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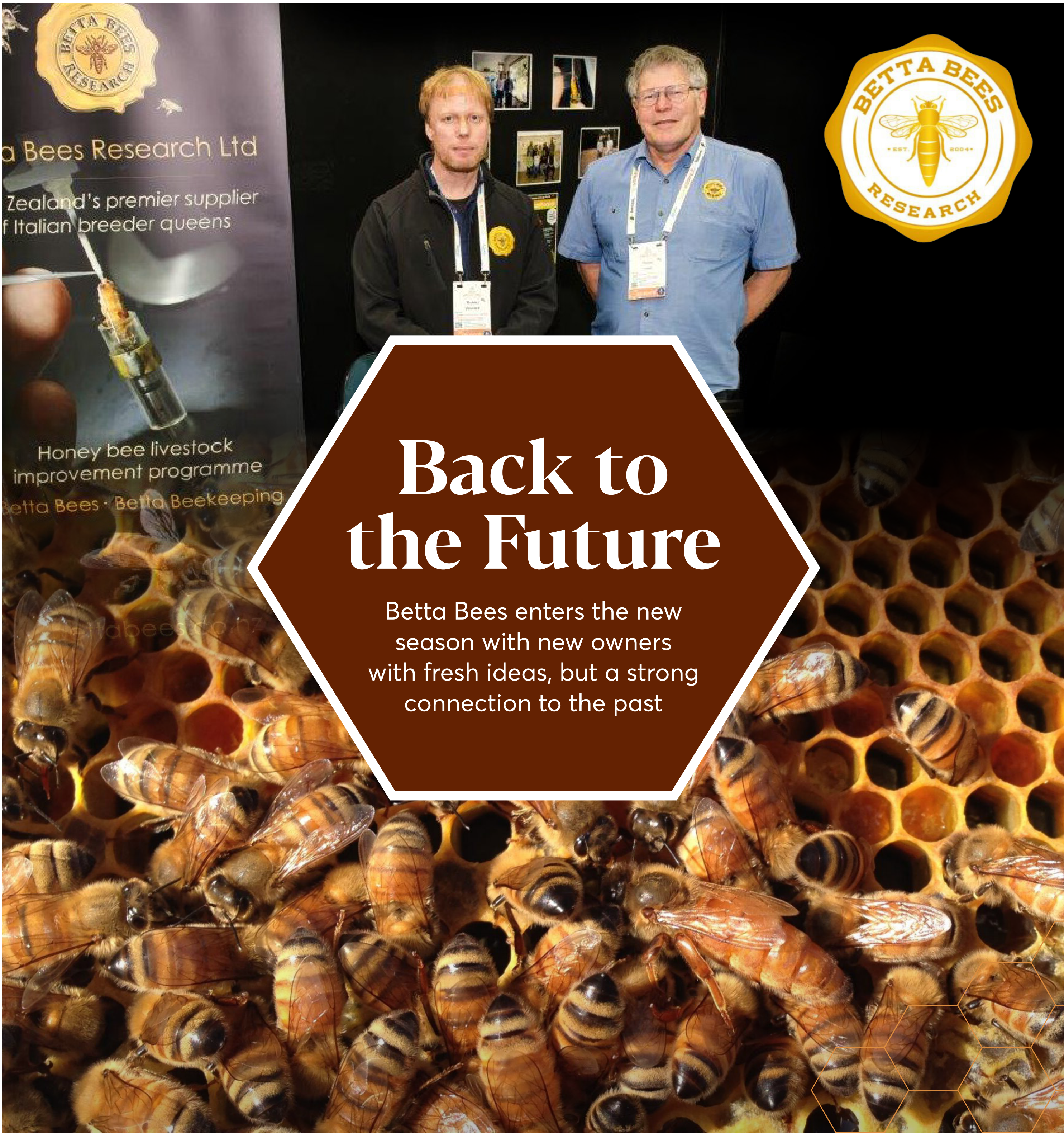
Apiarist's Advocate

News, Views & Promotions - for Beekeepers - by Beekeepers



Back to the Future

Betta Bees enters the new season with new owners with fresh ideas, but a strong connection to the past

Reviving Betta Bees

Nineteen years ago a group of South Island beekeepers volunteered their best bee stock to form a breeding programme, with the goal of maintaining Italian-strain genetics and a higher-performing bee. Last spring Betta Bees Research Limited's nearly-two decades of genetic improvement looked at risk of being lost though, as shareholders searched for months for an appropriate buyer. Now, after a December takeover, Betta Bees is alive and well, according to new owners who know the Otago business and breeding programme better than anyone.

For 13 years Frans Laas acted as general manager of Betta Bees and, even after being laid off in 2017, continued to contract his instrumental insemination (II) skills out to the programme. In 2015 Rob Waddell came on as his assistant, and even took over as contract manager in spring 2022 to maintain the hives while the Board had the business up for sale. It wasn't until well into the beekeeping season that new ownership was found though, when Laas and Waddell stepped up to take full control.

Having seen their jobs at Betta Bees scaled back in recent years, the pair were already in the process of forming their own company and bee breeding programme when Betta Bees was shopped.

"We had some discussions, decided to put in a tender and that was accepted. It was very fortuitous timing," Laas says, looking back on a helter-skelter first season fully at the helm of Betta Bees, after taking over in December last year.

After operating since 2004 and supplying top-end breeder queens to shareholders, the programme had fallen on tough times and into a financial hole in recent seasons, says Board member Peter Bell.

"The sale was a relief, because it wasn't going very well the way it was. The setup never reached a point where we had enough shareholders to pay for a general manager. Any business like that just can't rely on voluntary work to manage it. It never reached a level where it was big enough to be a proper business really," Bell says.

Rob Waddell, left, and Frans Laas have taken control of Betta Bees Research Ltd as joint owners, both having recently managed operations at the formerly group-owned business. Photo: Apiculture New Zealand.

JUST IN TIME

Due to the short-lived nature of queen bees, comparative to other livestock, without appropriate management the genetic gains which had been made through nearly two decades and with the help of much II, were at risk of being fast eroded. When they took over, the Mosgiel-based programme "wasn't in a good state", Laas says. However, they were able to identify the best stock and complete another II round to set up the programme for the coming season, and beyond.

"We had to get the breeding programming up and running and collect all the breeder queens, get hives split and get things ready for the next breeding round in January. It was quite a bit of work to determine what we had, where it was, and then shifting beehives to better, more suitable areas for production," Laas says.

The purchase included 179 beehives, which the new owners have since built to almost 300, with a plan to get to around 600 in the coming season.

THE BREEDING PROGRAMME

Betta Bees produces 'Italian type' honey bees (*apis mellifera ligustica*), with a focus on temperament, hygienic behaviour, varroa tolerance and honey production. They hope to build strategic commercial partnerships to potentially bring in new genetics as required.

"With the new genetic tools coming available we are able to select new genetic material to bring into the breeding programme without causing any glitches, which can happen if you just throw bees in," Laas says.

They also hope to capitalise on some of the research carried out by The Future Bees Programme to ensure that knowledge is not lost.

"Honey production is a consequence of healthy bees. We are selecting for hygienic behaviours, good brood patters and good laying queens. There are only five or six main factors, but with Future Bees we can use their information to look more into the genetic makeup of our bees and hopefully, with collaborative work, identify some genetic markers to use for further selection."

Betta Bees is selling their queens under three lines. Gold queens are priced at $1500 and not only bred from their top-ranking queens, but drone semen is selected for II from that same line of best performers. Silver queens are II, but differ in that drones are selected from a larger collection of colonies, and they retail for $1000. Open-mated queens are also available as a 'bronze' option which are put out to mate in areas of high Betta Bees drone congregation.

MORE INCLUSIVE

Laas says they hope to supply their queen bees to commercial beekeepers to graft their own production queens and to specialised queen breeders, so they can build their programmes to include Betta Bees genetics. Unlike in the past, supply of these queen bees will not be limited to shareholders.

"Compared with the old Betta Bees model, we want to be more inclusive to the whole industry, and to also cater to the smaller beekeepers who can't justify spending large sums of money on breeder queens," Laas says.

They already have some orders for the coming season and discussions with potential clients at the recent Apiculture New

Betta Bees will continue to breed Italian honey bee queens with desirable traits such as high honey production, hygiene and temperament under its new ownership, but dealings will no longer be constrained to the former shareholders.

Zealand conference in Rotorua has them confident of industry support heading into their first full season.

THE MEN FOR THE JOB

When the Betta Bees Board decided to put the breeding programme up for sale last year, the shareholders gave the Board a mandate to not just seek out the best price, but to find the best custodians for the hard-earned genetic gains.

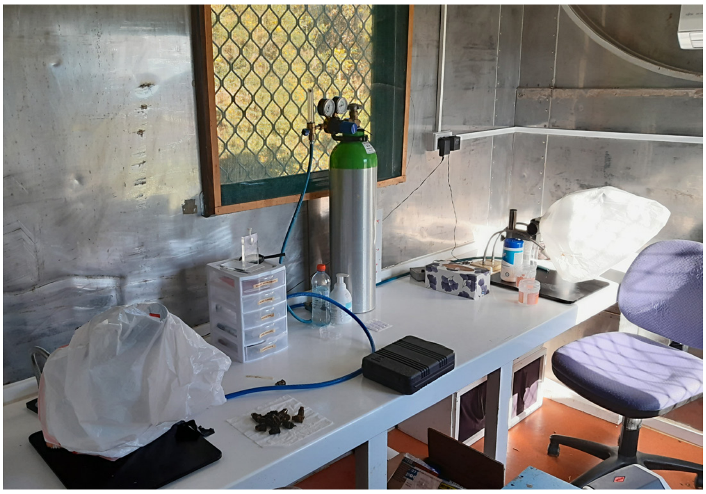
"We come to realise it is a very specialised business and for someone to take it on, they either have to have a lot of money to learn how to do it, or have the experience," Bell explains.

"The timing wasn't great as the industry is struggling and there isn't a lot of spare money to throw into a project with a lot of unknowns. Especially if they haven't done something like that."

However, when Laas and Waddell emerged with the only tender it was a relief that it came from such capable beekeepers.

"It was a wee bit of a surprise to us for a start, but both of them know how to do the job, so we see it as not only a benefit to the shareholders going forward, but the whole industry. Before now it was closed to non-shareholders, but now it is open to the whole market. As we got our head around it, we realised these guys know what they are doing, have done it for years, in fact no one knows the business better than they do," Bell says.

Waddell came into the Betta Bees programme as a novice beekeeper in 2015 and trained under Laas, a beekeeper of vast experience, including in II, and former president of the National Beekeepers Association. And Laas is taking on the challenge of



Instrumental insemination of queen bees is undertaken at the Betta Bees lab in Invermay, Mosgiel, which is crucial to their desire to harness the best genetics from both queen and drone bees.

bringing Betta Bees back to prominence as he reaches an age where he can collect the pension. He's not without motivation to see it through though.

"I helped set the whole programme up, got it all up and running, so it would have been a pity to see it disappear out of the industry," he says, adding "I've got a renewed, youthful, enthusiasm as a consequence of this."

Introducing the New Zealand Bee Breeding Association – Join Now

Collective action is one of the best ways for New Zealand beekeepers to win against varroa say those behind a new concept to bring beekeepers together to share knowledge about bee breeding programmes and make improvement in the genetic makeup of honeybee stocks, chiefly to include more varroa sensitive hygiene (VSH). The New Zealand Bee Breeding Association (NZBBA) is the brainchild of long time VSH queen breeder Rae Butler, and botanist Dr Linda Newstrom-Lloyd. They explain why the Association is needed and why beekeepers should join up.

BY RAE BUTLER AND DR LINDA NEWSTROM-LLOYD

Recognizing the urgent need to address the growing and intractable varroa mite infestations and their impact on New Zealand's beekeeping industry, passionate beekeepers and researchers have come together to establish the NZBBA. It serves as a dynamic platform for everyone to exchange ideas based on scientific data and local experiences at the grassroots level. Its inception is driven by the collective vision of fostering collaboration among beekeepers, commercial beekeepers, queen breeders, and researchers with the goal of improving their understanding and skills needed to increase the levels of the VSH trait throughout the country, within the context of local multi-trait selection programmes.

A FOCUS ON VSH – BUT WHY?

The initial focus is on VSH testing because this trait is well-known to predictably produce an increase of the bee's resistance to varroa by interrupting the reproductive cycle of the mite. This work is not restricted to specialised queen breeders using instrumental insemination (ii). Once initial levels of VSH are achieved, many overseas beekeepers and queen producers use simplified test and selection practices that are straightforward for anyone to learn to maintain a level of VSH in their own beekeeping outfits. Selecting queens based on high VSH (with or without the support of queen breeders using ii) has been shown to make a difference in the survival of bee colonies from varroa infestations (Harbo and Harris 2001).

Expanding widespread levels of the VSH trait in bee colonies adds a promising tool to tackle the problem of varroa infestations and reduce reliance on chemical treatments. Breeding for this trait is well developed in the USA and other regions of the world (Mondet et al. 2020). The most predictable test for breeders to use for selecting VSH has been developed primarily at the United States Department of Agriculture in Baton Rouge (Danka et al. 2011, O'Shea-Wheller et al. 2022). This is a two-part test which includes, firstly, a bioassay to test for reduced infestation levels due to bee hygienic behaviour and, secondly, a measure of the increase in the proportion of non-reproductive varroa mites in brood cells. The bioassay involves inoculation with varroa and therefore is targeted specifically to varroa sensitivity in the bees. Other types of tests for general hygienic bee behaviour, such as freeze killed brood or pin killed brood, are not as predictable in detecting high performing VSH bees (Danka et al. 2013; Leclercq et al. 2018) and can therefore compromise a breeding program.

With consistent and informed efforts, the benefits of ever increasing VSH levels will be realised over time as has been achieved in the last two decades overseas (Mondet et al. 2020; O'Shea-Wheller et al. 2022). We do not need to re-invent the wheel, the methods are already available and the NZBBA will be disseminating information on methods for testing VSH soon.

The New Zealand Bee Breeding Association logo illustrates four bees inside a koru, with each of the four bees representing beekeepers, commercial beekeepers, queen breeders, and researchers working together.

THE ROLE OF BEEKEEPERS IN BUILDING VSH LEVELS

Beekeepers are crucial players in the endeavour to build VSH levels in New Zealand. In general, they have about a 10% chance of finding the VSH trait in their own bee populations. Although hygienic behaviour in honey bees is natural, it is not common but can be found by testing (Bigio 2014). By learning how to test and select for VSH (while preserving other desirable beekeeping traits), beekeepers can contribute significantly to the proliferation of varroa-resistant bees in their own stock. Alternatively, if they do not find the VSH trait in their own bee stock, they can introduce the VSH trait by obtaining VSH queens from queen breeders who have used the specific VSH trait test. With widespread adoption of testing and selecting for VSH, New Zealand bee populations can gradually gain higher and higher levels of VSH which means that the bees do much of the work defending the colony against varroa.

PURPOSE AND METHODS OF THE NZBBA

The NZBBA stands as a platform with a clear and ambitious purpose: to breed varroa-resistant bees while maintaining high productivity and other desirable beekeeping traits. Members of the NZBBA should be committed to combining science with practical applications to empower all beekeepers to actively participate in efforts to combat varroa infestations through selection and breeding in their own bee stock. The association's objective is to focus on promoting varroa resistance breeding through research, education, and collaboration with all industry stakeholders.

Technology transfer workshops are a key part of the NZBBA, to disseminate knowledge and share experiences to help develop best practices. The association is open to interested beekeepers, commercial beekeepers, queen breeders and researchers. We have presented one workshop at the Apiculture New Zealand national conference in Rotorua on June 30 to introduce the topic of testing for the VSH trait.

The NZBBA has a *website* with educational information on scientific research and practical applications. We are building this site as a source of trusted information from scientific literature and experiences of participants working on the ground. The association is informal and evolving, with the aim to foster nationwide public good cooperation among all industry participants while respecting commercial sensitivity. By creating a unified network, NZBBA members can share valuable data and insights, leading to a collective and highly efficient approach to combat varroa infestations.

By prioritizing varroa resistance breeding focusing on what we see as the most important trait – the VSH trait – we can develop a valuable tool to add to the ongoing efforts to improve and implement Integrated Pest Management (IPM) strategies for varroa (Taylor and Goodwin 2021, Jack and Ellis2021). With concerted and persistent application of methods proven to increase the population levels of VSH bees, we can secure a sustainable and cost-effective future for beekeeping, honey production and pollination services in New Zealand.

We welcome and encourage everyone to join up for free as members of the NZBBA and help us to develop this resource for sharing new research and ideas on how we can achieve victory over varroa – wouldn't that be something!

For more information, and to register as a member of the NZBBA, visit www.nzbba.co.nz.

For a full list of references, see the online version of this story.

Open Days Educate on Honey, Pollination and Oxalic Acid

July saw two gatherings of beekeepers, one in North Island and one in South, put on by industry suppliers to promote their offerings as well as educate apiarists.

Beekeepers gather outside Paengaroa Hall in the Bay of Plenty during a break in the presentations at Manuka Orchard's July 28 open day.

Bay of Plenty honey storage facility Mānuka Orchard, now in its fifth year of operating, hosted a gathering of about 80 people at the Paengaroa Hall on July 28. There beekeepers were told the export mānuka honey market is picking up, although the demand for high-end mānuka honey is still "not there" yet. Among those presenting was Oliver Smith of beekeeping supply company Beequip who, earlier that week on July 25, had welcomed about 40 beekeepers to the Moutere Hills Community Centre near Nelson, where advice on the use of oxalic acid bee treatments was front and centre and proved well received.

The topics at the Bay of Plenty gathering were more varied and presented by Mānuka Orchard owner Logan Bowyer, NZ Manuka Group honey buyer Tony Eggleton, Hill Labs' Meghan Stannett and – fittingly for the event in the heart of kiwifruit country – Plant and Food Research scientists Ashley Mortensen and Melissa Broussard regarding their recent pollination studies, among others.

The open day followed a similar get-together at the same venue last winter and Bowyer says, once again, it was a successful event.

"It's great to get our beekeepers together to share what we are doing at Mānuka Orchard with their honey, but also to help educate them on other matters around the industry. It also helps build a stronger beekeeping community and strengthen relationships between beekeepers by getting dialogue going."

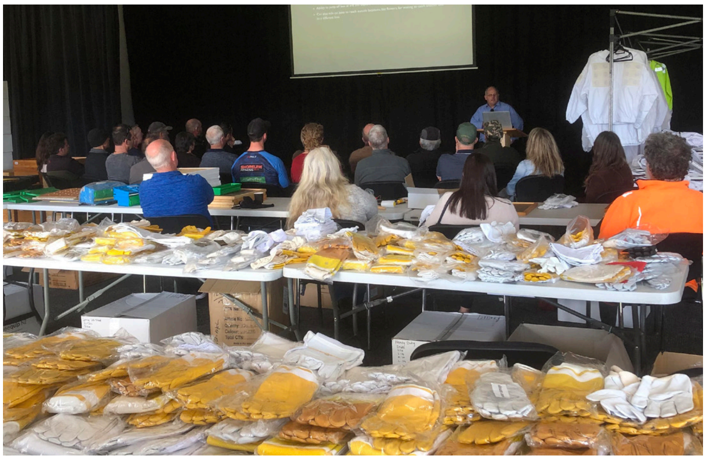
Among some of the points raised in Paengaroa were:

- Bowyer's presentation highlighted the dismal honey season seen in the North Island. Mānuka Orchard only put 2607 boxes through their contract extraction plant – less than a third of the previous season's throughput.
- "Blending is the new hero" Bowyer said, "which, with so much old honey stock sitting around, we all knew was going to happen". He believes it is going to take "three to five years" to work through all that old stock though, given the ratio of old to new honey which must go into each new blend.
- Further highlighting the issue of aged honey stock on hand, three-quarters of honey stored at Mānuka Orchard is now at 4°c, signalling it has reached 'maturity' and growth needs to be controlled. "I never though that would happen" Bowyer said of the abundance of honey being cooled. "The last few years have been like a perfect storm of factors working against beekeepers and it has led us here."
- "The outlook looks good" Eggleton said of NZ Mānuka Group's international markets, with the honey buyer saying they expect them to bounce back after Covid has had its impact. "Covid was a real thing. It's not just an excuse." He identified Saudi Arabia as a growing market for the Group, and that beekeepers shouldn't lose heart in mānuka as "there is light at the end of the tunnel". "I'm confident the market is coming back. Our market research tells us there is more enquiry, which means I am going to have to be getting in touch to buy more honey from you."
- Both Bowyer and Eggleton painted the picture that, recently, it has been manuka in the UMF 5 to 15 range that has been in demand, but not above 15. With many markets in recession, demand for high-end honey is much less.
- Research into the placement of hives in orchards has shown mid-row placement aids pollination success, with bees from hives placed on the outside of rows not as effective at

penetrating to the middle of kiwifruit orchards, Plant and Food Research showed. As beekeepers know, that can result in diminished hive strength (especially in covered orchards), but Brossard said their research demonstrated this can be somewhat alleviated by providing a hole in the net above the hive.

- Zespri representative Robin Baker-Gilbert told the beekeepers in attendance that, despite alternate methods of pollen application being available, they would never advocate for less beehives to be used. Around 10 beehives per hectare being the industry standard, depending on kiwifruit variety.

Mānuka Orchard's range of honey samples, as is held at their storage and processing facility, was on full display at their July 28 open day in Paengaroa.



Discussion around oxalic acid hive treatments was the order of the day, plus an opportunity to get some new beekeeping equipment, at a Beequip open day in the Nelson area July 25.

Also among those speaking was Smith, detailing some of Beequip's oxalic acid products, much as was done in Nelson a few days earlier. Discussion among the beekeepers following that presentation showed a range of experience with various mediums such as 'strips' or 'staples' soaked in oxalic acid, and/or vaporisation products. Some in the Nelson area had moved to solely using oxalic treatments, while others in attendance showed keen interest in greater use of oxalic acid within their beekeeping operations.

'In the Beehive' Event Set to Educate Beekeepers

Beekeepers need to look at diversifying away from solely being honey producers, given current honey prices, and so industry body New Zealand Beekeeping Inc (NZBI) have planned an "In the Beehive" day for beekeepers this month in the Waikato, where talk of pollination is high on the agenda.

For the second year running NZBI will run an August event at Hautapu Hall, Saturday 19th, with a full speaking program, some practical demonstrations and competitions planned to help drawn in beekeepers. Last August about 80 people attended a similar gathering.

"We hope the programme will help give beekeepers some thoughts about diversifying from honey alone. A lot of beekeepers just focusing on honey are in dire straits. We hope this varied programme will entice many beekeepers to come along," NZBI president Jane Lorimer says.

Among the programme are two panel discussions, one of which will include experts from Plant and Food Research on pollination – an applicable subject in the area, especially for any beekeepers travelling from further east and areas of high fruit production.

"We will discuss how pollination is changing and the different varieties of kiwifruit coming on board and how beekeepers are going to manage that and benefit from it, plus, whether covered orchards are a problem for pollinators, and any new ideas out there for the perfect pollination unit," Lorimer says.

The other panel discussion will be on the honey markets, with the participants yet to be confirmed, but honey buyers or traders sure to be a part of it.

"We want that to be a good communicative session, because we think a lot of honey buyers are not really communicating well to producers," Lorimer says.

Industry commentator and NZBI advisor Ian Fletcher will also speak to a range of apiculture industry issues, including the mānuka honey definition.

Byron Taylor, AsureQuality's apiculture technical manager, will help beekeepers decipher recent changes to RMP requirements, while the American Foulbrood Management Agency AP1 Dwayne Hill will educate on the honey bee disease. Add to that, updates from Victoria University of Wellington professor Dr Phil Lester on their latest RNAi varroa control research, as well as a chat on electric and hydrogen vehicles by Ian McDonald of vehicle sellers P & B Group, and it's a full and varied programme that will welcome beekeepers.

For NZBI members registration is free, while non-members are $50 each. Lunch is $10 for all. Updated information can be found and registrations made at https://nzbeekeeping.co.nz/seminar-day-2023/.

'IN THE BEEHIVE'
BEEKEEPER'S DAY OUT

NEW ZEALAND BEEKEEPING INC

Date: Saturday 19 August, 2023

Time: 8.30am, registration

Venue: Hautapu Hall, 39 Hautapu Road (between Hamilton and Cambridge)

Cost: Non-members, $50pp
Member registration, FREE
Lunch for everyone $10pp

Enquiries: info@nzbeekeeping.co.nz
or phone Jane on 027 294 6559

Updated Information and Registrations:
www.nzbeekeeping.co.nz/seminar-day-2023
Become a NZ Beekeeping Inc Member:
www.nzbeekeeping.co.nz/member-registration

FEATURES

AFB	Education and Communication
Varroa	Control Update
Sustainability	Future of electric or hydrogen-powered vehicles
	Electric truck and ute onsite
Compliance	New RMP templates Manuka definition – Future?
Panel Discussions	Honey market buyer/seller requirements and expectations
	Pollination
Practical	Honey tasting

QUESTIONS ENCOURAGED *Subject to change*

ALL WELCOME

Overstocking

'Overstocking' or 'overcrowding' are well worn terms around New Zealand beekeeping, especially following the boom in hive numbers associated with the 2010s. Now, after a period of industry consolidation, the pressure is less in some areas, but still a huge threat to hive health in many others. Veteran beekeeper John Berry explains what effect overstocking with beehives in an area has on bees, how to best manage against the threats and, who is to blame...

BY JOHN BERRY

OVERSTOCKING

Because of the very nature of bees there will always be times when there are not enough floral resources available to the bees no matter how few hives there are in an area. This is why they store honey and pollen. What we always used to aim for was the optimal number of hives in an average season. The optimal number is often nowhere near the number of hives that can be sustained at the peak of an above average honey flow but by keeping hive numbers down to this optimal level on average you end up feeding a lot less, having healthier and stronger hives and producing far more honey per hive.

It takes energy i.e., honey for a bee to fly. As they fly further they use more honey to fuel the flight and return with less. Long flights also take longer, wear the bees out more which reduces their longevity and increases their mortality risk. Bees will fly for at least 8km to get to really desirable nectar sources, but they do so much better if they don't have to.

The more work a bee has to do, the quicker it will die.

Overstocking of course just doesn't apply to honey bees, native and honey bees can have a severe effect on each other and in autumn the buildup of multitudinous insects ranging from wasps to butterflies often end with all available nectar being taken before bees can even get a look in. I was looking at some dandelions in my lawn the other day and saw one honey bee and five dunny bees (a type of hover fly that looks like a bee).

EXTENDING THE FLOW

Every year is of course different, but, when hives are kept at an optimal level, you often end up with an early box of honey before the main flow starts and an extra box of honey after the main

What's too many hives in an area? Well, that depends on the area, and veteran Hawke's Bay beekeeper John Berry says determining the answer relies upon "a combination of accurate record keeping, local knowledge and trial and error". Photo Revati Vispute.

flow. The main flow will also be extended at both ends because those early and late flowers can still provide a good flow providing there aren't too many bees. The average honey crop per hive in New Zealand is now somewhere south of 30kg which is plain embarrassing. My 10 year-year average is over 50kg. There must be beekeepers out there producing almost nothing on an annual basis because of overstocking.

Weather of course has a huge effect on honey production and hive health for that matter and certainly in Hawke's Bay this year it has been unrelentingly awful all season, but in other years when the sun has shined it's not that unusual for me to get over 100kg per hive in some apiaries and a friend of mine who I set up with a nice hive on Bluff Hill in Napier produced 200kg from that one hive in one year. This came from a combination of a beautiful sheltered warm site, year-round sources of nectar from what is a heavily planted urban area with thousands of flowering trees and shrubs, plus, in those days, an almost total lack of competition from other hives. I mention this not to try and show that one hive is the optimum number – which it isn't – but just to show how much potential is out there if we don't screw it up.

GETTING THE NUMBERS RIGHT

Working out the correct number of hives is a combination of accurate record keeping, local knowledge and trial and error. Different types of country will support different numbers of hives. In my case a lot of this had already been worked out by my father and my grandfather, although the increase in the price of mānuka did lead me to increase both my number of apiaries in mānuka areas and, in many cases, the number of hives in each apiary.

When prices are high you can get more honey off an area by having more hives, but you will get less per-hive. Increase hive numbers enough and you can end up getting less honey than you would have to start with. It is far more profitable to get 60kg per-hive off 100 hives than to get 20kg per hive from 300, and a lot less work.

If an apiary produced above average for the area it was in, or a higher-priced honey, then we would look at adding some hives, but this was always done in a gradual process and it would be very unusual for us to increase an apiary by more than 25% in one year and not that unusual to end up putting it back to the old numbers if crops dropped significantly. As mentioned, every year is of course different, but when you have a lot of apiaries in one area it is quite easy to compare like with like.

We like to have our apiaries at least 3km apart. Some beekeepers controlled numbers by adding more apiaries rather than increasing hive numbers and this has both advantages and disadvantages.

The bigger the apiary the more likely you are to have trouble with robbing, drifting and suboptimal mating. On the other hand, it can be easier to get the work done and it is not always possible to find good sites. 16 hives was the minimum number that I considered economic and these sites tended to be in the dry pasture areas of Hawke's Bay. Higher rainfall areas tended to be able to sustain 24 or even 32 hives, while the very best mixed pasture/bush sites could handle up to 50.

I believe there are some honeydew sites in the South Island that produce well with a lot more hives than that, but there are also some areas of Canterbury where sites are normally considerably less than 16 hives.

KNOW YOUR AREA

There are also some areas which are just not worth having hives in because, on average, they produce poor crops. Some of these areas are too dry and some are too wet. One of my regular tramping spots in the Ruahine mountains is accessed through a farm with wonderful clover and a pretty good swath of mānuka and every few years someone tries putting hives up there. It is one of the wettest places I know and for some reason it rains almost daily, even in the worst droughts. Come out a couple of kilometres and it is worth having bees.

Anywhere with wind farms is also going to be pretty doubtful country.

When varroa came along I noticed a good increase in average honey production, especially in dry areas near river beds where there were previously large numbers of feral hives in the hollow willow trees. The best of these apiaries were achieving a 10-year average of over 100kg per hive, but then beekeeping took off in popularity and these sites were overrun with large apiaries of hives destined for the mānuka in the mountains. These hives were on-site for generally 10 and a half months of the year leading to a drastic reduction in crops and a big increase in both spring and autumn feeding. Even when the surrounding hives were gone for that one and a half months, the hives were not in as good an order as normal because of the bees having to fly huge distances to get anything during the rest of the year.

Grossly overstocking an area affects every hive within about 8km. Even urban areas around here have been heavily affected both with mānuka hives and a big increase in hobbyists. Urban areas are mostly roof, lawns and roads and it doesn't take much to overstock these areas. 20 extra hives in an area means an extra million mouths to feed and that takes tens of millions of flowers.

THE RAMIFICATIONS

The recent price drops for all types of honey has brought home, quite forcibly, to a lot of people the effect of overstocking and these effects have been felt both by new beekeepers desperate for somewhere to put their hives, and established beekeepers who have found their costs and workloads have increased while their honey production has dropped, in some cases well below the point of viability. I know both new beekeepers and old established beekeepers who have just walked away.

WHO, OR WHAT, IS TO BLAME?

Established beekeepers who increased hive numbers when

"The recent price drops for all types of honey has brought home, quite forcibly, to a lot of people the effect of overstocking," says veteran Hawke's Bay beekeeper John Berry.

beekeeping finally became profitable. New beekeepers who saw a chance to make an independent living. Corporate businesses that could see dollar signs. Lending institutions who couldn't tell the difference between hype and reality. Landowners wanting their own piece of the pie.

Tertiary institutes training people in beekeeping for jobs that were often not there and in even more cases training people that would never be physically able to do beekeeping.

All the hype around bees and honey causing more people to become interested in bees and leading to a huge increase in the number of hobbyists, some of whom enjoyed it so much they went on to become commercial beekeepers.

An ever-decreasing amount of land suitable for beekeeping due to afforestation and also scrub areas slowly returning to bush. Increased demand for pollination hives both real and projected.

MPI'S ROLE

All of the above have certainly had an affect and would have had some affect no matter how things happened, but the Ministry for Primary Industries (MPI) need to shoulder a lot of the blame for their enthusiastic encouragement to increase hive numbers without giving any thought as to where these hives would go and what impact these hives would have on existing beekeepers. Unbelievably to me, they were still pushing the same line with great enthusiasm at our latest conference.

Some of their crazy figures on the increased number of hives needed for pollination on crops that didn't eventuate didn't help either.

MPI don't go around telling farmers that they can run three times the number of dairy cows on a farm, or three times the number of sheep, but for some reason they thought this would be fine for beehives.

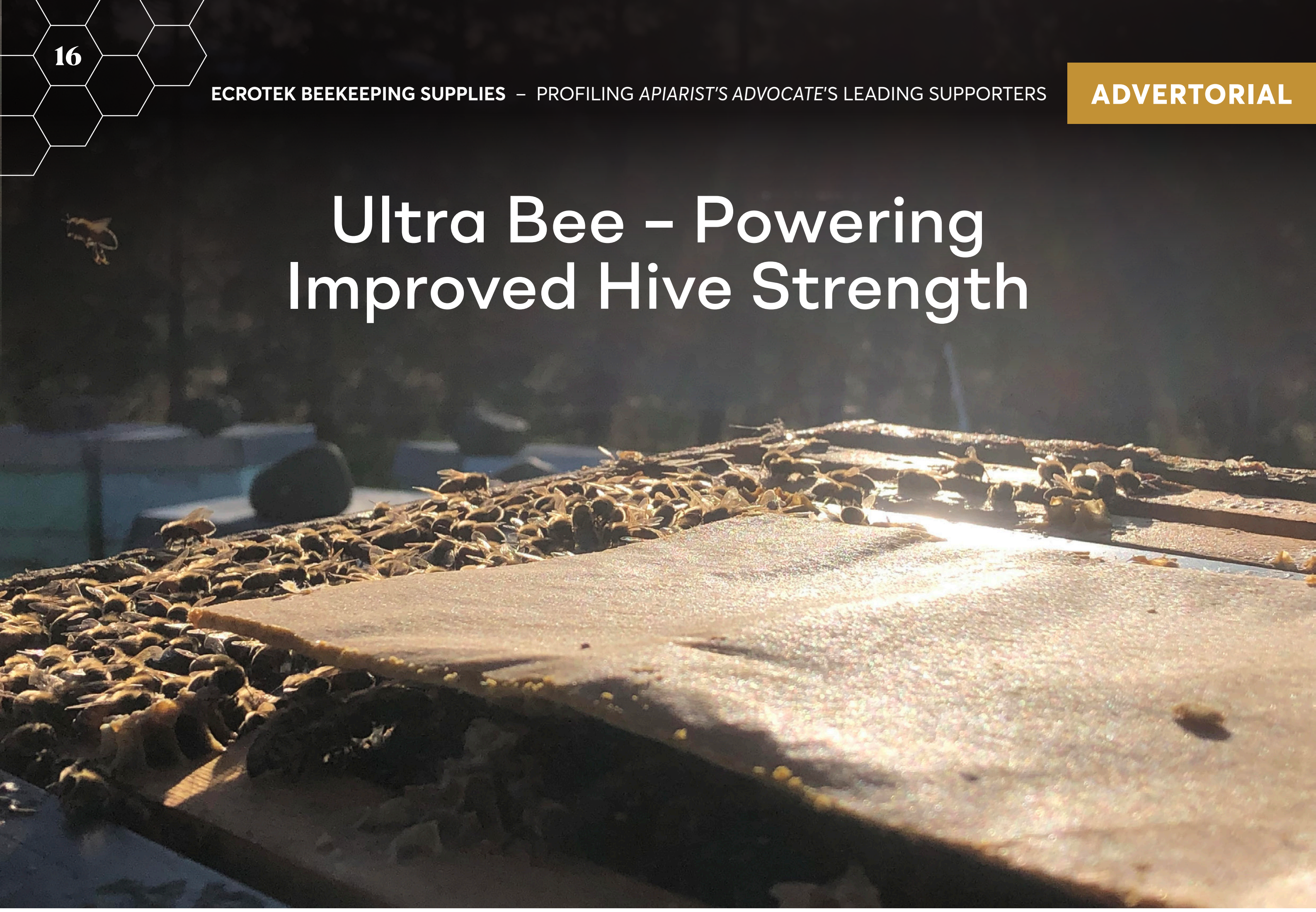
Hive numbers are starting to return to more sustainable levels, but there have been a lot of casualties amongst all classes of beekeepers.

WORST OF ALL

Perhaps the saddest for me is the loss of trust and respect that beekeepers used to have for each other and the cooperation and free sharing of knowledge that was part of being in the beekeeping community. These things can still be found between beekeeping friends, but are no longer almost universal like they once were and knowledge is shared a lot more carefully because of the potential consequences of that knowledge being used against you.

John Berry is a third-generation commercial beekeeper in the Hawke's Bay and a former chairman of his local branch of the National Beekeepers Association. Having spent 50 years fulltime in the hives, his Berry Bees business has been recently downsized to about 30 hives.

Ultra Bee – Powering Improved Hive Strength



Want faster and more consistent build-up of honey bee colonies in spring? What about, continued hive strength through autumn and into winter? The evolution of pollen substitute products is constant and now, with the recent introduction of Ultra Bee to the New Zealand market, Ecrotek Beekeeping Supplies has a product that is proving to be superior in assisting hive strength.

"This product supersedes others I have used by a long, long way, in terms of helping produce royal jelly and getting brood going," says Don Tweeddale, managing director of Tweeddale's Honey and a beekeeper of more than 60 years' experience.

Ultra Bee has been assisting North American beekeepers build up hive strength for decades by providing the protein, beneficial vitamins, lipids and minerals honey bees need to thrive and raise brood when natural pollen is not available in sufficient quantities. Of course, that is largely in early spring and autumn, but also when hives are in areas where mānuka dominates. Tweeddale's Honey have been quick to trial the new product through Ecrotek at those times of year, and in "mānuka hives". Ultra Bee is far from the first pollen substitute Don Tweeddale has trialled in his long career, but it is by far the best.

"For us it is critical because, for so many years before getting this protein into them, we would end up with a strong hive in the winter, but come early September you think 'where did the bees go?'. A massive decline with only two or three frames of brood and struggle, struggle, struggle all the way through," Tweeddale says.

"We fed in August and it extended the life of the bee out at least another couple of weeks. Those bees were able to look after the new cycle of bees coming through which meant we were able to avoid the massive drop in bee numbers in September which we had seen in comparison to other years, using other pollen substitutes."

Ultra Bee comes in 5kg and 15kg boxes of pre-mixed patties, with the recommendation to feed ½ - 1 patty to each hive. Patties are simply and quickly placed on the top bars of hives, or between brood boxes when two or more such boxes are present.

"It is very attractive to the bees. They consumed it all rapidly. Other products they can leave the outer-edges to dry out after only consuming the centre," Tweeddale says.

Initially the Taihape-based business trialled Ultra Bee in 3000 of their 19,000 hives two seasons ago.

"By mid to late October they were wanting to swarm all over the place, whereas at the other sites we were struggling to get enough brood to build up the weak hives and make them strong," the managing director explains.

With the improvement in those 3000 hives so obvious, last season Tweeddale's Honey used Ultra Bee right across their extensive operation, and not just in spring.

"Autumn has even more beneficial results, particularly hives that have been on mānuka. We tried it on 1000 hives on mānuka sites and those hives never went back in strength. We fed in January as the brood was coming back to five frames a hive, then by the time they were in their winter quarters in February and March the brood production was back to a normal seven frames."

Maintaining hive strength heading into winter is critical to set a business up for the following season and relying on natural pollen sources at that time of year can be risky, especially for hives on mānuka, the veteran beekeeper explains.

"Anyone who moves onto mānuka, if they don't get them back to clover or another pollen source in autumn, will have a huge decline in their bee production."

The benefit of getting quality protein, vitamins, lipids and minerals into honey bee colonies is all about aiding royal jelly production Tweeddale explains, and Ultra Bee is the best natural pollen substitute he has used in his long career.

"This product supersedes others I have used by a long, long way, in terms of helping produce royal jelly and getting that brood going. The bees consume it, and it is so nutritious that the young bees secrete royal jelly and get the larvae growing. That encourages the queen to lay more eggs. If your pollen is deficient, the queen will lay the eggs, but the bees will remove the eggs because there isn't the royal jelly to feed them. If you have nutritious pollen though, be it gorse or Ultra Bee, they secrete royal jelly and the hive goes forward in leaps and bounds," he says, adding "Whatever you are focusing on, that extra hive strength is a big plus."

Ultra Bee can be ordered through www.ecrotek.co.nz or larger commercial orders can be discussed by contacting Tom, ph 027 305 1222. ■

Ultra Bee
High Protein Pollen Substitute

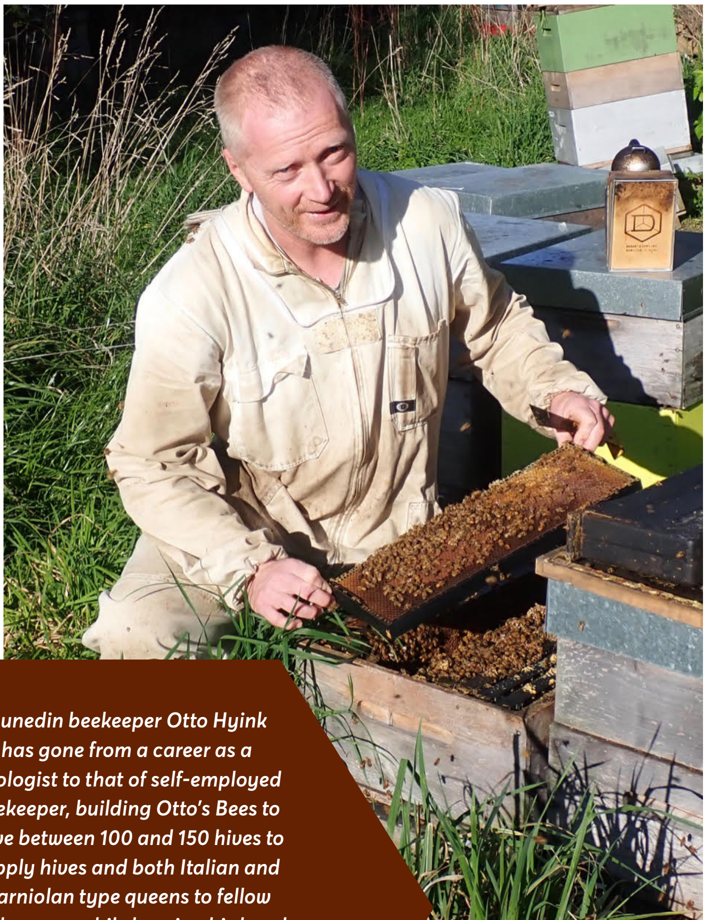
Ultra Bee pollen substitute patties are simple to administer to hives, placed on the top bar of colonies to give them the protein, beneficial vitamins, lipids and minerals honey bees need to thrive and raise brood when natural pollen is not available in sufficient quantities.

Intergenerational Commercial Beekeeping and Scientific Precision

In this industry it is unusual to come across someone with a lifelong knowledge of how commercial beekeepers think, as well as a scientific career where consistent scientific methodologies have been undertaken. Dr Otto Hyink in Dunedin is one such beekeeper-scientist though, with a passion for oxalic acid staple treatments. Maggie James learns how he has created his own niche in New Zealand beekeeping and shaped a lifestyle tailored to a young family's needs.

BY MAGGIE JAMES

An intergenerational beekeeper, Hyink has battled varroa and, in the last four years, much of his beekeeping energy has been dedicated to improving the use of oxalic acid strips in his 100-150 hives, and educating others on their use. That's far from all though as the scientist-beekeeper also pursues his interest in queen bee genetics within his breeding programme, encourages hobbyists and assists Otago University in beekeeping research.



Dunedin beekeeper Otto Hyink has gone from a career as a virologist to that of self-employed beekeeper, building Otto's Bees to have between 100 and 150 hives to supply hives and both Italian and Carniolan type queens to fellow beekeepers, while keeping his hand in with the scientific community.

OXALIC ACID STAPLE/STRIP MANUFACTURE & USE

"Resistance to proprietary miticides in New Zealand, as far as I am aware, has not been scientifically documented," Hyink says, prefacing his thoughts on the use of oxalic acid treatments.

"There is plenty of hearsay. However, overseas, I know that a mutation in mites that confers resistance to fluvalinate/flumethrin is confirmed. There is very strong selection pressure for mites to develop resistance to these products, otherwise they will die out. Consequently, these products should only be seen as a medium-term measure."

Hyink first started using oxalic acid staples for autumn treatments in 2019 and now that's all he uses to control *Varroa destructor* in his hives at Otto's Bees.

"I use my own homemade strips, and trust what I make myself more than anything I can buy. As a scientist I have made many experimental solutions, and this involves getting things working right. The solutions I make can always be trusted, and I feel totally in control of everything when doing this myself."

Whilst Hyink happily spreads oxalic strip manufacture advice (including on the ***Dunedin Beekeepers Club website***), he does not produce the product for sale. Three treatment rounds in a season work best for him – early spring, early summer, and early autumn.

"Strips stay in colonies for around two months. In stronger hives I sometimes add some new ones halfway through that period. The bees will often chew most of the strips away over this time.

My aim has always been to set up a composting spot for them, but I haven't got around to it yet.

"I do get hives that have too many mites, and these hives do take longer to bounce back. I ask myself why a particular hive is more susceptible to varroa, and do I want to keep that hive's particular genetics?"

Many beekeepers are annoyed that they can make their own oxalic acid treatments, yet there is no equivalent proprietary product on the New Zealand market.

"There appears to be variables as to how well oxalic acid strips work. I can give recipes, and beekeepers tell me they follow this to the letter, but they don't get my efficacy.

Dunedin beekeeper Otto Hyink uses only oxalic acid staples as treatments for his beehives, but warns it is not necessarily a suitable practise for all New Zealand beekeepers to control varroa.

"If a product works well in Dunedin, but, for example, not in Auckland, how do we make it work throughout New Zealand?" Hyink wonders.

"A proprietary product must do what the manufacturer says it will do, but there seems to be quite a variance in results. It costs quite a bit of money to make a proprietary product, then test, evaluate, and bring it to the market."

Compounding efficacy issues is the highly varied climatic conditions throughout the country. Subtropical areas may not have a brood break, whereas beekeepers in more southern areas will have good brood breaks, the Dunedin beekeeper points out.

Another major variable is the medium used and Hyink has found suppliers, such as Bunnings or Mitre 10, can change the products stocked without warning. Thus, the paper tape at those stores now differs from what was available when he first began making staples, and it does not soak the oxalic acid/glycerine solution as readily. Consequently 2023 has seen Hyink trialling various cardboard mediums.

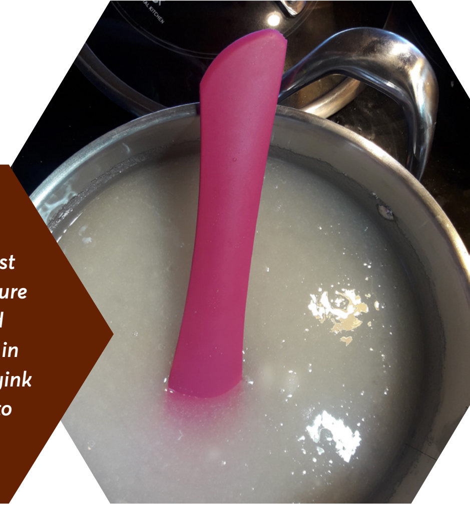
Having never used oxalic acid in towels or pads, Hyink doesn't comment on the practise. However, he has quite definite reasonings for using strips as his medium of choice.

"I wanted a treatment option that would work regardless of colony size and conformation. The staples or strips are a format that works for everything, whether it be a four frame nuc or a double brood box hive. I cannot really see the towels placed over the top of frames working well for the likes of nucs, or even a single brood box colony. I am a big believer in mite treatments needing to be in amongst the brood, where the mites are, and strips enable this."

PROPAGATING BEES

While the organic treatments clearly captivate much of Hyink's beekeeping attention, breeding queen bees is another passion. He runs his own breeding programme for both Italian and Carniolan strains, which are very much kept separate.

Carniolan queen cells are produced for the commercial sector, prized for their hardy traits. For urban beekeepers he recommends



Heating oxalic acid-glycerine solutions must be done correctly to ensure efficacy of oxalic acid staple/strip treatments in beehives, and so Otto Hyink is free with his advice to fellow beekeepers.

Italian stock. Previously he has used Betta Bees queens, but last season got a breeder queen from further afield.

"Temperament is king, particularly in a town environment where aggressive bees can be a nuisance for town people. I do one graft per week throughout the season for hobbyists, who can order and pick up a few day-10 queen cells every Thursday at 9am."

The queens, as well as some hive and nuc sales, provide income, while the honey crops in Dunedin can be fickle, due to variable weather, according to Hyink. For this reason, running full-depth colonies can be difficult. So, initially the business was all three-quarter depth boxes, but now he includes some full-depth, as they are more likely to be required by commercial customers.

The main spring pollen sources in the Dunedin area are gorse, hawthorn, and broom and there is no pollen dearth period. Hyink runs good, healthy beehives, and believes keeping yards smaller is crucial for this aim, particularly in autumn when robbing is a potential major problem. Therefore, the sole operator runs each apiary with a maximum of eight hives.

THE HYINKS' INTERGENERATIONAL BEEKEEPING HISTORY

Hyink has varied connections to the beekeeping industry and they shouldn't come as a surprise. It is something he has been involved in his whole life, following in the footsteps of his father Gerrit, who has been a commercial beekeeper for over 40 years.

The big step to becoming a Kiwi beekeeper began in 1982, when Gerrit Hyink brought his family from Holland to New Zealand for a fresh start. Thus, six-year-old Otto was uprooted to Katikati.

"Lacking English speaking skills, I had to learn quickly when thrown into the new environment… or sink!" he says looking back on those early years in New Zealand.

Hyink senior had been a hobbyist beekeeper in Holland, having learnt to keep bees from his father. In Katikati Gerrit went into a beekeeping partnership, since dissolved, with other Dutch immigrants. Currently Gerrit keeps 100-200 hives through spring, and up until last season ran his own RMP extraction plant at Katikati. Adding to the family beekeeping connection, Otto's brother Wouter is a full-time commercial beekeeper too, at Waikino, located between Waihi and Paeroa.

So, while beekeeping might well and truly be in the blood, it was not Otto Hyink's first career calling. Next month we will learn how study and science came first, but how it was his children who helped turn him toward launching Otto's Bees.

To discuss any aspect of this story with Otto Hyink, email otto.hyink@gmail.com

Engineering Solutions

The practice of genetic engineering, or modification, was recently thrust prominently into the public discourse when the National Party announced a desire to make its use more available to the science community. Science writer Dave Black assesses the situation with a beekeeping lens, detailing the potential for beekeepers and scientists to benefit from a loosening of restrictions around 'GE' rules and the current minefield of legislation, while also exploring public opinion on the much-debated subject.

BY DAVE BLACK

The microsporidians we know as Nosemas (now being referred to as Vairimorpha) come pretty near the top of the list of things we don't want in beehives, and the antibiotics that might once have held the tiny parasitic fungi in check can be both ineffective and harmful to humans. The search for a new way of protecting honey bees from the pest has tried a number of things.

Employing technology we already have, various new molecules have been suggested, some quite novel inorganic chemicals, and some repurposing of current bee treatments, like thymol and the various organic acids. Less potentially toxic are a growing list of natural extracts or dietary supplements – Beewell, Nozevit, HiveAlive, Nosetat Vitafeed, ApiHerb, to name a few, but it's not clear that they constrain the nosemas. The use of microbes and antimicrobials to either compete with, or mitigate the effects of, nosemas has so far also proved uncertain, let's say they're still 'under investigation'.

'Baggies' of sugar syrup, which include modified RNAi to hinder the reproduction of varroa, are being administered to beehives as part of an ongoing research project at Victoria University. The RNAi method, which is not deemed to be 'genetic modification' as constituted in New Zealand, is showing great potential.

NEW WAYS OF DOING THINGS

A rather modern approach has investigated ways to disrupt the protein-building nucleic acids that make up the genetic code of the parasite, causing a sort of internal sabotage. Arguably still 'chemistry', but just not as you know it. One method is being tried out here by Victoria University of Wellington using a 'baggie'[1] to deliver the active ingredient. RNA molecules (Ribo-Nucleic Acid) are used to convey information within the genetic 'machinery' about the construction of proteins and we now have the ability to simply feed one we made earlier in a sugar syrup and 'Hey presto…'

Well, of course it's not that simple, you have to figure out what the pest's proteins do and therefore what to target, you have to make sure nothing you value uses the same proteins (oops!), and these 'messenger' molecules are naturally and rapidly degraded. It has been shown to work, though whether beekeeping could afford the price of a continuous supply of short lived, state-of-the-art medicines is not in doubt, is it?

There is new technology around of course. There is a clever way to achieve the same thing developed (and patented) by a team working with Nancy Moran in North Carolina, one of about half-a-dozen such applications in recent years[2]. In this case the scientists co-opted bacteria that normally live in the honey bee gut (the symbiotic bacteria *Snodgrassella alvi*) and re-engineered its genetic code to produce the RNA molecule they needed to ensure the pest's self-destruction. The bacteria now produce a constant supply of the necessary molecule, and better still, the bacteria reproduce with the new machinery, colonise 'new' honey bees, and potentially neighbouring hives, all by themselves. Manufacturing and supply in one tiny package.

So, we could optimistically say genetically engineered honey bee gut symbionts have the potential to control all sorts of bee pathogens, including nosema and varroa, in which case, what are we going to do about that? New Zealand has heard more than usual about the 'potential' of genetic engineering[3] lately. In the US and Canada this treatment, already with patents granted, might not raise any eyebrows, but here (and in Europe) the situation is not as straightforward. There has been a similar, but different, case here to illustrate the potential issues at play…

TOO MANY HOOPS?

In 2018 a Research Technician from Landcare Research applied for a determination from the Environmental Protection Authority (EPA) as to whether an organism they had been working with, *Caenorhabditis elegans*, was a genetically modified organism, given that they had used a synthetic RNA to alter the expression of a protein it produces[4]. Landcare argued it was not. The first decision the EPA considered was whether (legally) it was an 'organism', and, if an '*in vitro*' (lab) technique was being used, was it acting on 'genetic material'? The judgement was that the organism was *not* genetically modified, essentially, RNA is not part of that organism's genome, the protein expression was 'transitory', and the organism's genome was actually unaltered. The decision was rapidly appealed and then reconsidered after the submission of more evidence, but eventually confirmed three years later in 2021.

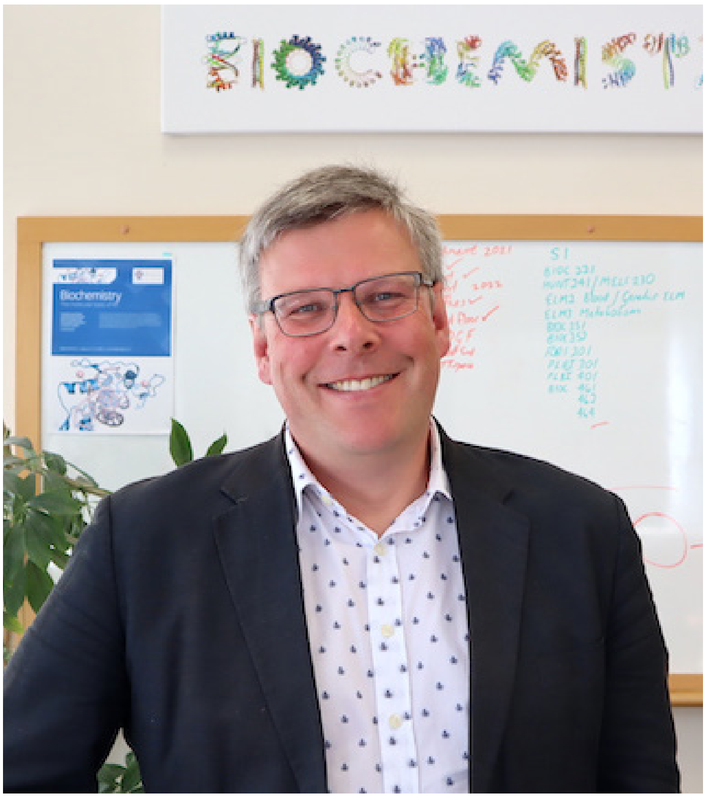
Since then most (but not all) people who follow this subject have started to think the legislation we use to manage the issues surrounding our ability to engineer genetic modifications is no longer fit for purpose. At the time it was created, we literally had no idea what we [would be] talking about! The main piece of legislation enacted, the Hazardous Substances and New Organisms Act 1996, is approaching its 30th birthday and nestles amongst a suite of other Acts that govern biosecurity, food safety, animal welfare, conservation, resource management, veterinary medicines, and wildlife, to name a few. Nothing happens in isolation.

AN EXAMPLE

Imagine you are the 'inventor' of some useful honey bee gut bacteria or pest-killing molecules and have leapt all the Intellectual Property hurdles. You're ready to have all the following decisions contested. You will be looking for EPA approval (see above, your case might be different) for the new organism (HSNO Act 1996), your lawyers will in all probability be checking compliance with (for animal ethics approval) the Animal Welfare Act 1999, a pest management plan ('cos Resource Management Amendment Act 2005, Biosecurity Act 1993, Conservation Act 1987), the Imports and Exports (Living Modified Organisms) Prohibition Order 2005 and the Cartagena Protocol. Prepare your risk assessments for food safety, apicultural industry, and trade (Agricultural Compounds and Veterinary Medicines Act 1977, the Food Act 2014 shared with Australia, and the Animal Products Act 1999), and all of these don't necessarily align with the laws of our trading partners or the Treaty of Waitangi partnership. Created in different circumstances and time periods they have inconsistent definitions of words like *genetic modification*, *animal*, or *pest* too.

TOOLS, OUTCOMES AND MAN V NATURE

The next problem we had was a bit of a strategic blunder. For Genetic Modifications (GM, and now Gene Editing - GE) we decided to regulate the tools, rather than the outcome, and now we have very different tools. We have processes that are regulated very differently, but produce the same outcome. More than that, especially with the newer 'tools', in some cases the 'outcomes' are not distinguishable from natural changes, making the regulatory provisions unenforceable. The example often provided is the



Currently, in New Zealand, the tools leading to genetic modification are regulated, but not the outcomes. Professor Peter Dearden of Otago University, a geneticist with a focus on bees, believes that needs to change, and he is not alone.

absence of regulation for some 'conventional' plant breeding techniques, like irradiation or chemical mutagenesis, which speed up the production of new plant variants (i.e. 'new organisms'!) that can be used for selection and cross-breeding.

For some 'natural' means unmodified by 'Man' (even if 'Man' is part of Nature), while other people regard 'natural' as something similar, or the same, as something from Nature. In Australia, Food Standards Australia and New Zealand (FSANZ) already evaluate food products using the second definition, the emphasis clearly on the product and not on the manipulation. They have so far approved soyabean, maize, canola, wheat, potato, and lucerne developed with a variety of 'gene technologies' conferring herbicide and pest tolerance, or enhanced product characteristics[5].

A PUBLIC 'LICENCE TO OPERATE'

The noisy actors making the more public case for a review of the regulations, to put it simply, are more concerned that we are missing an opportunity to make more money. That's quite a different outcome, but still an outcome, and, if we can learn anything from the studies about public attitudes to genetic engineering, it's that the outcomes matter.

The surveys undertaken come up with a far more nuanced views about GM than a simple 'for' or 'against'. For example, it matters if the work is being undertaken with our Predator Free 2050 goals in mind, it matters if it's a critical health or biosecurity issue. If we are going to review our legislation and take advantage of new technical advances that will 'save our bees' or 'save our trees', or whatever, what will matter in the new legislation is why we are changing things; what we value and what we aspire to do. Who are these new opportunities for? It's not about the technology; it's about whether we allow new technology to be used to perpetuate inequity across both communities and commerce, or invest it in a sustainable future fit for all of us.

Dave Black is a commercial-beekeeper-turned-hobbyist, now working in the kiwifruit industry. He is a regular science writer providing commentary on "what the books don't tell you", via his Substack Beyond Bee Books, to which you can subscribe here.

References

1. Baggie; more common in N. America, a plastic feeding bag or pouch containing liquid sugar
2. Qiang Huanga, Patrick J. Lariviere, J. Elijah Powell, and Nancy A. Moran. Engineered gut symbiont inhibits microsporidian parasite and improves honey bee survival. PNAS 2023 Vol.120 No.25 https://doi.org/10.1073/pnas.2220922120
3. Genetic Modification (GM) is achieved using Genetic Engineering (GE), that employs tools/techniques like Gene Editing (GE). These are used interchangeably as both nouns and verbs everywhere. Confused at all?
4. EPA, APP203395 2018.
5. John Caradus (2022): Impacts of growing and utilising genetically modified crops and forages – a New Zealand perspective, New Zealand Journal of Agricultural Research, https://doi.org/:10.1080/00288233.2022.2077380.

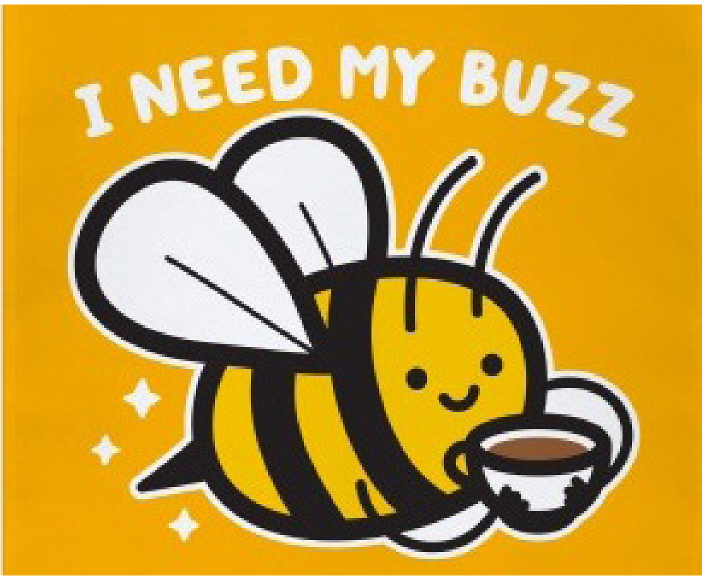
‘Gimme a Feeder of Joe’

BY JOHN MACKAY

New Zealand’s rapid adoption of the coffee culture must be unparalleled. It doesn’t seem so long ago that if you wanted coffee, your options were ‘black or white’. ‘Single shot Americano with hot water on the side’ seemed the realm of films (we laughed at the LA Story coffee piece* in the early 90s, but didn’t know why... or, maybe that was just me?).

Well, it turns out that we’re not the only ones who enjoy caffeine! In the last decade, various reports have shown caffeine to be attractive to bees, with the foragers actively seeking out plants with low levels of caffeine in their nectar and pollen, over those without. Yes, coffee plants, but also others such as citrus.

Memory, learning behaviours and foraging activities are all increased in honey bees upon ingesting caffeine, not always to their benefit if they target low-value (but caffeinated!) nectars. Viruses like Deformed Wing Virus (aka *Hive Killer 1*) can be mitigated by the prior boosting of immune-related genes thanks



Bees like caffeine … who knew?

to caffeine. Not only viruses, but also nosemas (now called vairimorpha) can be reduced in spore numbers.

In a current study (Motta et al. 2023) they are looking at the effects of caffeine in protecting against a bacterial pathogen called *Serratia marcescens* – a bacteria found in high levels in dead bees from hives lost over winter – as well as associated varroa. The authors looked at whether various concentrations of caffeine in the bees' syrup affected their gut microbes, before feeding the bees caffeine, plus the Serratia pathogen. They showed that the pathogen – as expected – shortened the bees' lifespan with no or low caffeine. However, when higher concentrations of caffeine were fed to the bees, the pathogen had little effect on the bees' lifespan, compared to the control bees without the pathogen (and regardless, whether or not the non-pathogen control bees were fed caffeine).

No studies have been done to see whether we have this pathogen in New Zealand – and while it may prove beneficial against other bacterial pathogens (as it does for viruses and nosemas/vairimorpha) further work is needed to see whether brood diseases (often caused by bacteria) can be helped by metabolites such as caffeine.

But how much caffeine are we talking about? I'm not suggesting to try this, but the caffeine concentration that showed positive effects works out to be approximately a 50% espresso solution…. or roughly all your instant coffee brew!

For those wondering about the LA Story reference, the film is from 1991 with Steve Martin – the coffee piece is here:* ***www.youtube.com/watch?v=eqqXCiPJTXE*

John Mackay is a molecular biologist and the technical director of Gisborne-based lab dnature diagnostics and logistics, as well as a hobby beekeeper.

Reference: Motta EVS, Arnott RLW, Moran NA. 2023. Caffeine Consumption Helps Honey Bees Fight a Bacterial Pathogen. Microbiol Spectr. journals.asm.org/doi/full/10.1128/spectrum.00520-23

What Should Keep Voters Awake?

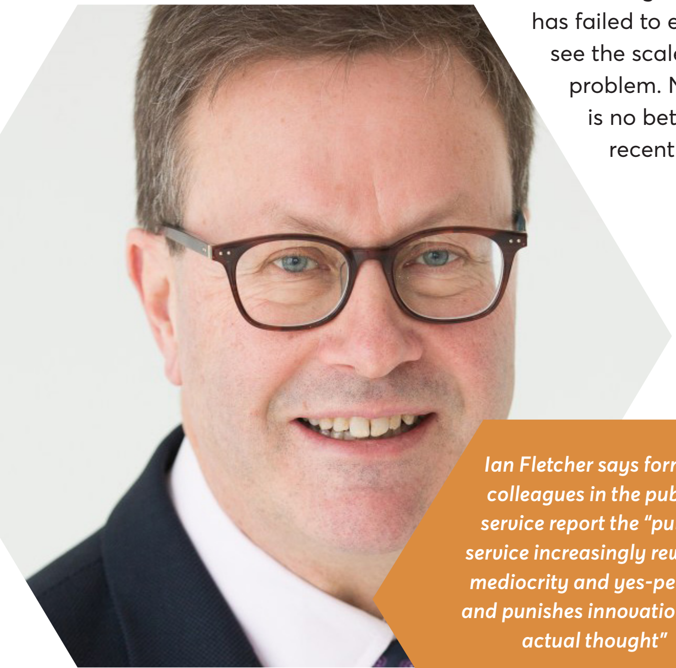
BY IAN FLETCHER

With the election looming, I thought it might be helpful to set out some of the big issues voters should be thinking about. Politicians should be thinking about them too, but I'm not optimistic. It's not too late, but there are real crisis points ahead.

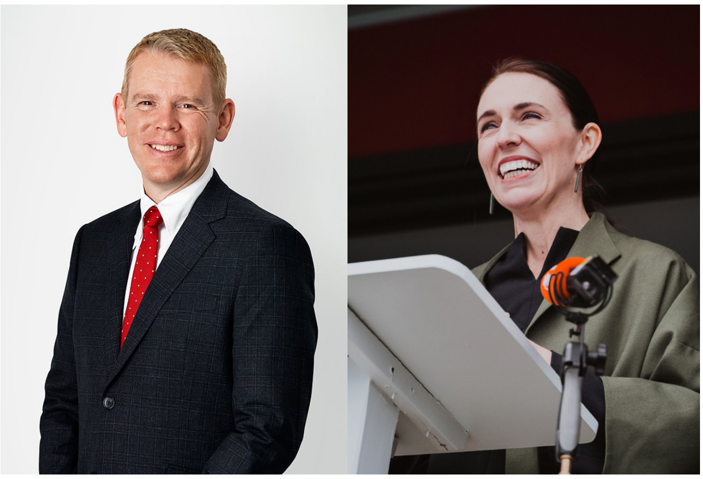
First, the obvious stuff:

Domestically, public services are a mess. The one shared characteristic is that they can't attract and retain people. The health system and schools are the obvious pressure points. (The really immediate crisis is in the armed forces, which are arguably not needed until it's too late. But they serve as a warning). Some of this is money. Some of it is the lure of better paid – and often just *better* – jobs in Australia. But much of it is really shockingly poor management. The health system and the recent-merged polytech sector are stand-out examples of botched changes that harm the system.

Housing was the core issue the Ardern-Hipkins governments were elected to solve. Fail. There seems to have been the fundamental inability to see that a policy of encouraging immigration (to juice up the economy and ease the skills shortages) necessarily means you have to build lots and lots more houses. The government has failed to even see the scale of the problem. National is no better: their recent urge



Ian Fletcher says former colleagues in the public service report the "public service increasingly rewards mediocrity and yes-people, and punishes innovation and actual thought"



The 'Ardern-Hipkins lot' get a failing grade from Ian Fletcher as the Labour Party nears the end of two terms in office, but does their opposition even understand the questions? he wonders.

to go backwards on medium density housing in Auckland will mean there will not be a market solution, and the supply/demand mismatch will stay. Ordinary people will suffer. It's avoidable, and thus utterly unacceptable.

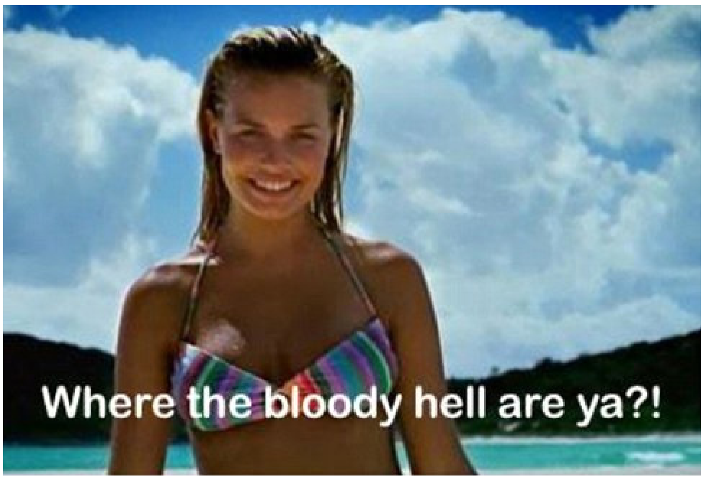
Crime is a new, big issue. There are two strands here – the arming of gangs (and their brazen willingness to use weapons), and the emergence of incompetent but dangerous teenage criminals. Some of the gang conduct has been accelerated by criminal deportees from Australia. The teenage crime wave seems to be a toxic brew of social media, drugs and a complete lack of meaningful sanctions. In both cases the police have been caught flat-footed. A much tougher attitude to guns, and a serious move to stop children having smart phones will be the eventual answer (the US Surgeon-General has already pointed to the harmful link between teenagers and social media). But I doubt New Zealand's political parties really have the stomach for either move, until things get much worse, as they will.

Christopher Luxon leads a National Party which Ian Fletcher is "utterly unconvinced" understands the questions they need to answer on behalf of New Zealanders.

But behind those headlines are three much more serious issues.

Firstly, Inequality. I've written before about the need for higher taxes, and the growing economic evidence (from the US Federal Reserve, not known for its socialist views) that low taxes on wealthy people contributes directly and unavoidably to the housing crisis. In New Zealand the debate is around tax policy and is a race to agree to do as little as possible to change things. The result is growing inequality, and the emergence of a few super-rich, but also the relative impoverishment of the middle of society (the nurses, teachers, tradespeople), and the absolute immiseration of the very poor. Unequal societies do badly. We harm ourselves. Equality matters at the top, as well as at the bottom, of the income pyramid. Just ask Marie Antoinette.

In New Zealand's case, Australia beckons. It has higher taxes, a better standard of living, and a government determined to make it as attractive as possible for educated and motivated New Zealanders. Either we solve our inequality problem (by at least taxing to Australian levels), or Australia will solve it for us through a skills crisis that never goes away. Against that analysis, I have to write a sentence I never thought I would ever utter: The Māori Party's tax policy is quite good.



Australia is an attractive proposition to Kiwis for both work and play, and their government is determined to continue to keep it that way. New Zealand will have to fix its inequality problem to counter, says Ian Fletcher.

Secondly, a self-imposed slow-moving constitutional crisis. I started out thinking the debate over co-governance with Māori was a distraction. I have come to see it as a serious error by the current government, as for many people it entrenches the sense that the legitimacy of our democracy can be given away to – as they see it - placate a minority.

In a democracy there need to be rules to slow down the majority from running away with the rights of any minority (so we have proper courts, and we ought to have a proper Upper House of Parliament). But it can never be right to appear to entrench the minority so the majority view is permanently thwarted (even if the reality is different – appearances matter). I've expressed this very carefully because this is a sensitive debate, and because many Māori suffer serious actual discrimination which is intolerable, and a disgrace on our society. But the solution – whatever it is – needs more thought and a lot more explanation than the concept of co-governance as it has emerged.

And finally, government (and public service) incompetence. The excellent American philosophical writer Philip Bobbit once said, in a moment of clarity, that governments need legitimacy (see above) and competence. My dealings with MPI, the health system, and others suggest New Zealand's government is long on complacency, but woefully short of competence (and humility). If ex-colleagues' comments to me are anything to go by, the core public service increasingly rewards mediocrity and yes-people, and punishes innovation and actual thought.

I haven't mentioned foreign policy. It's a mess, with war potentially looming in the North Pacific, a really major demographic and economic crisis in China (our biggest market), and a very real chance of both a Russian victory in Ukraine (face it, it's Putin's to lose) and a Trump victory in the US. Too much to expect Wellington to have given that any thought at all. Thank God the Aussies will save us.

Overall, it's a failing grade from me for the Ardern-Hipkins lot. But I have to say I'm utterly unconvinced that the other lot even understands the question, let alone has a fair stab at an answer. Einstein said that it was much more important to really understand the question than to know the answer. Sadly, our politicians don't even know there is a question.

Ian Fletcher is a former head of New Zealand's security agency, the GCSB, chief executive of the UK Patents Office, free trade negotiator with the European Commission and biosecurity expert for the Queensland government. These days he is a commercial flower grower in the Wairarapa and consultant to the apiculture industry with NZ Beekeeping Inc.

"The Māori Party's tax policy is quite good" … something Ian Fletcher never thought he would say, while also expressing concerns about their co-governance agenda.

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