluding honey)*** Also:

the Australian regulations do not require it to be on the Principal Display panel (the marketer can decide where)

it may be better for the consumer for the warning to be adjacent to information about the product (how and when to take it etc) and that won't necessarily be on the Principal

Display panel.
many medicinal products with significant and severe potential reactions are marketed with their warning information not on the Principal Display panel, but elsewhere on the packaging.

Type Size:
The Ministry intends that all-warning information be not less than 3mm in size (1.5mm for smaller packaging).
The NBA submits that the same protocols applying to Consumer Warning information for drugs and medicines be used for the hive products. ***Excluding Honey***.
We can't accept the logic apparently offered by the Ministry of Health, that consumers will be less diligent reading the packaging information on hive products than they are with products marketed at medicines: in fact, we would argue that the purchaser of these hive products would be more vitally interested in all aspects of the products's values because they have made the purchasing decision themselves: it has not been made for them by another party (for example, their professional medical advisers).

Timeframe for Submissions and Introduction
The NBA appreciates the Ministry's extension of the timeframe for submissions.
We assume that it's still the intention of the Ministry to have the Standards gazetted during February, and all pollen, propolis and royal jelly products required to meet the Standard within two months of the gazette date.
After those two months any product will be required to have new labelling that conforms, or, an oversticker placed on the packaging so that the labelling conforms.

NBA Submission re Introduction Timeframe and use of existing label stock
The NBA accepts these timeframes and notes that the use of over-stickers will allow marketers to use up existing packaging stock. Our agreement on this issue is however subject to the placement and type-size issues being changed as we have submitted above; to allow marketers to suit the Consumer Information requirements to their packaging.

Effect of labelling regulations on table honeys
The Ministry has advised that their interpretation of the proposed legislation is that it will not affect table honey. This advice has been to members of the industry at the consultation meetings.
The NBA is **extremely concerned** about the suggestion that the issue is even open to interpretation (and as such it could be contested in a court of law at some stage!).
The NBA submits that
the Regulations must specifically exclude from its provisions any honey products where royal jelly, pollen or propolis occur naturally, in that they are gathered by the bee or are introduced 'naturally' into the honey as part of the nectar collection and storage process of the bee and are part of the product known , consumed and enjoyed as 'honey'; this includes honeys in all forms: including but not limited to 'liquid'; 'creamed'; 'comb'; 'extracted'.
However, the NBA agrees that where any honey product is marketed as containing pollen or propolis or Royal Jelly or where additional volumes of pollen or propolis or Royal Jelly have been added to 'enrich' the product, and it is marketed as such, the Labelling Warnings would be required; **except:** such Labelling Warnings would not apply where the pollen content was being promoted simply as the means of identifying the varietal integrity of the honey concerned.
(This is because Pollen Analysis is an internationally accepted method of honey identification. In fact, the Codex Alimentarius opposes the removal of naturally occurring pollen from honey because that pollen is a key identifier of the product itself being honey and of the honey type. And members of the New Zealand beekeeping industry promote the pollen content of floral varieties as 'proof' of the honeys varietal integrity.)

General comments on the issue of hive products and consumer warning information:
The New Zealand Beekeeping industry is a proud and successful one: it is proud of the quality of its products and it is successful because of that quality.
New Zealand beekeepers enjoy a very strong and positive relationship with the New Zealand community (New Zealanders eat more honey per head of population than any other country in the world!) and the industry wants to continue and grow that relationship.
As an industry we were already addressing the issues raised by you and the development of Standards for individual hive products is part of the NBA's 1998 Industry/Marketing Plan. This Plan was developed and approved in November 97.
The NBA strongly disagrees with the comments and underlying sentiments expressed by the Acting Director General of Health is his Press Statement of Nov 97 and will be responding to that.
We note the irony of the situation where the Ministry is acting on a basis of Urgency in the interest of Public Safety and yet the number of incidences in New Zealand are so light as to be statistically insignificant and apart from Australia and New Zealand no other country in the world sees it as a priority or a public health threat.
In fact, we understand that the Ministry has had some difficulty in deciding on possible actions because there has been no international precedent for the New Zealand action.
We should point out the amount of pollen consumed in New Zealand is approx 30 tonne per annum, over half of this is encapsulated. This equates to approx 30,000,000 x 500 mg capsules annually or approx 82,000 capsules each day
Which means approx 20,500 people are consuming bee pollen each day; and capsules are only half of the market!
Again we have to stress: the facts do not support the extrapolations made by your officers that a public health issue exists.
And from anecdotal evidence there would be appear to be more danger to the public health from other allergen-prone foods and medicines: but no data is kept on these other 'threats'.
We don't accept the argument that people are aware of the danger inherent in these other products: and in the absence of sound information regarding them we find it difficult to understand your adherence to that line.
We need to also emphasis very strongly, that we have seen no proof that we have a problem in New Zealand with New Zealand hive products. We are very concerned that we are being penalised for a situation that just does not exist. (Even the medical records supplied by you are inconclusive.)
If there is an issue with imported hive products then the Ministry should work with Border Control Authorities to address that: the New Zealand industry should not be penalised.
However, notwithstanding our concerns, we, as an industry, will always err on the side of caution and responsible behaviour in all matters where the wellbeing of our customers and consumers are concerned:
hence we support your intention to have mandatory information on pollen, propolis and royal jelly packaging. But we ask that you act reasonably and with common sense and treat our products, in the matter of Warning Information, no differently to medicines and other therapeutic products that really do pose a threat if misused!
We appreciate the opportunity to submit our comments on the matters.
We would be pleased to work through the issues with the Ministry and offer our research and information resources to the Ministry to resolve any of those issues.

Submitted by National Beekeepers' Association of NZ Inc, January 1998.
Contact Information: Harry Brown/ Executive Secretary NBA.
PO Box 3079 Napier. tel (06) 843-3446 fax (06) 843-4845.

NBA — Southern North Island Branch buzz weekend

We want you to be part of our BUZZ WEEKEND!!!

Just imagine, sun filled skies, white beaches, the breeze in your hair, the flavours of a BBQ and a cold, crisp drink in your hand. It could all be yours if you travelled overseas. So forget it, it's August and you have just realised how much you had wanted to go on the Buzz Weekend, but instead, had procrastinated about and now you are watching reruns of Shortland Street... Big Sigh!

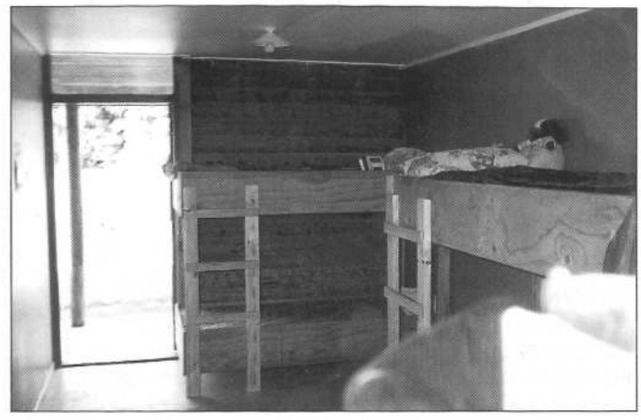
But wait, it is NOT TOO LATE, act immediately and put the 14th until the 16th of August in your dairy... now read on!

The NBA's Southern North Island Branch is going to be having a weekend of informative fun in the middle of August. It will be a workshop on beekeeping and will be for the hobbyist and commercialists alike.

The aim of the weekend is fun with the gain of beekeeping knowledge and is to be held at the Camp Rangi Woods, Pohangina Valley from Friday evening through Sunday midday on the 14th August until the 16th. This is a very beautiful area and is an area that has seen beekeepers participation before.

We want you to be involved as it will be a great time to meet other people and share experiences. It will be a weekend for everyone, so, husbands bring your wives, wives your husbands, and kids, bring the family. This will be a weekend that will be talked about for years!

This will be a professionally run weekend that will cater for your needs. For the hobbyists, areas covered maybe, bee biology, hive manipulation, trouble shooting, requeening, queen rearing, wintering down, honey extraction, and disease recognition and regulation. For the commercially oriented guys, effective honey extraction, intensive beekeeping, effective pollen trapping, pollination requirements, live bee exports, alternative hive setups, and management requirements and documentation might be areas that catch your fancy.



The two days will be a symposium of beekeeping that will allow all to participate freely in a relaxed environment.

Cost: Food, accommodation and the course $50.00 — TRUE $50.00 FOR EVERYTHING!

At the end of the workshop a certificate from NBA Southern North Island Branch will be presented in recognition of your participation. This certificate, you will be able to have framed, and it will allow you to finally take down that old PHD you have been dusting for years.

For more details...

Contact: PJ on (06) 378-7632 or Frank on (04) 478-3367.

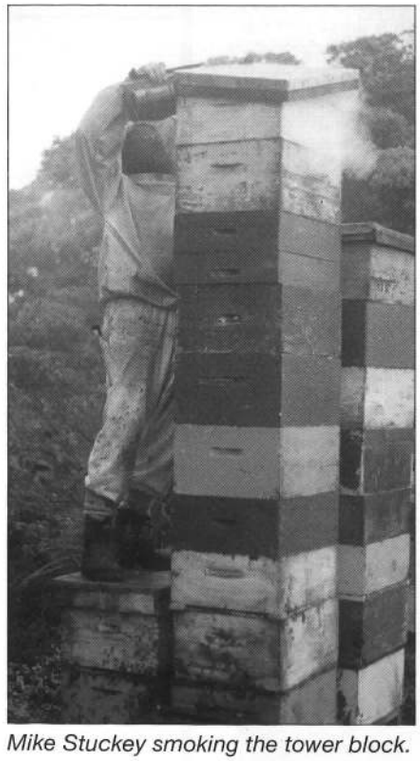
Barging in and out of Rangitoto

The pohutukawa honey story

Have you ever noticed how, when you know that you have to get up extra early, your body compensates for it by staying awake most of the night and then waking you up with a start two or three times, an hour or so before you have to get up. When the time arrives for you to get out of bed you are as sound asleep as a hibernating bear. Well, Mike eventually rapped on my window with the obligatory 'Are you awake?' I prised my eyes open and we went down for a feed and sure enough, just as he had promised, it was 4 o'clock on the truck clock as we departed. Things were not looking good, it had been drizzling and showering all night and as we drove through the almost deserted streets of Auckland in the dark it looked very bleak indeed. We drove across the bridge and around the Tamaki Estuary where there were three barges tied up. One of them just backed up to the ramp and we backed on, followed by the other truck and the ute and they raised the front of the barge and we were off. It is a bit unnerving at first, you look out the window and you are moving then you look at Mike driving with his hands off the wheel, not paying any attention and drinking a cup of coffee.

As we approached Rangitoto the sky was just beginning to lighten. The barge just ran, what I now realized to be its bow, up onto a concrete ramp and we drove off through the strange countryside that makes Rangitoto so unique. The bush is fairly low with no really big trees except for some reasonably sized pohutukawa. It looks quite lush, and is now recovering well from the depredations of possums and wallabies which had defoliated the place to the extent that some years ago, before an extermination campaign was launched, the Stuckeys had just about decided to give up beekeeping there. The ground is just scoria, black, abrasive, harsh, ranging in size from marbles up to lumps that you couldn't move with anything less than a bulldozer. The only flat ground is the road (by comparison only - it is not the Auckland motorway!). After a few miles we pulled off the road and went down a short track to a yard of bees. Mike tells me that they levelled this and the other sites and access tracks on the island by hand with a rock hammer and crow bar. All over this end of the island, at least, there are areas of bare rocks in amongst the bush and the yard was located in one of these. Mike and Neil have their hives on standard floors set onto pallets, all four facing the same way. There were 20 pallets in the yard and some of the hives on these pallets were extremely high. It all looked pretty optimistic to a lad from the regions like myself (who tends to think that putting hives five high is pretty much over the top), one in particular was nine full depth and one three-quarter depth boxes high. While the others set up I took some flash photos of the yard, then it was into it. Mike used the smoker and put the honey supers down onto a steel frame then Neil used the blower, powered by a generator, to clean the bees out. Then Peter and I (also Peter) took turns to carry the supers over to the truck where Grant stacked them onto pallets. All this, I might add, started at 6am while it was still half dark. We started at the back of the yard where the hives were lower (the two queen hives were at the front of the yard) and gradually worked our way closer to the truck. The ground is composed of fist sized scoria which didn't make walking any easier. As we got towards the 'skyscraper' section of the yard the light improved and it warmed up - not that it was hot but with the humidity at about 500% we were soon drenched with sweat. It didn't rain at all while we were on the island, it was just overcast but it wouldn't have made much difference, we were that wet. Now in 25 years of beekeeping the highest hive I remember was 7 high which I could still reach from the ground, (just) so it was a novel experience for me to watch Mike knock off the lowest hive on the pallet and then get on top of it to pass down the top few boxes from the other hives until they were low enough for us to work them from the ground.

The yard after removing the honey.



Mike Stuckey smoking the tower block.

Mike and Neil don't usually wear gloves, their bees are nice and yellow and generally quiet - but I mean to say, how would you like to be blown out of bed at 6.30 on a muggy Auckland morning. The flow had just about cut out and the bees were not happy. As we got closer to the truck the walk became shorter but we became more tired so everything balanced out nicely. As an aside, I lent Mike my hive tool to crack the boxes with and at first he found it large and cumbersome but when he changed back to his little commercial job he found it

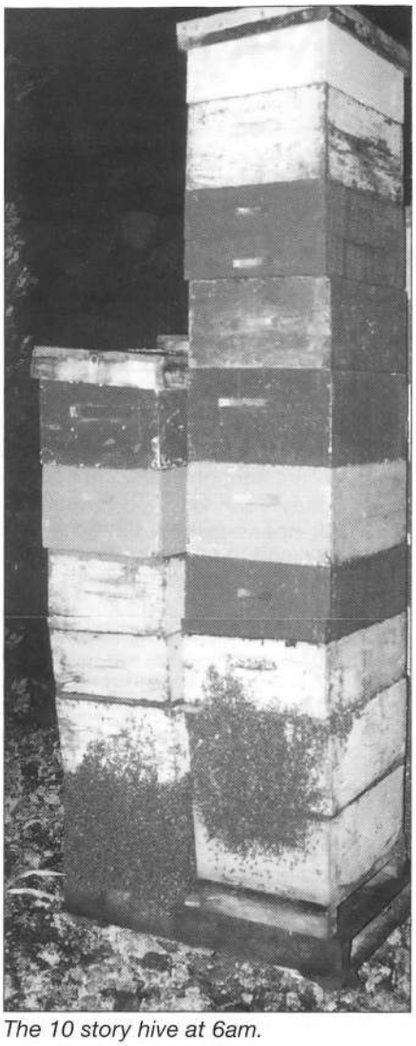
Half way through the yard.

lacking in weight and leverage - another convert to the Arataki style hive-tool - it was only by keeping a constant eye on it that I was able to return home with it.

By quarter to nine all the honey was off and covered as the bees were robbing quite freely. The hives were left two high ready to shift back to the mainland and the bees were hanging out in great beards all over the hives. While most of the boxes weren't chock-a- block, all but one were nicely full so Mike and Neil's optimism was certainly justified. I'm not sure how many boxes we took off but it was heaps. By 10 past 9 we were backing on to the ferry again and were soon heading back towards Auckland. Neil took the covers off the trucks to let the bees out and I got out to take some photos and got stung on the eye for my trouble. All too soon we were back on dry land threading our way through the Auckland traffic, over the bridge and back to the honey shed in plenty of time of lunch.

After lunch Mike showed me how to work his extracting plant and, as pohutukawa honey sets like concrete in a very short period of time, we got stuck in extracting it. Grant came along ,so Grant and I extracted all afternoon and again in the morning. We must have done quite well because Mike was late for lunch because the tank came so close to overflowing that it had a 2 inch head on it and was just starting to move down the sides when Mike finally got rid of a slow customer in the shop and got back to drumming off. Familiar story, the only sound an overflowing tank makes is the cursing when you discover it. After lunch Neil ran me to the airport where I was 5 minutes late but fortunately managed to squeak on.

All in all it was a very interesting and enjoyable couple of days and while it might not be everyone's idea of great adventure tourism I certainly enjoyed it. It is great to work with different people with different ideas and equipment and especially so in this case with the trip out to such a unique island. My thanks to the Stuckeys for inviting me and looking after me so well, especially Mike and Linda who put me up with their family and fed me while I was there. And the organoleptic qualities of Pohutukawa honey - mild tasting, very smooth honey with a slight salty, almost shellfishy, tang.



The 10 story hive at 6am.

Peter Berry

Waikato Field Day

Diary 21st of March

Liquid Syrup Feeding

Cold syrup versus warm syrup

Which is the best?

Plastic Frames Plastic Foundation

What are the Pros and Cons?

Time: 9.30am

Venue: Haddrells Honey House

Benn Road, Lemington, Cambridge

All inquiries to Tony (07) 856-9625

Southland Branch Report

Winter - early spring

Temperatures:	Mild, for Southland
Rainfall:	Below average
Ground condition:	First early spring round a little wet, otherwise good.
Winter work:	After a poor season, only essential maintenance done.
General comments:	After a mild winter hives have opened up in good health and strength. Early spring became cool and dry, willow flow poor, constan

New Zealand Comb Honey Association

Comb honey in baked products

by Dennis Taylor

Introduction

Culinary accidents over the years have evolved into a number of commonly used bakery products. According to some references, puff pastry was the result of one such accident. A baker making pastry, left out the butter. Later, realising the mistake, they added the butter in lumps and tried to roll it into the product. The result, layers of pastry interspersed with butter giving the classic puff finish when baked.

That may be mythology, but it does have close parallels to the concept of using comb honey in bakery products ie Mrs X - wife of Mr X the Apiarist - unexpected visitors need baked goodies - not enough butter - not enough sugar - panic - use comb honey - success and delight - the rest as they say is history. It opens up a realm of ideas for future marketing associated with the concept.

Lets get history off to a solid start by putting the concept through a few hoops and testing the theory in a controlled process.

What are we going to replace?

In order to explore the concept, we need to understand the components that we are going to replace or substitute by using comb honey.

A large number of baked items are based on a fairly narrow range of basic ingredients: flour, eggs, shortening, sugar and liquid. These base ingredients will alter in proportion depending on the required end product.

The concept of using comb honey would potentially replace the sugar, shortening and some of the liquid components.

Sugar:

Apart from the obvious sweetening factor, sugar has a number of other effects on baked products and the baking process. Being hygroscopic, sugar has an effect on the moisture content as well as the keeping qualities of products. Added sugar also enhances browning reactions. This will influence cooking temperatures and cooking times, and will have an effect on the colour of the end product.

Shortening:

Butter and margarine are the most common forms of shortening in a home baking situation. These forms of "shortening", when used in the production of cakes and biscuits, are added to separate starch granules from coagulated protein in the finished product. This will weaken the structure and make the product more tender. In other words it is the shortening which will assist in giving biscuits and cakes their crumbled texture.

Liquid:

Eggs and milk contribute to the liquid proportion in a large number of recipes for cakes and biscuits. Biscuits have a far lower proportion of liquid than cakes and obtain the liquid component from the egg and/or shortening. Honey has a water content of approximately 17%; a fact that needs to be taken into account when developing or adapting recipes.

Identifying Suitable Products for Development

The following factors were taken into account when identifying specific products that would be suitable for development.

The Proportions of Sugar and Shortening

Many cake and biscuit recipes use near equal proportions of sugar and shortening in their production. Visually, comb honey appears to have equal proportions of comb to honey. I was very surprised to find that after measuring the proportions, the comb constitutes a relatively small proportion of the total volume. I worked it out to be 8 10% of the total volume. This proportional lack of shortening will have a marked influence on the suitability of certain types of product.

The Liquid Content

As previously mentioned, honey with a water content of 17% will have an effect on the handling and cooking properties of products. As a replacement for sugar the product needs to be able to handle the subsequent difference in liquid content.

The Preparation Processes

There are a number of different processes which can be employed to produce cakes and biscuits.

In shortened cakes and biscuits, conventional methods of preparation often included "creaming" the sugar and shortening together. This beating process incorporates air into a product through the action of the sugar crystals cutting air cells into the shortening medium. The addition and beating of eggs adds to this process of aeration. A banana cake is an example of a shortened cake.

The absence of sugar crystals and the viscosity in comb honey rules out creaming as a viable method of sole aeration and lightening.

Sponges are an example of a "foam". In this type of cake, the eggs and their ability to foam when whisked are the aeration mechanism. The cooked starch from the flour and the coagulated proteins of the eggs hold the air pockets in place in a classic sponge texture.

Other processes rely on a combination of beating and chemical raising agents. Baking powder is the most common form of raising agent used in home baking. Modern domestic appliances and mixers have resulted in the development of a number of "all in" processes which produce very good results in certain products. Muffins are an example of a product suitable for this application.

Mention should also be made of the fact that different types of flours will also have an effect on the finished qualities of baked products. Strong flours with a high gluten content are used for bread products, whereas softer flours are used for the production of cakes and biscuits. It is important to note that overworking of certain products will lead to tough eating qualities, a result of the development of the gluten.

Test Products

Bearing in mind the previously mentioned factors, the following products were identified as being suitable to "test the waters":

• Muffins • Sponge Cake • Banana Cake •

The test recipes were based on conventional recipes. The methods and proportions of ingredients were adjusted to suit the end product.

Note

I have intentionally avoided the bread making process at this stage for the following reasons:

- domestic bread recipes use relatively small proportions of sugar
- commercial bread-making is outside my area of expertise
- commercial viability relies on high volume. Commercial high volume generally incorporates the use of preservatives, improvers and other products which are the domain of trained food scientists and technologists.

Test Recipe:
Comb Honey, Apple and Cinnamon Muffins

Ingredients

200gms	Comb Honey
2	Eggs
2 teaspoons	Baking Powder
160gms	Flour
1	Apple finely chopped
1 teaspoon	Cinnamon

Method

Place the comb honey and eggs in a food processor, blend together until smooth. Transfer to a mixing bowl. Sieve the flour, cinnamon and baking powder and add to the mixture. Combine lightly with a wooden spoon. Add the chopped apple and mix lightly to combine. Place mixture into well greased muffin tins (½ full). Bake for 20 minutes at 185°C.

Notes
Makes 12 muffins. If using a convection/fan oven drop the temperature back to 170°C. If using mini muffin tins they will take approx 12 minutes.

Test Recipe:
Comb Honey and Banana Cake

Ingredients

200gms	Comb Honey
2	Bananas
2	Eggs
1 teaspoon	Baking Soda
2 tablespoons	Boiling Milk
1 teaspoon	Baking Powder
240gms	Flour

Method
Place the comb honey, eggs and bananas in a food processor, blend together until smooth, transfer to a mixing bowl. Dissolve the baking soda in the boiling milk and add to the mixture. Sieve the flour and baking powder and add to the wet mixture. Combine lightly with a wooden spoon and place in a lined 17cm cake tin. Bake for 30 minutes at 180°C.

Notes
If using a convection/fan oven drop the temperature back to 160°C.

Test Recipe:
Comb Honey Sponge

Ingredients

100gms	Comb Honey
4	Eggs
120gms	Flour

Method
Place the comb honey and eggs in a mixing bowl and beat with a whisk, continue whisking until mixture flows off whisk in a continuous ribbon. Sieve the flour. Add to the mixture and gently fold in until combined. Pour into a lined 20cm cake tin. Bake for 30 minutes at 180°C.

Notes
If using a convection/fan oven drop the temperature back to 170°C.

Costs:
A comparison of costs highlights a significant difference between similar product lines. For a domestic consumer baking the product at home, the cost comparison may not be a major consideration. For the commercial baker, costs are of major importance. At the end of the day the product has to be competitive with similar lines. The following table shows a cost comparison based on retail prices.

Banana Cake Ingredients	Cost	Comb Honey and Banana Cake Ingredients	Cost
Sugar	.13	Comb Honey	3.06
Butter	.43	Eggs	.47
Eggs	.47	Flour	.27
Flour	.27	Baking Powder	.01
Baking Powder	.01	Baking Soda	.01
Baking Soda	.01	Milk	.01
Milk	.01	Bananas	.96
Bananas	.96		
Total Cost	**2.29**	**Total Cost**	**4.79**

Nutritional Aspects:
The potential health benefits may be the real key to promoting products in the future. Whilst the kilojoule/calorifie value of a product is not the over-riding factor in the health equation the following table forms a basis for nutritional comparison.

Banana Cake Ingredients	Kj	Cal	Comb Honey and Banana Cake Ingredients	Kj	Cal
Sugar	1500	360	Comb Honey	2392	571
Butter	2940	700	Eggs	670	160
Eggs	670	160	Flour	3591	857
Flour	3591	857	Baking Powder	67	16
Baking Powder	67	16	Baking Soda	32	8
Baking Soda	32	8	Milk	63	15
Milk	63	15	Bananas	796	190
Bananas	796	190	Total kj/cal	7611	1517
Total kj/cal	9659	2306	Total per 80gm portion	634	151
Total per 80gm portion	805	1492			

** Based on New Zealand Calorie Counter Data.*

Conclusions
After considering the concept and working through the recipe development process I have come to the following conclusions:

- comb honey can be used as a substitute for butter and sugar within a certain range of bakery products
- the products are simple to prepare and compare favourably with similar product lines
- the products best suited to replacement are those that require a relatively moist mixture
- the products were tasted by a range of people and were generally very well received. A number of people were even more impressed when they found that it was a product which contained minimal fat
- the products did have a definite Honey aroma
- from a professional taste and texture perspective, I and a number of my colleagues could detect a faint waxy aroma and taste in the product. With the reduction in the "shortening" properties, the products did tend to be slightly heavier than comparable lines
- the cost comparison is a major factor to consider regarding any future development or promotion of the concept, especially in the commercial arena.

Recommendations.
Before proceeding any further with the concept I would like to make the following recommendations:

- circulate the recipes amongst members of the association for trial and feedback. I believe that the muffin recipe has the most potential for development and extension with different flavours and ingredients. While the other two products serve to prove that the concept works, they have limited potential to develop further.
- gather specific data on the nutritional/health aspects. This will confirm the fact that beeswax is inert as a food substance and has no adverse effects on the human metabolism. This process may also highlight specific properties that can be focused on and used as a future marketing tool.

I look forward to any feedback as a result of this process. I am available at any stage to clarify any points that I have raised and look forward to our continuing association.
All comments to Bill Floyd at NZ Honey, Food & Ingredient Advisory Service, Ph: (03) 577-6103, Fax: (03) 577-8429.

The Biotechnology Revolution:

1. Genetic Modification of Plants

Sue Muggleston, HortResearch, Mt Albert Research Centre, Private Bag 92 169, Auckland

Genetic manipulation of organisms is set to have an enormous impact on food production throughout the world. The development of biotechnology, of which genetic manipulation techniques are a part, promises to generate a revolution in biological production techniques, affecting not only the way in which farmers and growers will operate but also impacting on all consumers of food and other plant products.

This is the first in a series of articles written to give you a better understanding of what is happening in New Zealand and around the world in this rapidly developing field. This article outlines the genetically modified (or transgenic) crops currently being developed and tested worldwide, and gives some examples of what we might expect to see in the future.

Genetic engineering is now a commercial reality. By the end of 1995, 3,500 field trials of genetically modified organisms had been conducted worldwide; in 34 countries; covering 56 crops. There had also been 35 approvals to grow nine different genetically modified crops on a commercial basis (eight traits in six countries).

Two thirds of the trials are currently being carried out in the United States and Canada.

The majority of the remainder is being carried out in Europe with the major players being France, The Netherlands and the United Kingdom.

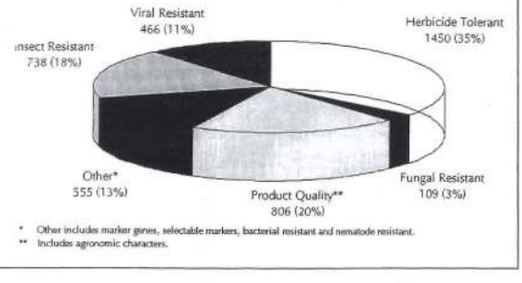
It is interesting to note that while Germany is still a relatively minor player on this list and has been opposed to genetic engineering, political and public opinion has undergone a clear change. It is predicted that the number of German field trials will rise to over 100 in 1997, and politicians are urging Germany to become leaders in the area of biotechnology. According to the scientific journal, Nature Biotechnology, Germany had approximately 150 biotechnology companies at the end of 1996. By mid-1997, the Ministry of Science had counted another 93 new enterprises, with an additional 52 expected to be in business by the beginning of next year.

Figure 1 shows the various different transgenic crops that are being field tested around the world. The vast majority of these are annual crops. In the fruit area, melons are the closest to commercial release, but there are field trials on apple, cranberry, grapes, kiwifruit, papaya, plum, raspberry, strawberry and walnuts.

Figure 1: List of Transgenic Crops Tested in Field Experiments Worldwide
(1986 through 31 December 1995)

Large number of field trials (commercialized or near commercialization; >150 trials)	Medium number of field trials (commercial development; 25-150)	Low number of field trials (experimental; 1-25)	
Canola/Rapeseed	Alfalfa	*Amelanchier laevis*	Grape
Cotton	Cantaloupe	Apple	Kiwi
Maize corn	Carnations	*Arabidopis thaliana*	Lettuce
Melon	Flax	Asparagus	Lupins
Potato	Rice	Barley	Papaya
Soybean	Squash	Belladonna	Pea
Tobacco	Sugarbeet	Birch	Peanut
Tomato	Sunflower	Cabbage	Pepper
		Carrot	Petunia
		Cauliflower	Plum
		Chicory	Poplar
		Chrysanthemum	Raspberry
		Clover	Serviceberry
		Cranberry	Spruce
		Creeping bent grass	Strawberry
		Cucumber	Sugarcane
		Eggplant	Sunflower
		Eucalyptus	Sweetpotato
		Gerbera	Walnut
		Gladiolus	Wheat

Figure 2: Number and (%) of Transgenic Crop Field Trials Worldwide: Most Frequent Trait Categories
(1986 through 31 December 1995)



* Other includes marker genes, selectable markers, bacterial resistant and nematode resistant.
** Includes agronomic characters.

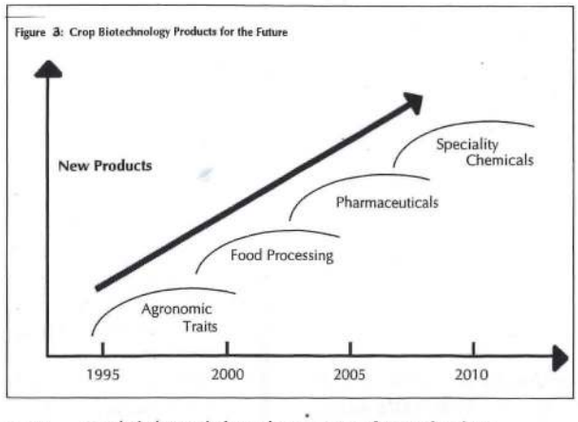
Figure 2 shows that most of the transgenic crops currently being developed and trialled involve improved agronomic traits such as herbicide tolerance, pest and disease resistance, and delayed ripening genes for reducing postharvest losses and improved quality. These improvements, whilst primarily benefiting growers, are expected to lead to more sustainable agricultural systems which help to meet increasing consumer demands for reduced pesticide levels and more consistent food quality.

The next wave of genetically modified products ***(see Figure 3)*** have the potential to provide greater consumer benefits - enhancing food processing and quality, improve food convenience and produce health-improving or illness-preventing substances. Increased nutrient products could be tailored for specific niche markets such as athletes, body builders, women, elderly or adolescents. Food convenience products could include, for example, fruit that was delayed from ripening until activated by an external event or development of labels which can tell consumers whether the fruit is ripe and ready to eat or not.

Future generations of products are predicted to include pharmaceuticals - for example the use of fruits as edible vaccines, or as factories to produce other pharmaceutical products. Tobacco plants have already been developed which can produce human haemaglobin for medical purposes. Another development that has already shown its potential is using plants to produce plastics. This would reduce our reliance on petrochemicals. Other speciality chemicals are also expected to be able to be produced from plants in the future.

These are just a few examples of the tremendous potential that genetic engineering has to enhance and expand the potential of crops through the direct manipulation of plants. In conjunction with this research many techniques have been developed which are already making an impact. The next article will outline some of these.

Figure 3: Crop Biotechnology Products for the Future



Reference

James, C. and A.F. Krattiger. 1996. Global Review of the Field Testing and Commercialisation of Transgenic Plants, 1986 to 1995: The First Decade of Crop Biotechnology. ISAAA Briefs No. 1. ISAAA: Ithaca, NY. pp31.

NZ Honey Research Unit - Research Partner Opportunities

The NZ Honey Research Unit (HRU) based at Waikato University, is looking for companies to become partners (or 'collaborators') in Research projects at present underway. These projects are based on New Zealand hive products; and have already shown the potential for a commercially successful product to be developed from them.

Under the first GRIF scheme, a subsidy is available to pay for a research student's time and some costs, for eligible research work. The student would spend part of their research time at the industry collaborator's premises. In this way both the student and the collaborator benefit from the research results.

The Honey Research Unit's co-directors (Prof Alistair Wilkins and Assoc Prof Peter Molan) are responsible for the supervision of the student and for establishing the research protocols.

The collaborator has immediate and full access to the research information; and it is expected that they will make full commercial use of that information if it is profitable for them to do so. (The job of the HRU is to promote and encourage product innovations based on the research results!)

If your company has expertise in any of the following areas; or has intended R&D or Product development of a similar nature to the Projects, we would encourage you to take up this opportunity.

All applications will be treated in strictest confidence and will be known to the co-Directors and the HRU manager only. In the event of more than one company offering to collaborate on a research project a final decision will be made by the HRU team based on the best value to the research student and the beekeeping industry per se.

Projects eligible for GRIF Funding and With Potential Commercial Value to An Industry Collaborator:

HRU-P5: New Zealand propolis and antibacterial activity

Markham and Wilkins have had initial research published: New Zealand propolis has unique bioflavanoid constituents. A suitable collaborator is required to work with an HRU student in identifying commercial potential of those constituents and relating those to consumer needs.

HRU-P8: Honey as a cure for animal gastroenteritis

Brady's research (1996) shows honey has excellent potential in this area. Follow-up research needs to focus on testing various New Zealand honeys against specific isolates, including anaerobic activity. Project ideally suits a veterinary/ animal remedies company, or large scale rearers of pigs or poultry.

HRU-P9: Active manuka and stomach ulcers

Considerable nationwide publicity end of '97 and early '98 has raised public awareness of the bacterium Helicobacter pylori and its role in stomach ulcers. The next phase of research for active (non-peroxide) manuka honey will need to involve public volunteer trials and offers a dramatic publicity opportunity for the collaborating company.

HRU-P11: Honey meat baste (natural meat preservative)

The HRU is looking for a suitable meat processor/meat marketing company to explore this concept. The end-result could be a retail product with immense shelf-stability (even in a non-refrigerated distribution channel). Suitable for any meat type (red or white, animal, bird or fish).

HRU-P15: Pollen analysis

A Doctorate student of Peter Molan's with considerable international experience in pollen analysis is looking to carry out a major study of New Zealand floral honeys and their pollen content relationships. Eligible for GRIF funding. The successful collaborator would gain directly and immediately from the students existing knowledge and be involved in the development of, and totally understand the opportunities present in, the resulting data base.

Other products-

Some collaboration is already underway on other projects. A full summary of the HRU's 1997 and proposed 1998 work was published in the Dec 97 issue of the Beekeeper.

Inquiries-

(treated in stricted confidence to)

Bill Floyd, Manager
NZ Honey Research Unit
tel: (03) 577-6103 fax (03) 577-8429
PO Box 32 Blenheim
email <bill.floyd@clear.net.nz>

RECIPES

Hungarian Strudel

1 oz fresh yeast (cake type)
¾ cup warm water (85deg)
1 tbsp sugar
3½ cups flour + 1 Tbsp.
½ teaspoon salt
1 cup butter
3 egg yolks

Preheat oven to 350deg. Lightly grease a large rectangular baking sheet or jelly roll pan. Soak the yeast with the sugar in warm water in a small ceramic bowl; it need not appear to bubble. Place the flour in a large mixing bowl, sprinkle the salt over it, and cut in the butter as for pie crust with a pastry blender until the mixture resembles coarse meal. Make a well in the centre and add the egg yolks and yeast mixture. Toss together gently with a fork and then with your fingertips until the flour is well coated by the liquids and the dough forms a soft ball. Divide in three parts and roll each one out on a lightly floured board to a 12 x 12 rectangle. Spread with poppyseed filling, leaving 1/2" at the far end uncovered for easy sealing. Roll up tightly as for jelly roll and place the cylinders side by side, two inches apart, on the baking sheet. Let rise 15 minutes. Bake 45 minutes, until well browned and firm to a touch. Cool thoroughly on racks. Slice 3/8" thick to serve. Tightly wrapped, this keeps for days or weeks.

Poppyseed Filling:

8 ounces poppyseeds
½ cup butter
½ cup honey
2 tbsp cream
1 cup chopped walnuts
½ cup golden raisins

The night before, cover the poppyseeds with boiling water and let stand. Next day, drain well and grind. Special German poppyseed grinders are available at speciality shops, or use the fine blade of a meat grinder and put seeds through several times. Cream the butter with the honey till light; add cream. Then ground poppyseeds. Stir in nuts and raisins. Use to fill Christmas strudel or Hamentaschen. (Honey Feast)

Dark Fruit Cake

I like to send fruit cakes to family and friends at holiday time, so the proportions for this cake can be cut down if you only want one or two loaves.

1½ cup white grape juice, unsweetened (or apple juice)
2½ cups seedless white raisins
2½ cups seedless raisins
1 cup pitted, chopped dates
2 cups dried, chopped pineapple
2 cups dried, apricots
6 cups whole wheat pastry flour
2 teaspoons salt
½ teaspoon baking soda
2 teaspoons cinnamon
1 teaspoon each allspice and nutmeg
½ teaspoon ground cloves
¼ teaspoon ground cardamom
2 cups butter
1⅓ cups honey
10 eggs
2 tablespoons vanilla
2 cups shelled pecans, coarsely chopped
1 cup shelled walnuts, coarsely chopped

Heat the first 6 ingredients (the dried fruit and juice) in a large stainless steel pot for about 5 minutes, then soak them for 12 to 15 hours, with the lid on. Preheat the oven to 350degF. Sift the whole wheat pastry flour, then sift again with the remaining dry ingredients (except nuts). In a large bowl, cream together the honey, butter, eggs, and vanilla. Stir in the flour mixture, then the fruit mixture, and finally the nuts. Spoon the batter into 3 loaf pans that have been oiled and wax papered and 2 oiled cake pans. Bake for 3-3 1/2 hours or until done. Cool, wrap in foil, and store. These cakes can also be frozen. Makes 5 holiday fruit cakes.

Honey-Rum Balls

52 crushed vanilla wafers
6 tablespoons rum
½ cup honey
1 pound ground walnuts

Blend all ingredients. Use a tablespoon to form each ball. Store in lightly covered container in the refrigerator. Keeps up to 6 weeks.

Honey Snowballs

1 cup butter or margarine
2 teaspoons vanilla
2 cups flour
¼ cup honey
1½ teaspoon salt
¾ cup chopped nuts

Cream shortening and honey. Sift flour and salt, add to honey mixture. Add vanilla and nuts. Make balls, flatten slightly. Bake 10-12 minutes at 350deg. Roll in powdered sugar while hot and also when cooled. *Makes 3 dozen.*

Sesame Butter Cookies

2½ cups all purpose flour
¼ cup plus 2 tablespoons honey
½ cup teaspoon ground cardamom
1 cup soft butter
3 tablespoons sesame seeds, toasted in 400deg oven for 10 minutes or until golden brown.

Cream butter. Add honey in fine stream while beating constantly. Sift dry ingredients and add to creamed mixture. Add sesame seeds. Mix well. Chill dough for one hour. Roll dough into small balls. Place on ungreased cookie sheet. Flatten with bottom of glass dipped in water. Bake in 325deg oven for 15 minutes.

Raisin Almond Cookies

1¼ cups raisins
1 cup butter
¼ cup honey
1 teaspoon vanilla
½ cup silvered almonds
2 cups sifted all-purpose flour

Cut raisins or chop in blender. Cream butter. Continue beating while adding honey in fine stream. Stir in vanilla, raisins and almonds. Add flour, blending. Chill dough 1/2 hour. Shape in small balls. Bake on ungreased sheet at 325deg - 20 minutes.

Honey and Spice Glazed Ham

Honey and ham were made for each other. You can use either canned home or regular ham in this recipe. Vary the amount of glaze according to the size of the ham.

ham (whole or partial)
2 parts HEINZ 57 sauce
1 part honey or 1 part of each

Score whole, half or partial canned ham; stud with whole cloves, if desired. Brush ham with Honey 'N Spice Glaze. Bake ham following package directions, brushing occasionally with glaze during baking.

Honey-Berry Lemonade

4 large lemons
½ cup honey
3½ cups water cup berries (blueberries, strawberries, raspberries)

Squeeze lemons and strain juice. Add most of the honey and mix well. Add to water. Add berries. Use the remaining honey to sweeten to taste. Partially fill frosted glasses with ice cubes, pour in lemonade and garnish with a sprig of mint. *Yield: 4-5 servings.* ***Acknowledgement, American Bee Journal***

New analytical methods guarantee pollen and propolis's qualities

by Dr Ken Markham

At Industrial Research we have developed new methods for specifying the individual characteristics of bee pollen and propolis. These methods offer real marketing benefits for both New Zealand beekeepers and the local healthfood industry.

Worldwide, bee pollen and propolis are becoming big business. Our new analytical methods could give New Zealand bee products a significant competitive edge over those from other countries.

The potential for bee pollen

Bee pollen has long been heralded as having extraordinary medicinal properties because of its abundance of flavonoids, vitamins, minerals and amino acids. We are keen for the New Zealand health food industry to capture the full potential of local bee pollen by quantifying their specific makeup and properties of individual batches, and using this as a marketing strength.

Bee pollen is a highly variable mix of floral pollens with different floral sources giving different qualities to the product. For example, some pollens are high in anti-oxidant properties, whereas others have good anti-microbial properties.

New Zealand ought to be able to market a premium product which has its composition and qualities guaranteed. Our aim is to characterise bee pollens and analyse how much of each floral pollen is in a particular batch to give buyers important compositional information relevant to its effectiveness.

New analytical method

The new method we have developed specifies the individual characteristics of bee pollen. Using high pressure liquid chromatography we can match individual flower pollen patterns with bee pollen patterns and quantify how much of each flower type is represented in a batch. Commercial bee pollen is not comprised of just one flower pollen type, but represents many batches collected by bees from many sources such as gorse, dandelion, five finger etc. The HPLC method matches peaks in the pollens with known flower pollen patterns.

Can you help?

The only hold-up for the project is the limited available data on the patterns of different flower pollens. We need the help of observant beekeepers to supply us with samples of pollens which they know have come from particular flower stock. Only the beekeepers can tell us what the bees are gathering in a particular season or area. Please contact me if you can help with this.

We estimate that there are probably only about 20-30 different pollens which bees collect in New Zealand. So far we have characterised 10 of these.

Bee propolis

Similarly bee propolis can be defined to give buyers a guaranteed product and gain a higher price.

After honey, propolis is probably the second most important product which beekeepers get out of their hives. We have developed a way to analyse the qualities of New Zealand propolis to gain competitive advantage for local industry.

Propolis is a resin which bees collect from the surface of plant leaves and use to sterilise and block up holes in their hives. It is very high in flavonoids (up to 30% of alcohol solubles) and has important properties such as being antifungal, antibacterial, antiviral and anti-flammatory. It is commonly used as an ingredient in products like cough mixtures, toothpastes, tinctures, face creams etc, and in the treatment of ulcers, colitis, inflammation and immune deficiency.

Brazilian sellers of propolis to Japan get many times the price that New Zealand producers do, because they define and guarantee their product. I believe that in New Zealand we could do even better by presenting buyers with analytical data on their propolis using the method we have developed at Industrial Research. It employs high pressure liquid chromatography to obtain information about the flavonoids which are central to the therapeutic and financial value of the propolis.

Propolis from New Zealand has some fairly unusual properties which are good promotional features. For example, our propolis is high in dihydroflavonoids, such as pinocembrin, which is known to be very active against Staphylococcus aureus, a methacillin resistant bacterium.

For more information or to send pollen samples please contact: Ken Markham, Industrial Research Ltd, PO Box 31-310, Lower Hutt. Phone: (04) 569-0577, Fax: (04) 569-0055.

IMPORTANT DATES FOR 1998

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EXECUTIVE MEETING DATES

MARCH 98 - 3rd and 4th - AUCKLAND

MAGAZINE Copy/advertising deadline 1st of month. EXCEPT for DECEMBER issue. DEADLINE 25 NOVEMBER

COMING EVENTS...

NELSON BEEKEEPERS CLUB — Contact Pete and Kevin 546-1422

Diary Now!! 1998 Conference

1998 NBA Conference is being Hosted by the Far North and Northland Branches. It will be held at the "Quality Resort", Waitangi (Bay of Islands).

Dates:

Specialties meetings, Monday 20th and Tuesday 21st, Conference Wednesday 22nd and Thursday 23rd of July.

Hotel Phone number:
(09) 402-7411
Fax: (09) 402-8200.

Branch contact details on the inside the front cover of the magazine.

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Any questions call: P.J. (alias BUZZ) on (06) 378-7632

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NORTH CANTERBURY CLUB
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Contact Mrs Hobson
Phone: (03) 312-7587

SOUTH CANTERBURY BRANCH
Phone: Noel
(03) 693-9771

CANTERBURY BRANCH
Meets the last Tuesday of every month.
February to October.
Field Day November.
Contact: Trevor Corbett
Phone: (03) 314-6836

CHRISTCHURCH HOBBYIST CLUB
These are held on the first Saturday each month, August to May, except for January on which the second Saturday is applicable.
The site is at 681 Cashmere Road, commencing at 1.30pm.
Contact Peter Silcock
Phone: (03) 342-9415

DUNEDIN BEEKEEPERS CLUB
We meet on the first Saturday in the month September - April, (except January) at 1.30pm. The venue is at our Club hive in Roslyn, Dunedin.
Enquiries welcome to Club Secretary, Dorothy phone: (03) 488-4390.

FRANKLIN BEEKEEPERS CLUB
Meet second Sunday of each month at 10.00am for cuppa and discussion.
Secretary — Yvonne Hodges,
Box 309, Drury.
Phone: (09) 294-7015
All welcome — Ring for venue.

HAWKE'S BAY BRANCH
Meets on the second Monday of the month at 7.30pm.
Cruse Club Taradale.
Phone: Ron (06) 844-9493

MANAWATU BEEKEEPERS CLUB
Meets every 4th Thursday in the month at Newbury Hall, S.H. 3, Palmerston North.
Contact Joan Leckie
Phone: (06) 368-1277

NELSON BRANCH
Phone: Michael
(03) 528-6010

NELSON BEEKEEPERS CLUB
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WAIKATO BRANCH
Call Tony (07) 856-9625

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Meet 3rd Sunday each month (except January) at Kites Woolstore, Norfolk Road, Masterton at 1.30pm.
Convener Arnold Esler.
Ph: (06) 379-8648

WELLINGTON BEEKEEPERS ASSOCIATION
Meets every second Monday of the month (except January) in Johnsonville. All welcome.
Contact: Shauna Tate, 6 Martin Street, Porirua East.

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