ISSUE 80, MARCH 2026

Apiarist's Advocate

News, Views & Promotions – for Beekeepers – by Beekeepers

"USA! USA!"

Mānuka honey exports to America hit record levels

Mānuka Trade at Record High as Exports to US Surge 1,000t

New Zealand retail pack monofloral mānuka honey exports to the United States climbed 54.1% to 2,862 tonnes in calendar year 2025, an increase of 1,004t over the year-before volume. The surge into the US lifted global exports in this category to an annual record 6,999t and contributed most to matching the previous record export volume of 12,732t set in 2020 for all honey types. Bruce Roscoe presents an analysis of the trade data and reports on a survey of US consumers that shows only 30% recognize New Zealand as the origin of mānuka honey.

BY BRUCE ROSCOE

Move to centre stage, US. Take a back seat, China. That is an aerial view of the theatre of New Zealand's mānuka honey trade. It was by design. The UMF Honey Association had prioritised the US as the market that offered most promise for mānuka export growth. Honey packers in agreement crisscrossed the Pacific, fronting trade shows and presentations. Some stay-at-home brands have appeared to fizzle.

The US China role reversal has been extreme. In the six years to 2025, exports of monofloral mānuka product to the US grew nearly threefold to NZD112.1m while those to China grew 3.4% to NZD44.1m. (Counting begins from 2019 because that is the first full year for which export statistics for monofloral and multifloral mānuka honey are available).

Tables 1-2 show the 2019-2025 trend in the rising US share in volume and value for monofloral mānuka honey exports. A comparison between 2019 and 2025 prices for the top 10 markets is shown in Table 3. By volume the US share has doubled to 40.9% and by value almost doubled to 33.4%.

Untamed volume growth comes at a low price. At NZD39.18 per kilogram, the FOB export price for the US is second lowest to Australia (NZD38.17) among the top 10 markets.

In the retail pack multifloral mānuka category, the US again is the standout. Volume in this category shipped to the US pole-vaulted 4.4x to 769t from 2019-2025 while share expanded to 31.6% from 10.0%. Value grew to NZD18.3m from NZD6.3m. The FOB price at NZD23.85 for 2025 was seventh-lowest among the top 10 markets and a 33.4% decline on the NZD35.84 recorded in 2019. (See tables 4-6).

Other export markets have a lot to write home about, too. Again in the retail pack monofloral mānuka category, volume to Japan lifted 29.2% to 685t; United Kingdom, 23.0% (565t); South Korea, 50.2% (290t); Netherlands, 16.1% (166t), and Canada, 93.6% (100t). The per kilogram FOB values for Japan (NZD51.66), UK (NZD56.30), and South Korea (NZD54.22) exceeded that for the US by 31.6%, 43.4%, and 38.1%.

The uptick in the UK will go some way to mitigate the value lost to bulk monofloral mānuka exports to that market. But the UK habit to pack from low-cost raw material may be hard to break. Bulk exports in this category to the UK grew 10.1% to 846t on a 12.8% value decline to the near subterranean NZD14.94 per kilogram. That volume increase against value decline continued a deep-set trend. The 2024 bulk monofloral mānuka volume shipped to the UK increased 7.1x to 718t from the 2019 volume of 107t on a

Table 1: Retail Pack Monofloral Mānuka Honey Export Volume Trend (a)

	Total	US	Share(%)
2019	4,095	828	20.2
2020	5,076	1,307	25.7
2021	5,384	1,647	30.6
2022	5,477	1,663	30.4
2023	5,410	1,527	28.2
2024	5,592	1,857	33.2
2025	6,998	2,860	40.9

(a) Calendar years; tonnes

Table 2: Retail Pack Monofloral Mānuka Honey Export Value Trend (a)

	Total	US	Share(%)
2019	225.3	38.6	17.1
2020	302.4	57.9	19.1
2021	303.5	71.6	23.6
2022	291.4	76.4	26.2
2023	289.3	67.0	23.2
2024	297.0	80.8	27.2
2025	335.1	112.1	33.4

(a) Calendar years; FOB NZD millions

53.4% price collapse to NZD17.13 from NZD36.74 per kilogram.

Bulk monofloral mānuka exports to Germany leapt 47.2% to 400t while retail pack monofloral mānuka fell 33.3% to 277t. Germany at NZD34.41 per kilogram returned more than double the value of the UK bulk market. Germany and UK absorbed 71.1% of total bulk monofloral mānuka exports.

BACK TO THE FUTURE

None of the data cited in this report represent the sale of mānuka honey in any market. Packers have exported the volumes only in anticipation that they will meet expected demand. If the demand does match the supply, where does that leave the industry and its unknown inventory quantity? In a way, the industry has run a marathon in order to stand still. The average FOB price of NZD37.65 per kilogram for all honey types in 2025 is virtually unchanged from the NZD37.79 recorded a decade earlier in 2016.

Overlay a list of the largest economies by GDP (gross domestic product) on the top export markets for mānuka honey and the top five are the same countries, with the exception of India. That may change as the FTA (free trade agreement) with the world's fifth-largest economy delivers on promise. Move UK up one place to fifth, for now. But the culturally closest markets — exemplified by Australia, UK, and US — return the lowest value. Reversing the commoditization of mānuka may require the development of markets outside comfort zones.

Table 3: Retail Pack Monofloral Mānuka Honey Price Comparison (a)

	2019	2025	% chg. 2025 vs. 2019
US	46.56	39.18	(15.8)
China	54.55	50.55	(7.3)
Japan	63.59	51.66	(18.8)
UK	43.00	56.30	30.9
Australia	56.50	38.17	(32.4)
South Korea	69.96	54.22	(22.5)
Germany	74.87	64.15	(14.3)
Singapore	48.19	40.13	(16.7)
Netherlands	51.77	42.76	(17.4)
Canada	46.05	48.66	5.7
All markets	55.02	47.89	(13.0)

(a) NZD per kilogram (FOB). Calendar years. **Notes:** 2019 is the first year for which monofloral mānuka honey export statistics are available. Top 10 markets sorted by volumes for 2025.

CONSUMER RECOGNITION

Only 30% of US consumers can recognize NZ as the country of origin of mānuka honey, according to a survey commissioned by the Mānuka Charitable Trust (MCT).

MCT has presented the survey to the United States Patent and Trademark Office (USPTO) in support of its 11 Dec. 2024 application for a certification trademark for MĀNUKA

accompanied by a tohu in the shape of a stylized letter M.

The survey, dated 31 Oct. 2025, was conducted by Harper Litigation Consulting and Research LLC of Texas. It is printed on pages 61-141 of the 141-page 10 Dec. 2025 filing by MCT with USPTO and billed as an "Expert Report".

The USPTO examiner may find that the survey data contradict the report's conclusion. The report states: "The study found that Manuka honey has 53% awareness and, of those, 30% associated it with coming from New Zealand". It then concludes: "Based on the survey results, a significant percentage of consumers believe Manuka honey comes from New Zealand..."

Citing the survey, MCT in its filing states: "…the term "MANUKA" is viewed by US consumers as referring to honey that is sourced in New Zealand…"

That ambitious interpretation is tempered by the finding that 35% did not know the country of origin. Moreover, 33% identified countries other than New Zealand as the origin (Australia, Hawaii, Japan, Alaska).

TEQUILA SUNRISE

In the same USPTO filing, MCT detours south of the border to Mexico where it learns that USPTO has registered Tequila as a certification trademark. MCT believes it could "certify" mānuka honey in the same way as Consejo Regulador del Tequila, A.C. certifies that Tequila is distilled from the blue tequilana weber variety of agave plant.

Although MCT's US trademark application appears buffeted by trade winds blowing across the Pacific from the northeast, the surging mānuka honey volumes entering the US are clearly encouraging local companies to ride the waves and attempt to trademark "manuka" in unbecoming ways.

It is part of MCT's mission to oppose such attempts. Following the 5 January opposition filed against Caravan Honey Company's "THE MĀNUKA EFFECT", which is used to market a suite of cosmetics that contain mānuka honey supplied by Comvita, MCT on 19 February filed two further oppositions — one against "BETTER THAN MANUKA" (MDM Wound Ventures, Inc., TX) and the other against "MANUKAMEND" (Allen Kamrava MD MBA Inc., CA).

Note – All export statistics referenced in the text and tables of this report are sourced from the Infoshare website of Statistics New Zealand.

Bruce Roscoe is a Japan-resident researcher and former foreign correspondent and securities analyst.

Table 4: Retail Pack Multifloral Mānuka Honey Export Volume Trend (a)

	Total	US	Share(%)
2019	1,756	175	10.0
2020	2,332	215	9.2
2021	2,434	394	16.2
2022	1,934	363	18.8
2023	1,875	246	13.1
2024	1,967	437	22.2
2025	2,436	769	31.6

(a) Calendar years; tonnes

Table 5: Retail Pack Multifloral Mānuka Honey Export Value Trend (a)

	Total	US	Share(%)
2019	51.7	6.3	12.1
2020	79.6	5.4	6.8
2021	68.8	9.6	14.0
2022	54.4	10.0	18.3
2023	44.6	6.4	14.4
2024	45.6	11.1	24.3
2025	62.0	18.3	29.6

(a) Calendar years; FOB NZD millions

Table 6: Retail Pack Multifloral Mānuka Honey Price Comparison (a)

	2019	2025	% chg. 2025 vs. 2019
US	35.84	23.85	(33.4)
UK	25.06	22.69	(9.5)
Australia	24.96	18.04	(27.7)
China	34.86	26.07	(25.2)
Germany	52.76	33.94	(35.7)
Japan	36.57	30.91	(15.5)
Singapore	27.15	22.35	(17.7)
Taiwan	55.32	39.55	(28.5)
UAE	59.92	25.42	(57.6)
South Korea	37.38	61.81	65.4
All markets	29.44	25.46	(13.5)

(a) NZD per kilogram (FOB). Calendar years. **Notes:** 2019 is the first year for which multifloral mānuka honey export statistics are available. Top 10 markets sorted by volumes for 2025.

MCT Stands by Caravan Opposition

Despite a January request from Comvita to withdraw opposition to a Caravan Honey Co US trademark application for "THE MĀNUKA EFFECT", The Mānuka Charitable Trust's opposition stands, as of February 27. The Caravan Honey brand Aunu uses "THE MĀNUKA EFFECT" to market its skincare range, whose ingredients include Medihoney® sourced from Comvita. The Trust's Legal Advisory Committee was to further discuss the case at a scheduled February 10 meeting. They have not responded to requests for an update following that meeting, but the continued opposition speaks for itself. The Trust has previously stated, 'Decisions to maintain or withdraw an opposition are made only once the Legal Advisory Committee is satisfied that the mana, mauri, and long-term value of mānuka are appropriately protected.'

The US Honey Market Through the Eyes of Sellers

With the US market leaping into the lead as the largest consumer of New Zealand mānuka honey, we ask some of the country's largest honey exporters, along with the UMF Honey Association (UMFHA) who promotes Kiwi beekeepers' most valuable product, what is driving the growth and if it is likely to continue.

UMFHA contend "there is no single answer" to the surge in demand for mānuka honey coming from the US, one major seller points to the increasing role in AI to help educate consumers, while Comvita have a "club-retail" partnership to thank for a huge sales boom. There is also little doubt price competition, particularly on both the physical shelves of major wholesale, department or grocery stores, or through online retailer Amazon, is helping make mānuka honey more accessible to the US consumer and has thus helped clear New Zealand's honey glut.

UMFHA have promoted the potential of the US market to their members for years now, and strived to educate the American market as to the benefits of authentic mānuka honey. Marketing manager Campbell Naish says multiple exporters are experiencing sales growth after spending years "building relationships, partnerships, promotion, adapting and innovating product and educating the market".

The locations of almost 5000 Walmart stores across the USA. Amazon.com recently dethroned Walmart as the leading US retailer, and both online and 'bricks and mortar' retail have helped turn the US market into the largest of New Zealand's mānuka honey export recipients.

Traditionally the west coast (i.e. California) and north-east of the country were the strongholds for mānuka honey sales, but that is expanding UMFHA believe. Costco has more than 600 "warehouses" spread across the States, while Walmart has approximately 5000 stores dotting the country and Amazon is the world's largest online retailer, headquartered in Seattle, Washington.

Both honey sales per head of capita and the health and wellness foods category are growing apace in the US, with natural and organic food sales surpassing USD300billion in 2024, double that of a decade prior.

"Compared to older, more established markets the per-capita consumption of mānuka honey in the USA has grown significantly and is catching up with some major markets," Naish says.

With 8.75g of mānuka honey consumed annually per capita in the USA and 20.75g in the UK in 2025, "there appears to be room for growth to continue in the world's biggest economy," he adds.

ARTIFICIAL INTELLIGENCE, REAL RESULTS

For mānuka honey giant Egmont Honey, the 'Big-Box' sellers of Costco Wholesale and Walmart 'hypermarket' stores are crucial to sales, along with supply to the country's second largest grocery chain, Albertsons. However, it's not all bricks and mortar selling and chief executive James Annabell says if sales from online seller Amazon are aggregated then they too are a significant channel for New Zealand's mānuka honey.

AI is also playing a role in helping drive sales, particularly to higher mānuka honey grades, Annabell believes.

"AI is a very good tool for our industry. Potential customers, wanting to know what the benefits of mānuka honey are, can chuck that into ChatGPT or Google AI and it will give you all of those. We are seeing a massive shift globally to the higher grades again. People are looking for efficacious honey and that is where we want to be. I think AI is telling people the real efficacy of mānuka honey is at 10+. So, I think the way in which people are researching consumer goods is helping us," Annabell says.

COMVITA'S SECRET WEAPON

Comvita recorded sales of NZD53.7m into "North America" in CY2025. While this is a larger area than just the dominant US market, it can safely be assumed they contributed around 40% of New Zealand's total NZD130.4m combined monofloral and multifloral mānuka honey exports to the US.

When announcing their return to half-year profit in February, Comvita chief executive Karl Gradon spoke regularly of their "club-retail partnership". While not willing to say it publicly, this is surely their sales through membership-only warehouse chain Costco.

"We are delighted with the results from our club-retail partnership in North America," Gradon says.

"In North America … it is absolutely clear that they are now the world's largest mānuka honey market, and Comvita has been part of this growth through its club-retail relationship. This relationship has delivered significant sales growth and also an increase in net contribution for the half year."

While mānuka honey sales boom, that "net contribution" tells the other side of the story. Effectively a measure of margin gained on sales, Comvita's half year presentation showed a net contribution percentage slide from 33.7% in the same period in 2023 to 9.7% in the latest figures. The export stats tell a similar

story, with packed monofloral mānuka per-kilogram values to the US at NZD39.18 sitting above only Australia (NZD38.17) amongst New Zealand's top 10 export markets, a 15.8% decline since 2019. It's a similar story with packed multifloral mānuka where, once again, the US beats out only Australia for value in the top 10 and in the past year alone has dropped 33% to NZD23.85/kg.

"…the average price per kilo has declined, reflecting surplus supply, increased competition, and ongoing commoditisation, particularly at the lower UMF end of the honey-in-a-jar segment," Gradon says.

Both Comvita and Egmont supply UMF12+ mānuka honey to Costco and these are understood to be big sellers. Part of Comvita's growth strategy appears to be to look to even lower grades in the US though.

"We firstly need to grow share and volume, particularly in the lower UMF categories, through market diversification, distribution extension, and customer and business partnerships. The USA continues to be a key market for us, and we are focused on both online and offline growth, alongside diversification in these channels," Gradon says.

Though China has taken a back seat to the US in terms of the global ranking of the mānuka honey market, Chinese interests remain in the front seat of both Egmont Honey and Comvita, with the largest shareholders of both companies Chinese.

CAN IT LAST?

With big volumes hitting the US market at lowered prices, the logical question to ask is, can the market be sustained as New Zealand's honey inventory depletes? Much of Comvita's honey was sold following huge inventory devaluation. Sourcing new honey at higher values could supress profits for them and others.

"If the honey is available then demand is there," Annabell says from Egmont's perspective.

"Again, it is the whole thing around sustainability of pricing of product. Companies like us who have a strong supply chain and production base, arguably the bigger guys, are still going to be able to supply the retailers."

However, there are potential "headwinds".

"If our input prices all of a sudden jump 25 percent, there is no way I can get that through to a retailer. We end up in tough positions," Annabell says.

While the US has been a focus for UMFHA and many of their members, the group says the industry needs to be wary.

"It is important for the industry to continue developing value in mature, emerging and new markets simultaneously to maintain diversity and reduce risk of market dependence," Naish says.

UMFHA say honey production volumes will play into the sustainability of the US mānuka market, along with consumer confidence which could be impacted by mid-term elections, but "the primary pillars of category growth remain".

"Interest in honey, natural health trends, increased distribution, awareness and understanding," Naish lists, adding, "while it is impossible to predict exactly what will happen it appears likely that demand will continue to grow in the near term."

HONEY NEW ZEALAND

We want to buy all your honey

CONTACT US NOW

honeypurchase@honeynz.co.nz

CASH TERMS AVAILABLE*

*Cash on delivery & subject to test results

Industry Body Constitution Still a Work-On

A month after proposing to release a potential new beekeeping industry body constitution "in February and hopefully early February", Apiculture New Zealand (ApiNZ) and New Zealand Beekeeping Inc have yet to do so and continue to fine tune.

Some details of the commercial-beekeeper-centric proposal were given to ApiNZ members at their SGM on January 28, but a more detailed blueprint of how a united industry body might look remains in the works. The plan is to release it soon, to allow consultation with the industry and fine-tuning.

While diversions to contribute time towards the yellow-legged hornet incursion response have delayed efforts to sculpt the bones of the new industry body, ironing out challenges inherit in transitioning multiple groups into one, such as differing opinions on its best makeup, are likely also contributing to delays.

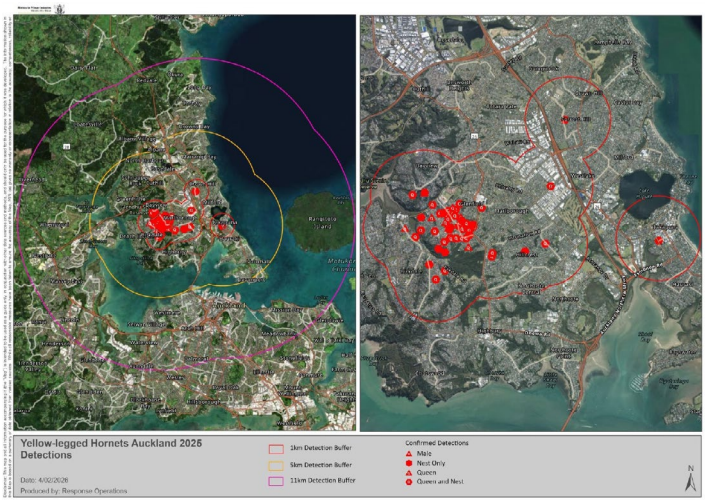
Hornet Response Continues on North Shore Only

Beekeepers are wary and Biosecurity New Zealand (BNZ) has been out in force in certain Auckland suburbs over the past four months as a yellow-legged hornet incursion response has been implemented. So far hornets have been found in Auckland only and on February 4 BNZ presented a webinar to approximately 160 beekeepers to detail the response thus far, from nest removal and radio tracking technology, to what beekeepers can do to help as summer winds into autumn.

Nests of the hornet, which can devastate honey bee colonies and prior to June 2025 had never been sighted in New Zealand, continue to be found on Auckland's North Shore. As at March 2 a total of 81 nests had been located and destroyed in three, over-lapping, surveillance zones extending out 11km from 'hot spots'.

Has the hornet moved further afield? BNZ don't believe so, but there has been no trapping outside of Auckland conducted by the Ministry for Primary Industries department.

There is now a race to discover and destroy as many nests as possible as the pest's natural lifecycle turns to creating many queen hornets to first mate in late summer and autumn, and then hibernate – and thus be much harder to locate – over winter.



Details of Biosecurity New Zealand's yellow-legged hornet finds and surveillance zones on Auckland's North Shore.

"We believe there is much work to come, but that eradication is certainly feasible here," BNZ say.

"We are cautiously optimistic. Given the number of nests we are finding, and the fact we are still in a confined zone we believe we have a good chance of eradication."

KEY TAKEAWAYS FROM FEBRUARY 4 WEBINAR

Euro Overstayer – DNA testing has confirmed that this incursion began from a single mated queen and that queen originated in Europe. BNZ is unsure how it arrived.

Why the Slow Start? – Two male yellow-legged hornets were first found in Grafton, on the south side of the Waitematā harbour, in June 2025 and BNZ wrongly assumed they "may have been solitary hitchhikers". Their incursion response did not begin until four months later once nests were established – "as the only hornets of importance would be over-wintering queens for which there are no viable means of detection".

Why Were Those Males So Far from Home? "The confirmed specimen and suspected male were some distance away from the current central focus of operations in Glenfield and Birkdale. Given that the genetic data indicates that these are related to the rest of the hornets, it is likely these males were offspring of the initial founding queen (siblings of the queens we are finding this season) and were at the edge of their range searching for mates at the end of last season. This is a known behaviour for male yellow-legged hornets. The areas they were found in are covered by our current trapping network and no further activity has been detected in those areas," BNZ say.

In Zone – The North Shore surveillance zone features more than 1000 hornet traps, and has 575 registered apiaries. Around 50-60 staff and contractors are on the ground in the area on any given day, supported by approximately 80 staff "coordinating and supporting operations".

On the Look-Out – BNZ has "surveyed" 8334 properties looking for the pest and on average receives 110 notifications each day, totalling more than 11,000 since the response began. Within 1km of hornet finds there are 387 traps which are checked every two days, from 1-5km there exists 443 traps checked twice weekly, 5-11km there are 268 traps checked fortnightly.

Going Gaga for Radio – Radio trackers are now "a core tool" for locating nests and once a field wasp is tagged the nest is usually located "within a few hours". Fourteen nests have been found using the technique, which is particularly useful for finding the hornet's secondary nests high in trees, which they relocate to in the latter half of summer.

Signing Up – Digital billboards and signs alerting the public to the hornet's presence and asking them to report sightings have been erected on the North Shore. Online and print advertising has also been used.

What Can Beekeepers Do? – Through summer and autumn beekeepers are advised to observe hives for signs of 'hawking' – that is hornets preying on flying bees at hive entrances – and put out traps and monitor them. Hawking and defensive bee

behaviour should be photographed and BNZ notified.

If a Nest is Found – Do not disturb it or get too close. Take photos with a scale item to help prove size, then notify BNZ. Utilise the yellow-legged hornet response website.

Kiwi Calendar – Precisely when queens will begin to be produced and undertake mating flights is not known, and is dependent on "a wide variety of environmental factors". To help determine this, nests are being dissected to understand the developmental stages of the population.

A secondary yellow-legged hornet nest found in the Glenfield area.

Winter Worries – Once queens are mated and hibernate for winter (usually in a warm place not far from the nest in which they emerged) the risk of "hitchhiking" will be much higher. One mated queen is all it took to get the population started in New Zealand, and one mated queen hitching a ride out of the North Shore would greatly dimmish eradication hopes. BNZ lists the following areas as likely places for hornet 'hibernacles': tree hollows, under bark, wood piles or leaf litter, but also man-made nooks and crannies such as those in garden equipment, camping gear or wooden packaging.

SOS to Nature? – There is no silver bullet solution in nature to control yellow-legged hornet populations – such as varroa does for honey bees. "A variety of parasites, parasitoids, viruses and entomopathogenic fungi have been observed on *V. velutina*, however none of them are thought to be effective biocontrol agents for a variety of reasons," say BNZ.

Close to Home – foraging wasps usually work within 500m of their nest, but have been seen out to 2km.

Allergic Reaction – Experience from the UK, where the hornet is more established, shows that those most at risk of an anaphylactic reaction to a hornet sting are those who have allergies to common

or German wasp stings, because allergic reactions are highly similar between Vespa and Vespula species. Epipens are effective on any form of anaphylactic reaction, but should not be used to treat pain alone from a sting.

Vespex Potential – The manufacturer of fipronil-laced protein bait 'Vespex', which is highly effective at killing common and German wasp populations during times of protein foraging, has undertaken trials in France with the fipronil removed and it has proved attractive to the hornets. Limited data, but potentially a very important tool.

Outside of Auckland – MPI does not have traps set outside of Auckland and is heavily reliant on the general public to notify them of any hornet spread. "It has been noted in other countries, that due to the sporadic and random pattern of spread by hitchhiking, the most effective way to detect these is through effective public reporting."

Hot Spots – Thermal imaging is not seen as a practical tool for locating hornet nests, with BNZ believing tracking of hornets to be far more effective. "Once a location is known, nests can be seen using thermal imaging. However, large-scale area-wide use of thermal imaging for detecting nests has not been effective anywhere else."

The full yellow-legged hornet response website can be found here.

Radio tracking technologies are now a "core tool" for finding hornet nests, with 14 having been found using the technique as at February 4.

Wear The Same Togs Every Day?

APIGUARD®

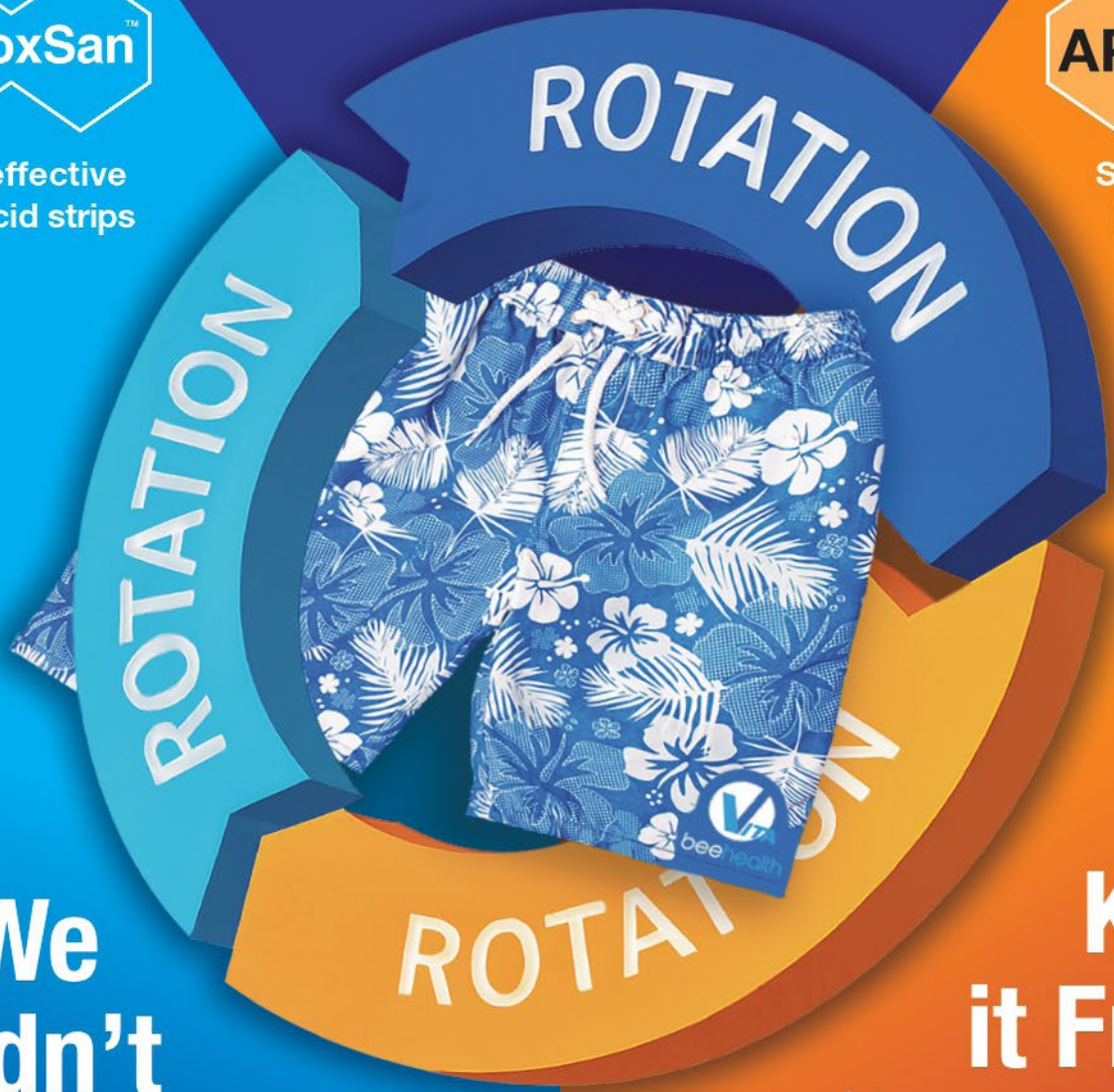
Naturally effective varroa control

VarroxSan™

Highly effective
Oxalic acid strips

APISTAN®

Simple and
powerful



...We Didn't think so

Keep it Fresh

Vita Bee Health presents the ideal rotational partners for your Integrated Pest Management strategy

Ceracell are Vita's exclusive distributors in NZ and Australia.

www vitabeehealth.com | healthybeeguide.com | vitabeehealth | @vitabeehealth

Ceracell BEES FOR LIFE®

VITA beehealth

Comvita "Moving in the Right Direction", but Still Faces a Long Road to Recovery

With banks closing in Comvita needed to show profitability, and did, in their financial half year to December 31. A February 23 presentation to shareholders of New Zealand's largest mānuka honey company also came with the tease of a potential international investor to help reduce debt levels.

From July to December last year Comvita got back in the black, a NZD4.59m profit announced, up from a loss of NZD6.48m in the equivalent period a year prior. Eyes will now turn to full financial year results to be announced in August to determine if the industry's flagship honey company can maintain the much-needed turnaround. A significant test will be whether Comvita can fund operations through profits rather than rely on heavy borrowings, as in the past.

That share price received a four-cent bump on the day of the half-year news, climbing to 72c. That continues a gradual increase from a near historic low of 48c in November, following shareholders' rejection of a takeover bid launched by New Zealand health food company Florenz.

"Comvita is moving in the right direction again," Board chair Bridge Coates announced.

"In saying this, we may remain mindful of the work still ahead to fully restore our financial strength and to deliver a sustainable long-term performance."

The improved financial position through the first six months of Comvita's financial year has been built through an 18.3% increase in revenue for the period, coming off the back of an aggressive sales strategy in the USA 'supporting reduction of surplus inventory and operational efficiencies'. USA overtook China as Comvita's leading market, the growth highlighted by a staggering jump in sales from NZD14.6m in HY2025 to NZD39.6m in the latest period. 'Continued softer consumer demand' in China saw sales there drop from NZD41.2m to 37.4m, compared to the 2025 corresponding period.

The aggressive sales strategy into the USA has helped lower inventory levels, that value having reduced NZD52.5m from 31 December 2024 to sit at 68.3m.

Performance Highlights

REVENUE	OPERATING EXPENSES	NORMALISED EBIT	NPAT
$118.0 M	$49.7 M	$ 10M	$4.6 M
↑ 18.3% vs PCP	↓ (13.6%) vs PCP	↑ $10.7M vs PCP	↑ $11.1M vs PCP

OPERATING CASH FLOW	FREE CASH FLOW	NET DEBT	INVENTORY
$20.8 M	$16.4 M	$48.7 M	$68.3 M
↑ $10.9M vs PCP	↑ $14.4M vs PCP	↓ ($32.9M) vs PCP	↓ ($52.5M) vs PCP

Normalised EBIT, Free cash flow (FCF) and Net debt are non-GAAP measures. We monitor these as key performance indicators and believe they assist investors in assessing the performance of the core operations of our business.

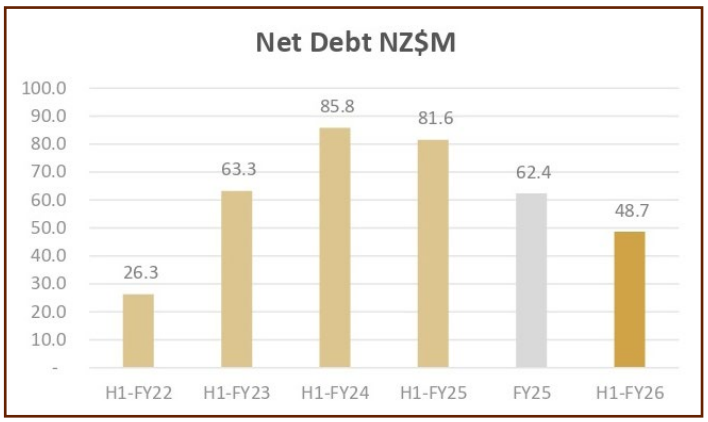
While still laden under considerable debt, that burden has been lessened with Comvita able to announce a reduction from NZD62.4m at June 30 2025 to 48.7m by the end of the calendar year.

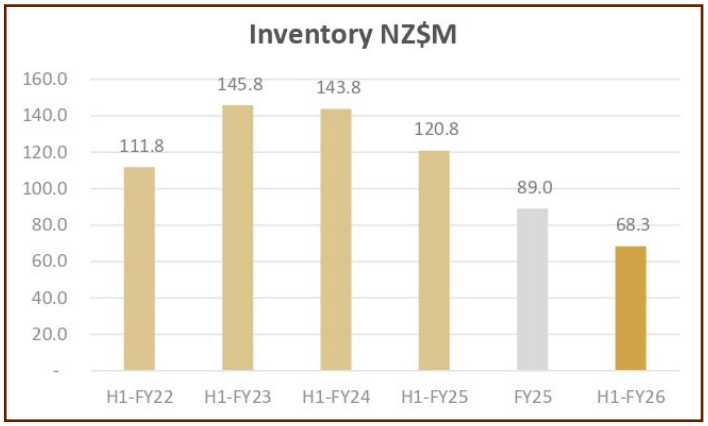
Coates was bullish at the half-year results, saying "Operational discipline is strengthening, leadership capability is being rebuilt, and the company is executing with consistency. These are important foundations, but the turnaround is not yet complete".

The claim of "executing with consistency" is an optimistic view of one set of positive half year results, but confidence is increasing as the company navigates a crucial next two months to its survival. Banks have given Comvita until the end of April to recapitalise the company. On that front Coates also had news that help might soon be at hand, announcing "interest from an offshore strategic investor in the food and beverage sector to underwrite a capital raise at a share price of NZD0.80, and a level and a quantum materially above the minimum NZD25 million, which is required to position the company appropriately".

News on that front would be forthcoming as it progresses, inline with the April 2026 banking facility expiry, the chair said. However, Gradon has been reported, by the *National Business Review*, as describing the potential investor as "passionate about health and wellness and have been very successful in the health and wellness area".

The NZD0.80 price mentioned by Coates alongside the potential investor is the same amount as the Florenz 2025 offer rejected by shareholders.





Comvita Ltd. half year results to 31 December 2025.

In a Pickle – A Beekeeper's Truck-Up

It was intentionally left uncredited. Last month's *Apiarist's Advocate* eMagazine cover photo of a fully-laden-with-beehives 10-tonne truck precariously balanced on its side above a pond. Reader questions rolled in... Who had the bad day? What damage was inflicted to man and machine? And, most commonly, 'how the hell do you get all those hives off in that situation?'. Now we get the full report from the beekeeper in question (still wishing to remain anonymous) who details his "major f-up" and lucky escape...

BY 'THE SIDEWAYS BEEKEEPER'

I was really looking forward to lunch that day you know. I like to think I am a bloke's bloke, but a nice spread of cheese and crackers, even pickles too, doesn't go amiss when it's hard-earned in the back-blocks. So, on this first day of chasing the mānuka flower and knowing I had a busy morning of trucking hives, I prepared myself a fitting menu for the midday meal, to be enjoyed with a view once my girls were in place, on site, high in the bush.

Instead that spread became currency, doled out to a collection of my johnny-on-the-spot staff who helped rescue the situation and the bees, plus a digger driver who delicately righted my keeled vessel and an on-call mechanic come to revel in my misfortune. Having conducted that important job, he eventually inspected an oil-soaked engine.

Last month's, anonymous, cover image which got beekeepers wondering...

At that time, while something like four million bees frantically escaped their turned-upside-down-world with great disorientation as the beating sun crept higher, my mind was firmly on righting the situation – and I will get to the logistics of that. However, thoughts soon turn to 'how did this happen?' and, having relived the episode in my mind many times since, I think I might finally have an answer to that...

SURVIVAL BY A THOUSAND CUTS

I've been carrying out this caper for decades now and people with such experience rarely make one mistake big enough to cause such a calamity. That was the case here. I believe it was a collection of contributing factors and – yes – my own distraction and poor decision-making key amongst them.

Like all good hive moves the day started in the dark and the hives were loaded, unblocked, as is our custom. A warm morning, we knew we needed to race the sun to get them higher into the hills and on site before the field bees went to work.

However, while loading the hives I noticed an oil leak in the crane mounted on the truck. This needed staunching and so I made a hurried call in to a nearby farmer's shed, borrowed some tools, and remedied the bleed. The setback had me watching the clock more closely though, especially as big-yellow emerged big, and yellow, and the air warmed.

The truck travelled well as I pushed the pedal closer to the metal and I could tell there was some weight in these hives. Like many parts of New Zealand this season, my neck of the woods was hit with warm weather early in summer and these hives had stored up the best part of a full-depth box of honey already. Stacked two high, 72 to a load, that's a lot of weight up high...

It's even higher when the tires are over-inflated. I should have known and my hindsight on the matter is crystal clear but, when I climbed into the cab early that morning all I thought was 'hmmm this new cab is a little higher off the tarmac than the old truck'. Yes, that's right, this was a brand-new truck and this was my first

time driving it in anger. No more than 500km on the clock. I kid you not. Murphy's Law.

The shop had put 110psi in the front tires, 90 in the back. Factory operating pressure is 60, a later inspection of the tire-wall confirmed. That's a bit of extra height and a bit less give than there should be…

If I had stuck to the main track it would have probably all been fine though. I didn't do that though did I? Both luckily and unluckily in the situation, I'm the boss, meaning I own the company. Nobody wants the guilt of rolling someone else's brand-new vehicle, so at least I don't have that, but it did mean I was juggling about 10 work-related issues in my mind that morning as things went off track – literally

SLOW MO OH-NO

Yeh, I wasn't fully concentrating and took the wrong turn. I soon realised this and was thus returning back down the hill and attempting to make a turn, from a poorly formed trail onto the main track, when this man and machine became unstuck.

Racing the clock, mind elsewhere, a vehicle on high heels and passengers – human and insect – travelling with over-packed lunch-bags, the combination was too much as we cut the corner and over… she … went. Seemingly in slow motion.

Honestly, I might be lucky to be alive. As you will see from the photos, my cab was precariously close to submerging the driver's side in a muddy-bottomed stock-water dam. As it was, the driver's

Look at that shiny new under-carriage. Less than 500km on the clock and taking a dive.

window and wingmirror came to rest a few inches off the grass at pond's edge, as a conveniently placed rush against the side of the headboard provided some small ground clearance to the cab. Riding solo, I was able to extricate myself from the stricken vessel through the top, passenger, side. Admired later, my footprints on the cab ceiling told a story.

SPRINGING TO ACTION

You can't really dwell on your lucky escape long when you have that many bees hoping to make their own such escape though so, out of cell-phone reception, I set off on foot to the nearest farm house and land-line, a 3km walk.

I try to organise our teams of beekeepers to work, if not the same properties, then at least within some geographical proximity. Therefore, I was able to flag down a couple of our other beekeeping boys to come laugh, rescue, then laugh some more, at the boss.

With their truck-crane and hive forks we were able to extricate all 18 pallets of beehives from the truck, but it was no fast job. Just releasing the strops without a plan would have been carnage and left many a hive floating around a dam. What we devised was another set of strops holding the hives to the truck's headboard while the lifting cradle was inserted to one pallet at a time and attached with a smaller strap. At that point the original transport strop was released and the pallet was plucked out and placed on the waiting truck – and wished better luck this time!

All that took a while. As did the arrival on site of a 14-tonne digger to right my new truck. Five or six hours, sweating bullets

An intricate stropping set-up to extricate 18 pallets in an orderly fashion.

on a 25 degree day, before we were off again to get the bees to where they were supposed to 'bee'.

We left one pallet of four hives behind to collect the field bees and that weekend a couple of pig-hunting mates reported walking past it and the stack was covered top-to-bottom, side-to-side, in bees.

WHAT'S THE DAMAGE?

Every way you look at it – I got off pretty lucky.

My brand-new truck? A small dent in the cab, a few twisted cab mounts and that's the amount of it. Amazing really. We didn't even claim insurance, but that might have been out of pride…

The bees? A few of the brood nests took a bit of rearranging, but those 72 hives ended up reaping three tonne of honey, so about 40kg a hive. I wouldn't recommend it, but it seems rolling their taxi does not overly limit honey bees' productivity.

My wallet? Well that digger, mechanic and staff don't come free, but it could have been much worse. There was a pond inches away…

My ego? Well, that's probably got a ding bigger than the cab. Small price for a very important lesson learned though perhaps.

My physical person? Like I said, unscathed… well almost. As we both got to approximately 70 degrees from centre my much-fancied jar of lunch pickles sprang a vicious dive into the side of my head. A scar and resulting bald spot will be with me some time.

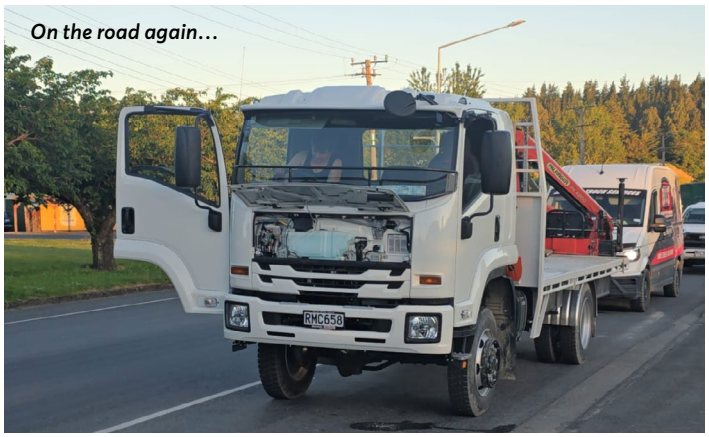
It hurt briefly, but not as much as missing out on my first, well-prepared, big lunch of the season. It was some nice cheese but, all things considered, probably a cheap price to pay.

Got a story of a sticky situation you want to share? Email editor@apiaduvocate.co.nz

A clear deck, five hours later.

By the time it came to righting the unladed truck, there were plenty of bees in the air.

A close call, but even the wing-mirror on the downhill side escaped unscathed.



On the road again…

ESTD EGMONT 2008
HONEY

WE'RE BUYING HONEY

Egmont Honey is proud to share New Zealand's finest honey with the world. You'll find us in the largest retail networks globally.

We're currently sourcing honey to fulfil contracts with the largest global retailers, **offering beekeepers reliable, long-term partnerships and attractive payment terms.**

We're contracting **new-season Mānuka honey now** - contact us today to secure your supply agreement.

The Egmont Honey Team
06 755 0548
procurement@egmonthoney.co.nz

Woolworths the fresh food people · Walmart · Chemist Warehouse · Costco Wholesale · Albertsons · H&B · foodstuffs North Island

What's in an Advisory Group? Speak Up or be Told

Beekeepers? Technical experts? A mix of both? Just who should make up advisory groups to New Zealand Bee Health and Biosecurity (NZBB) is the topic of consultation between the American foulbrood (AFB) agency and the beekeepers who fund it – and if sufficient beekeepers don't speak up the decision will be made for them.

NZBB notified all beekeepers, on February 16, that a two-month consultation period was opening on the topic of advisory groups, with options for their structure laid out. The former AFB Management Agency reformed as an independent trust in June 2025, and among its new rules is the ability to form advisory groups.

The groups – plural as they may have finite lifespans to address certain topics – are expected to advise on new or improved ways to tackle problems facing the beekeeping sector, with NZBB providing the example 'such as improving the traceability of hives during pollination season to assist with AFB elimination'. Increasing knowledge in specific areas would also be a focus, 'such as investigating the feasibility of AFB-detection by dogs or proposing a model for regional AFB elimination'.

Key differences between options

Opt	Role	Topic selection	Members	Member selection	Duration	Funding
A	**Technical AG** Expert & rapid advice Board-driven	Topics chosen by the Board	Technical experts (max 7)	Members appointed by the Board	Temporary Short fixed-term New AG for every topic	Voluntary, unpaid members No NZBB funding
B	**Technical & Beekeeper AG** Expert advice Board-driven	Topics nominated by beekeepers Final decision by the Board	Technical experts (max 3) Self-nominated beekeepers (max 4)	Technical experts appointed by the Board Beekeepers appointed by the Board	Permanent New technical experts for each topic 12-month term for beekeepers	Voluntary, unpaid members No NZBB funding
C	**Stakeholder & Technical AG** Expert advice Board-driven	Topics nominated by beekeepers Final decision by the Board	Technical experts (max 3) Stakeholder-nominated beekeepers (max 4)	Technical experts appointed by the Board Beekeepers appointed by the Board	Permanent New technical experts for each topic 12-month term for beekeepers	Voluntary, unpaid members No NZBB funding
D	**Stakeholder AG** Stakeholder expert advice Beekeeper-driven	Topics nominated by beekeepers Final decision by the Board	Beekeeper-elected members (approx. 7)	Beekeeper-elected members	Permanent 18-month member term	Voluntary, unpaid members No NZBB funding

Beekeepers have four advisory group options to choose from, but without a 157% increase in consultation response over the most recent round, option A will be implemented.

An online survey asks beekeepers to rank the four options presented to them. Option A, which NZBB seems to favour, would see a technical advisory group appointed by the board who gives them topics to advise on. Option B would see a mix of experts appointed by the board and self-nominated beekeepers. Option C has beekeeping organisations nominate advisor group candidates to sit alongside NZBB's appointed experts, while Option D leads to a permanent group established to be populated by beekeepers who have been elected through their beekeeping organisation.

And if less than five percent of registered beekeepers respond to the consultation, then option A will be rolled out.

"We established the 5% threshold in response to historically low participation rates across every consultation round we have held with beekeepers in recent years. We believe 5% of all registered beekeepers is a realistic expectation for meaningful engagement," NZBB general manager Niha Long says.

Whether the 5% threshold is a carrot or a stick is contentious though considering the vast majority of New Zealand's 7550 beekeepers have small hive-holdings. Motivating them to vote on a topic considered incidental to their hobby will likely prove challenging. Recent evidence, where just 147 beekeepers engaged in consultation on the topic of future levy rates and a potential expanded biosecurity role for NZBB, suggests it will not be reached. That number would need to increase by some 157%, or 230 respondents, to hit the 5% mark.

A nine-page consultation document has been provided by NZBB to detail the four options, all of which would see roles unremunerated.

The formation of the NZBB Trust last year received heated criticism from some commercial beekeeping quarters, not least due to the apparent self-appointed nature of trustees, or board members. Now, with NZBB favouring a collective appointed by their own board as the default option for an advisory group, both commercial and non-commercial beekeepers will have to respond together if options B, C or D are to get a look in.

The industry has a recent example of 'option A' to look to – the technical advisory group (TAG) helping with the yellow-legged hornet response. Long has sat in on several meetings where that group has advised.

"The TAG receives questions and issues raised by

the Ministry for Primary industries or by Government industry Agreement partners within governance, the beekeeping community, or the public," Long explains.

"The TAG then works through those questions, forming considered views and recommendations, which are presented to governance for consideration."

The ball is ultimately now in the beekeeper's court to determine the advisory group structure, but it would be a turn-up for the books should anything but the default result.

"In proposing Option A as default, we have listened to beekeepers who have long asked whether we are fully exploring new possibilities, innovation, and fresh thinking to fast-track or improve the efficiency of AFB elimination; and whether we have a clear enough picture of the gaps that may be standing in the way of success," Long says.

The consultation details can be found here.

Have You Listened to *Apiarist's Advocate*?

In 2026 *Apiarist's Advocate* has yet another way to consume our content – in your ears. *Apiarist's Advocate Pod* launched in December, a podcast featuring AI readings of the monthly content.

Whether I'm in the apiary bouncing between hives or in the shed bouncing between stacks of beekeeping equipment, I will often have a podcast playing in my ear. I know I am not alone in this, not to mention listening when exercising, walking the dog or whenever else people might chose to plug into a "pod" (I don't have a dog and certainly don't exercise as much as I should!).

In this day and age it is important to make media content as available as possible to you the consumer. So, now *Apiarist's Advocate* can be read in the monthly eMagazine (which is easily saveable onto your phone or printed out) and mid-month 'Addition' email, along with at www.apiaristsadvocate.com and now listened to by searching for *Apiarist's Advocate Pod* in your podcast app. And, if you can't find it on your favourite app then let me know, email editor@apiadvocate.co.nz, and I will try and fix that.

The podcasts are AI generated readings of a selection of our content. At this stage we coincide one podcast drop of three or four stories at the start of the month, then also include a podcast of the mid-month *Addition*. So, there should be something for your ears every couple of weeks.

It's all new, so let me know of any improvements you think could be made. The editing app is not perfect, but I think the quality is good. The AI voice's accent, while I requested 'New Zealand', sometimes touches on South African I reckon! I think it is very easy to listen to though, which is the main thing. *Apiarist's Advocate Pod* can be found by searching on your favourite app (I hope, and if not, let me know) and is hosted here.

-Patrick Dawkins, editor.

John Berry on Keeping it Simple

It's the old acronym of KISS to the fore as veteran beekeeper John Berry explains how sometimes the basics are all you need for successful beekeeping.

BY JOHN BERRY

I'm inside writing this today because it's absolutely filthy outside and has been all week. Here in Hawke's Bay we tend to have some of the best weather so I can only imagine what it's like in other parts of the country. The joys of beekeeping.

When I first started beekeeping our hives consisted of a floor (made from heart totara and soaked in hot tar), full-depth boxes painted with whatever was cheapest and mostly coming from other beekeepers who had gone bust, home-made simplicity frames, and a lid. No internal or external feeders, no excluder and no top board. Nine frames in the two brood boxes and eight frames in the honey boxes.

Combs were cleaned up in winter and sorted into brood (no drone cells), thirds (some drone cells) and fourths (rough).

If you wanted to get fancy you could have a rock on top to hold the lid down and a lumber crayon to write on the lid. A home-made hive tool, a smoker, a bag of pine needles for fuel and a fume board to drive the bees out of the honey boxes. A notebook for record-keeping, a box of matches and a sealed tin of granular cyanide for killing AFB hives.

Work gear consisted of leather boots, anklets with elastic top and bottom that stop bees getting into your boots or up your legs (if you worked in wet grass the bees would sting the hell out of your ankles), a pair of khaki cotton trousers, a home-made veil made from a khaki cotton shirt, steel gauze and number eight wire. You could either tuck the veil in or use a belt. Cotton inner gloves and PVC gloves.

A box that has seen 40 summers and winters, made from pallet off-cuts, and a lid that might be just as old.

Everything simple, mostly home-made and all interchangeable, mendable, recyclable, reliable and minimal.

I used to be amazed as a kid going to beekeeping field days and seeing hobbyist hives with reversible summer/winter floors, flash white boxes, excluders, flash brought frames, top boards and flash lids with built-in ventilation and sloping roofs, not to mention the pristine white bee suits. Nevertheless, what we had worked and was cheap and that's what you needed in those days to survive as a commercial beekeeper.

These days my hives are all on pallets, I use excluders and top boards, but everything else is mostly the same. We use overalls with elastic on the bottom, but they are still cotton and khaki and, while I do have a couple of white veils, I prefer my khaki ones even though they are bought.

Khaki is a better colour for bees, they react to it less, especially at night. It's also better at not showing propolis stains. I would by choice still use home-made ones like my grandmother and mother used to make, but my wife – after making them for a few years – said they were just too difficult and hard on equipment. So I have to make do with what's available commercially.

I still make my own hive tools, my own slightly modified simplicity frames and have nothing but full-depth boxes. If, heaven forbid, I was to start all over again from scratch I don't think I would change much. I would probably try and make my boxes out of macrocarpa rather than pine and I wouldn't paint anything (it's not my favourite job).

My father once told me that if he was to start again he would go to a 1 ½ depth brood-box with three-quarter depth honey supers. I can certainly see the advantages, but the convenience of everything being the same size has a lot going for it. You could of course have nothing but three-quarter gear, and it is lighter, but then there is more of it.

Over the years I have seen innumerable types of hives. From the rustic and highly illegal apple box hive, to the modern fully plastic version, and every variation in between.

I have also had the privilege of working with some overseas beekeepers and many different types of hives, but there is a reason why a standard Langstroth hive is still by far the most common hive in the world and that is because it is well-designed, practical, easy to manufacture and keeps it simple.

You know what they say – keep it simple stupid.

John Berry is a retired commercial beekeeper from the Hawke's Bay, having obtained his first hive in 1966, before working for family business Arataki Honey and then as owner of Berry Bees. He now keeps "20-something" hives.

Bees and Water

We might sometimes overlook it due to its abundance in the environment, but the role of water is essential to a healthy honeybee colony, both for nutritional and temperature-control purposes. Dr Mark Goodwin shares what he has learned about honeybees' association with water, and how beekeepers can help make it more accessible to their colonies.

BY MARK GOODWIN

We live in an environment where water seems everywhere, and as beekeepers we don't pay much attention to it. Bees need to collect water to dilute the nectar and honey they feed to larvae. Nectar may have 40% sugar and honey 85% sugar, but this needs to be diluted with water until it is about 4% sugar before it can be fed to worker larvae. Therefore, without water, bees cannot rear brood. Water is also collected and spread on hive surfaces to cool the hive as it evaporates, known as evaporative cooling.

Have you ever wondered why bees seem to prefer 'dirty', or at least not 'clean' water? Bees use scent to communicate the location of a food source to other bees and it is likely one of the reasons why flowers are scented. This system does not work for clean water as bees cannot smell it and cannot easily recruit other bees to the water source. This is why bees prefer water that smells, like muddy puddles, chlorinated swimming pools and cow pats.

Thirsty work – but how do bees find a water source? Both sight and smell play crucial roles, Mark Goodwin explains.

WATERY OBSERVATIONS

During my research programme I got taught a few lessons the hard way about bees and water. I had a project to determine the attractiveness of different sugar syrup concentrations to bees, to help with a risk assessment I was writing on products being imported into New Zealand that contain honey. I trained marked bees to collect sugar syrup from a dish. The sugar concentration was gradually lowered to determine at what concentration the bees would stop foraging. Very surprisingly, I kept lowering the concentration till there was just water, and the bees still collected it. At some point the bees must have changed what they were doing with what they were collecting when they returned to their hive. I had to use a different method to answer the question.

In another trial I was looking at methods of shipping package bees to Canada. I needed to find out how much heat a package would produce. To do this I put ten 1kg packages of bees in an environmental control room. The packages were fed sugar syrup. Unfortunately, the cooling system of the room broke down at the same time as the over temperature alarm. When I went to look at the packages they were mostly dead because it got too hot. Before they died, the bees took the 65% sugar syrup from the feeders and spread it across the mesh on the sides of the cages. There was so much syrup on the mesh that it was dripping on the floor. They had fanned over it to try and get evaporative cooling, as they would do with water. Unfortunately, it did not work for the bees as it is very hard to evaporate water from 65% sugar, and all that the fanning did was to increase temperature in the room much faster, until they killed themselves.

THE KIWIFRUIT CONUNDRUM

My last involvement with water was in kiwifruit orchards where beekeepers had to put hives in cages that had been built over gold kiwifruit crops. Many bees were collecting on the sides of the cages and dying there. The colonies coming out of the cages were much weaker than when they were introduced. I was asked to find out why, and to come up with a solution. The bees on the mesh were unlikely to be lost, as other bees were foraging on the kiwifruit flowers and returning to their hives without getting lost. This was supported by the observation that none of the bees on the sides of the cages were carrying pollen. Growers placed bowls of water underneath the vines and bees were collecting it, but after a very quick count, it was obvious that far too few bees were collecting water. To try and make the water easier to find, I moved some containers into an area where there was a break in the canopy so there was only mesh above them. Very quickly there were thousands of bees visiting these dishes and exposing their nasanov glands to attract more bees. It almost looked like they were robbing honey.

The difference in the attractiveness' of the water was not due to the light intensity under the vines, as bees were freely visiting the kiwifruit flowers that hang under the vines. It was because bees recognise water by the polarisation of the light reflecting from it. Under the vines the light was coming from many directions, and therefore the reflections were not polarised in any particular direction. With just sky and mesh above the dishes the reflected light was polarised, and the bees could recognise the water. The bees collecting on the mesh sides of the cage were likely to be bees that had been looking for water.

What can happen without water was obvious when I was asked to look at some hives on the Golan Heights in Israel/Syria when I was giving some lectures there. The hives that had been put into a crop were not flying at all. The temperature was about 40°C, and the bees would have needed to collect water to use evaporative cooling. As there was no water available the colonies had stopped flying altogether.

WHAT HAVE WE LEARNED?

The lessons are that bees must have water to collect and they prefer water with a scent. If you don't provide it, they may forage from a neighbours swimming pool. Beekeepers in South Australia must provide water otherwise the bees will compete with stock for water.

The water needs to be in the open, rather than in a shaded area, or the bees may not be able to find it. The closer the water is to the hives, the less energy a colony will need to use to collect it. Putting hives on ridges and expecting the bees to collect water from a stream in a valley will work, but will likely reduce honey production because the bees will have to use much more energy to collect the water.

Mark Goodwin is a honey bee scientist and pollination biologist. He set up and led the honeybee research team at Ruakura in Hamilton for 35 years and has vast experience in beekeeping, having given lectures and worked with beekeepers and growers in 19 different countries, written 25 scientific papers, hundreds of technical articles and some of New Zealand beekeeping's most instructive books.

Thoughts, feelings or other input you'd like to share?

We'd love to hear it.

Email your 'letter to the editor' to editor@apiadvocate.co.nz

Don't Get Caught Out This Spring

Pyramid Apiaries

PREORDER NOW
MATED QUEENS – SOLD OUT
5-FRAME NUCS – ORDER NOW
CELLS – ORDER NOW, PICKUP ONLY

MATED QUEENS | 5-FRAME NUCS | QUEEN CELLS

Patrick & Laura Dawkins – Marlborough
pyramid.apiaries@gmail.com
027 383 7278
www.pyramidapiaries.co.nz

Radar Love

Queen bees and drones exclusively mate in "drone congregation areas", right? Although crucial to the survival of our livestock, as beekeepers we actually know very little about the mating locations of honey bees and, believe it or not, what we do know has been aided by research using radar technology originally designed to prevent car crashes...

BY DAVE BLACK

Science, especially 'bee' science, often has a fortuitous and many-fathered ancestry. In the summer months of 1974 an article, published and discussed in the British magazine 'Wireless World', inspired an idea that would begin to fill in some of the gaps in our knowledge about honey bees, but was initially proposed as a life-saving safety measure[1]. It described technology developed by a group of Radio Corporation of America (RCA) Lab engineers from Princeton that was designed to prevent rear-end collisions on highways, at the time a third of all vehicle accidents[2]. It was a radar technology that may have its descendants in your car today.

The problem with using a reflected signal from radar is that you need a clear space to operate in; easy if you are a ship or an aeroplane, not so easy if you are among a 'clutter' of reflecting objects on the ground. The RCA team's solution was what we now call 'harmonic radar', which detected the presence of a returned harmonic of the broadcast signal rather than the reflected signal itself. By fitting the object you are interested in with a device that only had to radiate a harmonic of the signal it received, in coming years tiny, unpowered, harmonic radar devices would be small and portable enough to be used to detect avalanche victims, hornets[3], and even track beetles[4]. You just had to be able to 'hit' them with the beam from a radar transmitter.

A honeybee with a harmonic radar transponder fitted to track flight activity. The transponders weigh less than the bee's usual pollen or nectar load. Photo: S Wolf.

PREVAILING WISDOM

One of the things about bees that we've never properly resolved, despite the assumptions we make, is where queens mate. The wisdom that prevails is that mating only occurs in a persistent, defined space we call a Drone Congregation Area (DCA) and perhaps it does, but a recent paper in *Apidologie* that reviewed over 200 science papers on the topic reminds us that, actually, this isn't something we know, it's something we believe[5]. Studies using harmonic radar to follow drones and queens seemed to be the best response to answering many of the open questions about this idea.

The best 'evidence' we have for queen mating in DCAs is the argument that it 'ought' to be true; it just makes sense. We hear drones that aggregate, or congregate' in certain areas, and some queens have been seen to mate there, although not always[6]. By congregating, drones make themselves easy for a queen to find and, like schooling fish, reduce their individual exposure to predation. By making finding an appropriate mate easy the behaviour limits the risks inherent in a queen's solitary mating flight.

OPEN QUESTIONS

The discovery of the queen pheromone (9-ODA[7]) that would attract drones in flight was used to survey landscapes for DCAs, and nearly all the research showing the existence of DCAs and queen mating relied on lofting 9-ODA lures or queens using poles, kites, or balloons to attract drones. The fact that the 'bait' itself might also stimulate the formation of a DCA called for a method that could independently study the formation of these areas. The early studies used conventional radar, but had to operate in relatively featureless landscapes where DCAs do not readily form. There has been evidence of bees happily occupying spaces like semi-desert or marshland where no DCA has ever been found, which casts doubt on the 'essential' nature of DCAs.[8]

There are also explanations required about how drones (and queens) find a DCA. There can be no permanent intergenerational 'knowledge' of these spaces passed on, they must each be discovered by every individual drone rather than being learned from each other. Their orientation flights typically do not take

them far enough from their hive to discover congregations, yet after a few local orientation flights fixing their home bearing they magically fly off to one of several DCAs.

It's difficult to see how drones might recognise a DCA by its common features, not just because we haven't been able to discern what these are, but also because each shared location would look/feel/smell different for the many thousands of drones that must visit. For example, a particular horizon or feature location will appear differently for drones that approach from the east, compared to the ones originating from a hive in the west.

A LITTLE KNOWLEDGE...

There have been very few radar-traced honey bee studies,[9, 10] perhaps we are too obsessed with parasites and disease, but it looks like we should be thinking of drone congregations as an emergent feature of behaviour, rather than some physical phenomenon. Joseph Woodgate from Queen Mary College in London has been tracking the routes of bumble bees,[11, 12] but in 2021 applied the experience to drones, and unsuccessfully, to queens.[13]

The radars have documented drones moving through the landscape along 'flyways'; corridors constrained by the physical geography of the site that funnel all the drones from the different local hives onto the same path. These are more or less fixed, year on year, but may shift, perhaps because of unusual wind conditions for example, and they may be the result of all drones using the same set of navigational strategies rather than any 'knowledge'.

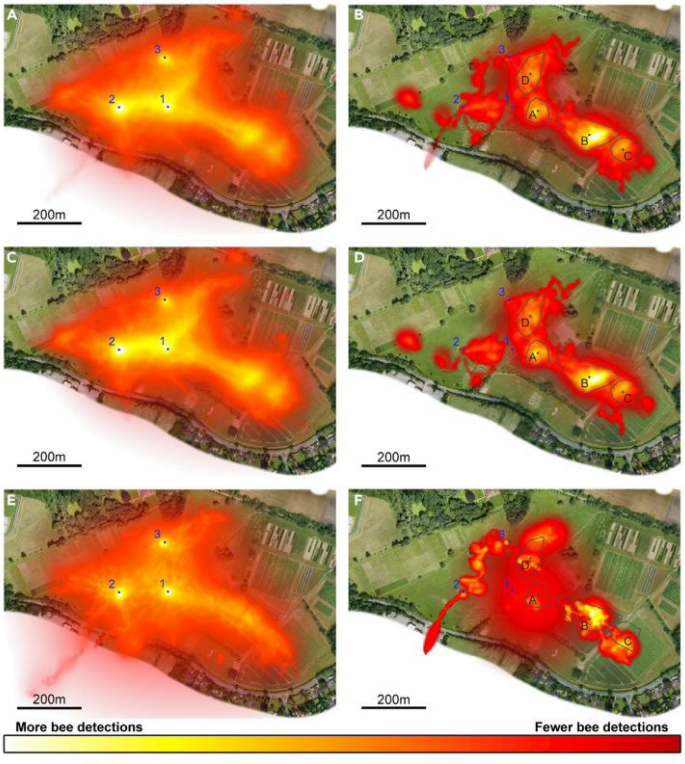
Earlier studies could only 'see' clouds of drones. Harmonic radar revealed the track of individual drones on sections of straight flight, each interrupted by sudden episodes of much more 'convoluted' flight. The later behaviour was described in terms of a 'swarming' flight, where bees move away from a point, then accelerated back to that point with a speed that was proportional to the distance they had travelled. The mating swarms of midges and mosquitoes are another example where this is seen. This is typical of lots of 'swarming' animals, the sudden bouts of acceleration are part of what keeps a swarm together. The drones would circulate through several DCAs in a single flight using the flyways, stopping for a minute or two to perform these convoluted flights and then move on. The places where the convoluted flights of hundreds of drones happen to coincide are an artefact emerging from the drone flyways, and these are what we are calling DCAs.

The Woodgate team's effort to track virgin queens was unfortunately not very successful – even harmonic radar has limitations (and is also why, incidentally, it wasn't very good at tracking hornets). Over three years, out of 94 tagged, there were 26 traces of queens flying, all but three too short for mating flights. Only two returned with mating signs but the longer flights could not be completely tracked. One was not likely to have been close to a (known) DCA and was thought to have mated near a hive; the other flew off towards a DCA but dislodged its tag. It wasn't clear whether queens also use the same flyways, but it seems a stretch to claim queens only mate in DCAs.

Where queens actually mate is something we could do with knowing more about, partly because we could improve the commercial utility of our queens, but it also has important implications for conservation, where the reproductive isolation of bee strains matters. Microelectronics and battery technologies are now sufficiently developed to enable tiny radio transmitters, small enough to be carried by an insect the size of a bee, and producing a signal powerful enough to be detected kilometres away. These seem to be the next logical step. Beekeepers may not be reading Wireless World any more, but maybe there will be some redundant radio tracking gear available from Auckland soon, and we can find out more...

Dave Black is a commercial-beekeeper-turned-hobbyist, now retired. 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.

See online story for full list of references.



'Heat maps', a graphical display of drone density in flyways and DCAs using radar data. The left column is tracking of more direct flights, the right column maps when flights become "convoluted" and thus might indicate what are deemed "drone congregation areas". Reference: Woodgate /et al/, 2021, iScience 24, 102499. https://doi.org/10.1016/j.isci.2021.102499

Snuffing-out Foul Brood

Like a "sleuthhound", Aimz is on the case, searching for American foulbrood (AFB) as the last of the honey comes off...

It's been a big two months, but the daylight at the end of the tunnel is shortening. Just as I was getting used to the hard physical labour of summer, that flow is almost over. Honey gathering is nearly at an end, and even the kids are getting to sleep earlier.

In the field, I have been through almost every hive. With only two sites to go, I can taste the end of the honey season. The bees know it too. Scrambling for a free meal, frenzied flocks of them find the truck in the first robbery of the season.

If we're not extracting, we're harvesting in the heat, and until now the bees have been content enough to leave us alone.

Typically, a morning's harvest begins with me throwing my suit on over singlet and shorts. Back brace on tight, I have a new McDavid support that has literally revolutionised my life as a beekeeper. No more spasming back muscles on the ride home, my job has become more enjoyable.

While everyone else gets organised, I am the first to greet the hives. The bees are calm and aware of my presence while I code and number each box with my red crayon. Being able to identify honey boxes becomes important if AFB is found, for they are already stacked on the truck by the time I get into the brood nest.

Following me, our helper smokes up the hives and weeds all the entrances. Our third crewman cracks lids and swaps them out for the fume boards, while getting the blower and stand set-up.

Within minutes we are underway. The blower man sets the pace, lowering honey boxes to the stand in front of the hive, then blasting them with the blower. Skilfully rifling through frames with a hive tool, taking care not to bruise and tear at the honey, while making sure 99% of the bees are forcefully vacated. A good job on the blower will mean a lot less bees being brought back to the shed. This job has the added responsibility of sorting any brood out of the lower honey boxes, which we collect and place back over a hive with a queen excluder.

Once the box is pretty well bee-free, the stacker loads it onto the truck with a well-fitting cover, then comes back for more. After the honey supers are removed, my role as disease inspector begins.

This is a multi-faceted job, and many details of the hive are evident, but really, I only have one focus – finding AFB. I am confident in my ability to detect the disease, and I go into every hive like I expect to find it.

I work a hive in the usual manner, starting in the top box, by removing an outside or second frame and creating a working gap. From there I work my way across the brood box. Any frame with

A typical morning. Time for a quick pic before I get stuck into brood inspection.

Snuffing out AFB. Destroying a hive is the next step in eliminating the disease.

brood is wiggled to dislodge most of the bees and brought to the light for me to cast my eyes over both sides. It is replaced into the box, and I move to the next frame. When I have checked the brood in the top box, I install mite control, then venture into the bottom box and repeat as necessary.

I am checking the majority of the brood in the hive for discoloured, sunken or perforated cell cappings, and open cells containing slumped, discoloured and diseased larvae.

This season I have identified one hive with the fatal bacterial disease. One open cell, slumped coffee-coloured prepupal larva with collapsed segmentation. The presentation alone said it all, and it roped like Caramelo. Without witnessing the process, my brother told me to find another cell, which I could not, but I know my job, and I've learned to stand my ground. "I'll bet my hive tool that's AFB" I told him.

After I got everyone to clean and scorch their hive tools, and wash their hands, smokers and the blower stand with methylated spirits and water, the doubt on my diagnoses still remained.

Now, my brother is a top beekeeper. He's been in the veil pretty much since I started school. He's only been beekeeping with me a few months though as he had a year or two off doing other things.

But he's bigger, older and more experienced. To counter his unsurety and to prove my worth, I took the frame with the suspicious larva home in a plastic bag, as we had an instant test kit in the honey shed. Turns out we didn't need it, and I didn't lose my hive tool in an offhand bet. Under powerful lights we were able to identify one other slightly more decomposed AFB larva, with everyone witness to the categorical ropiness.

How's that for beekeeping brother? He hadn't realised how passionate I am about AFB. I take my job seriously. Like a sleuthhound, if it's there, I will hunt it out.

On a typical day though, I don't find AFB. I might see chalkbrood, sac brood, a queenless hive or drone layer, but I am also not seeing mites, or any evidence of them in our colonies. I probably say this every issue, but for us to bounce back after a soul-destroying whack like last year, I want everybody to know there is light at the end of the tunnel.

Our numbers are building up again. We had amazing hatching success from cells in all our autumn splits, 100% – and the ones we have peeked in on are well mated and laying up hard. Requeening is also underway and we are trialling some pretty blue dotted gals from sunny Marlborough's own Pyramid Apiaries.

Things are going really well. The bees are looking fantastic. In fact, they are remarkable. I love my job. What an immense honour it is to be a beekeeper. Embrace it.

Aimz

Aimz is a second-generation commercial beekeeper in the Bay of Plenty who took up the hive-tool fulltime at the end of the 2024 honey season. Formerly a stay-at-home mum to four kids, she has now found her footing in the family business.

Dad grafting. Our plan for a queen bank is taking shape.

Into the final stretch. The dog days of honey harvest are almost over.

Iran – How Will This Unfold?

As missiles fly back and forward, between Iran and the West, Ian Fletcher analyses both the likely immediate repercussions, and the potential flow-on-effects, including in Ukraine and New Zealand.

BY IAN FLETCHER

So, the Americans and the Israelis have attacked Iran. Overwhelming air power (and some great intelligence work by the Israelis) is dominating. What should we think?

The fighting itself? If there is a target that can be seen from the air, or identified by intelligence means, it will be hit. Iran's top leadership seems to have been killed, or is likely to be. The Iranian response – so far – has been ineffective. It will take luck on their part to score any serious hits.

But there are limits to what the Americans and the Israelis can do. Firstly, they have probably only got enough attack munitions for a couple of weeks. That'll do enormous damage, but it will end. Secondly, the Iranians will be able to make the Israelis (especially) use up a lot of their defensive weapons (the missiles that shoot down missiles). In the short war last year, this was a serious issue and one of the reasons the fighting stopped.

The Americans are calling for the Iranian people to 'rise up' and overthrow the regime. This is borderline fanciful. The Iranians (inexplicably) don't like being bombed, and may rally around the regime. Secondly, the ruling clerical class (the religious leaders) number around 10,000. They are expecting this attack and have succession plans in place (short wars are always good for the careers of the survivors). The leadership welcome a martyr's death, so there will be no lack of volunteers.

> *"The Americans are calling for the Iranian people to 'rise up' and overthrow the regime. This is borderline fanciful."*

Most importantly, the regime security forces have no reason to turn on the leadership. They fear a revolution (they know; they started one in 1979, and it doesn't end well for the losers). So, they will not hesitate to defend their grip on power. In a fight between unarmed civilians and soldiers with machine guns, the machine guns win. History shows that oppressive regimes only fall when either the security forces change sides, or there is an actual invasion. The Americans will not invade. So, don't expect a successful popular revolution yet.

On the other hand, the regime is weak and deeply unpopular. The economy is collapsing, and Iran's non-Persian ethnic groups (about half the 90m population) are oppressed. So, the Iranian government won't want to test exactly how bad things need to get before the security forces change sides. There will be a deal, with new faces on the Iranian side. And probably by the end of March.

At some point, the Iranians will take the obvious package: no nuclear programme, no long-range missiles, and stop supporting Hezbollah and the Houthis in Yemen (the people who attack ships en route to the Suez Canal). In return, sanctions relief. That's a big deal for us all.

It would bring Iranian oil back into the world market – dropping prices long term (the market is already saturated). That would also undercut or replace Russian sales (Russian oil sells cheaply to get around sanctions). Economic pressure on Russia goes up. I also expect the Iranians would stop selling cheap, nasty drones to the Russians. Pressure on Ukraine will drop, perhaps a lot. Iran may also re-enter the market for sheep-meat, especially live sheep. New Zealand used to have a very large market there. We need to consider our response.

In the Middle East, it would leave Israel under less threat, and probably under more political pressure to settle in Gaza (as no one has quite lost yet, low level conflict continues). It would see Iran leave the regional stage for a while – leading to a peace dividend in the Gulf States (investment boom ahead). And it would leave Turkey as the largest regional power other than Israel. We should all pay more attention to Turkey, and to the troubled region along Iran's northern border, from Turkey to Afghanistan.

"At some point, the Iranians will take the obvious package: no nuclear programme, no long-range missiles, and stop supporting Hezbollah and the Houthis in Yemen..."

What lessons should New Zealand draw? Firstly, much as we might not want to face it, we are totally dependent on American power. We use American software (Microsoft, Apple, social media, for example), over an internet that is largely American controlled. We rely on the US to keep global sea-lanes open, and trade and borrow using a global financial system that is dollar-driven. The Iranian war shows today that the US is able to impose itself by force anywhere, except where it would need to use ground forces (the Americans just won't accept the sort of losses the Ukrainians tolerate, for example). So, they are absolutely dominant in the air, sea, financial and cyber domains. For New Zealand, that means this power underpins our way of life. We may be repelled by cavalier acts of aggression, but we need the aggressor. Foreign affairs always involve moral ambiguity, and here it is.

This war is notable as the first one for decades where the US Administration has not notified Congress in advance. This reassertion of executive power (back to the way things were before the Vietnam War) is relevant: the American world view is now less benign, less patient, and more inclined to conclude that the end justifies the means. Gunboat diplomacy is what it used to be called. It's back. Just ask the Cubans.

"Gunboat diplomacy is what it used to be called. It's back. Just ask the Cubans."

At the same time, the balance of powers within the US is in flux (with the federal government, States, the courts and Congress all jostling for position). The US Constitution is 250 years old. It's being changed as we watch, without actually being amended. Politics is always the art of the possible.

A final thought: Israel (especially Netanyahu, the Prime Minister) has talked up the 'imminent' threat of an Iranian nuclear weapon for decades. If he's right, we're about to find out.

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.

Apiarist's Advocate is brought to you by Patrick & Laura Dawkins, Marlborough beekeepers.
Apiarist's Advocate Ltd.
NZBN: 9429051156954
ISSN: 3021-4742
www.apiaristsadvocate.com
www.facebook.com/apiadvocate
www.instagram.com/apiarists_advocate

Editorial

Editor: Patrick Dawkins

To make comment or send press releases please email **editor@apiadvocate.co.nz** or phone **Patrick, 027 383 7278.**

Creative

Design: Ashleigh Ryan

Advertising

For more information or to make a booking, email **advertising@apiadvocate.co.nz** or phone **Patrick 027 383 7278** or **Laura 021 130 7446**.

Booking deadline is the second to last Friday of the month prior to publication and artwork must be supplied by the final Friday of the month.

Don't miss the latest industry news

SAVE

Save *Apiarist's Advocate* to your mobile device for ease of access anytime! Just choose the download option from the bottom menu, then the Save to Home Screen option from the next menu.

PRINT

Print *Apiarist's Advocate* anywhere! Our layout is designed to fit A4 paper, so whether you're at home or work, simply hit print for your hard-copy.