

SOUTHERN NORTH ISLAND BEEKEEPING GROUP INC

October 2018

We have had a steady stream of membership applications. Beekeepers with hives from one to 2000 plus. Thank you for joining us.

A couple of members have contributed articles this month which is great.

If you want to know something or share an experience, please forward questions, articles or ideas to me. Remember in beekeeping there are no dumb questions. We all started as new beekeepers at some stage. From the hobby ranks and the family businesses come our next generation of commercial beekeepers.

What's Happening

Coming into spring we have heard that varroa levels in some areas are quite high and that a few commercial beekeepers up north have lost a lot of hives. My losses are far fewer than last winter.

Analysing my winter losses, starvation in my nucs caused half a dozen losses. I didn't get back to them quickly enough to feed them. Several hives starved because the colony was too small and wouldn't move up to the honey super after they started brood rearing in the super below. (Being in a site shaded from the winter sun also wouldn't have helped).

The small size of the colonies was initially caused by high varroa numbers that failed to respond to Bayvarol®. At the end of the treatment, mite levels were still 10% and it took a while for formic acid to bring down the level to nothing. These hives had been close to hives that migrate around the North Island so that's where I think the resistant mites came from. Although the colonies looked OK and were still a full box of bees at that time, but their numbers dropped during the winter.

At our group's last meeting Gary said that unlike previous years, this Winter, a Bayvarol® strip in each nuc hive had failed to control varroa indicating that resistance to this chemical is spreading. It was suggested in the warmer areas that a 25mm piece of Apilife var® worked OK.

*“Membership is
now over 80
thank you for
joining”*

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A lot of beekeepers are starting their treatments too late into the autumn and by the time they do treat, the damage is already done although not evident by looking at the bees. Also if we are not all in sync with the type of treatment used and the timing, it's likely when one treatment finally fails and the hive is robbed out, these resistant mites are quickly spread through the area and all hives suffer. It is important to note that when looking at the efficacy of a treatment which say starts in year one as being 86% effective, it could be that in every following year, it loses some of that efficacy or in other words the mites start to build a resistance. It may be only 4-5 years for that treatment to become only 20% effective. As beekeepers we only see it at the 20% effective stage because all or a sudden, we see a lot of more 'alive' mites.

As a group we should be coordinating the type of treatment that shouldn't be used at certain times of the year. The main treatments are Amitraz (Apivar® and the new Ecrotec product) Apiguard®, and all the organics whether in wafer, strip or liquid form. Both Apistan® and Bayvarol® need to be monitored for effectiveness as they have been the most used treatment in NZ - ie from the start when varroa was first found in 2000. Monitoring before and after a treatment will see if it is as effective as it once was. Keep Bayvarol® until robbing time having first knocked mites down with something else. This way we hope to mitigate mite bombs. We'll need to discuss this at the meeting some time.

What's Flowering

Our weather in Wellington has been very mixed, not like some parts of the lower North Island where it's been mild and warm. Gosh Wellington got to 20°C for two days, mid September. Almost unheard of for this time of the year.

My peach and pear trees are flowering and not a bee on either. I have two small nuc's but the bees are flying to other sources it seems. I have hand pollinated some flowers but thought I might encourage bees by spraying scented sugar. Now I have bees, flies and wasps on the trees but nothing touching the flowers. Sometimes you just can't win it seems.

Along the bush fringe and in the under-story, the first of the natives are flowering signalling the start of the bush honey flow in my area.

These are:

Hangehange (*Geniostoma rupestre*). This shrub produces a sweet scent you can smell three or four metres away. It has small creamy flowers along the branches.

Kohuhu (*Pittosporum tenuifolium*) puts its scent out in the evening to perhaps attract moths. I have mostly seen bumble bees working this late into the afternoon when honey bee activity has finished. Small crimson flowers along the branches.

Kowhai (*Sophora tetraptera*) has put on a wonderful flowering this year. This tree literally drips nectar at times. I took a photo of the nectar on the foot path under a tree. In my garden one is flowering for the first time and a



Next Meeting:

2nd October 2018

Up for discussion at this months meeting:

- “Project Helena’ Slovenian/kiwi bee keeping cadet scheme - up-date
- Field day planning Sunday 28st October
- Regional reports
- Bring your Lunch.....Tea & coffee provided



bumble bee has bitten into the back of the flowers or was it a Tui taking a short cut to the nectar. The seeds of this tree are poisonous and the nectar I was told, produces a narcotic that has the effect of stupefying the bees which can result in them being chilled and dying in large numbers if the temperature drops during the day. Recently I was told this effect is caused by the nectar fermenting in the flowers. I wonder which is correct. Perhaps both as conditions vary from region to region.

Karo (*Pittosporum crassifolium*) has flowered well on the coast for more than a month.

Ti kouka / Cabbage tree (*Cordyline australis*) is flowering in some warm spots while others are still putting out flower spikes.

Tarata /Lemonwood (*Pittosporum eugerioides*) has just started flowering. Last year a hive in the city put on five kgs a day when this was in flower. This also has a sweet scent.



‘Sustainable Beekeeping

The number of hives in an apiary and the conditions around the apiary affect the development of hives and ultimately the honey production. A single hive at my son's property has put on four kg per day according to the brood minder scale during this last fine warm spell mostly from Darwin's barberry which is in full flower.

Most of my hives in apiaries of 12 to 16 hives have been putting on half a frame a day. Commercial beekeepers with 32 hives in an apiary are still feeding. This observation or type of monitoring confirms to me how much ‘overstocking of hives’ depletes the resources for the whole apiary.

American Foul Brood

Yes, AFB is still in the area. I have found five this spring some only in the last brood cycle. A much better result than last year but you have to be vigilant and flick off cappings where the brood is emerging. One hive looked great until I removed some cappings. I quickly reassembled the hive, mark it and used sodium hypochlorite to disinfect my hands and hive tool before moving on to the next hive.

I am hearing that some hives close to corporate hives and their yards are getting the odd hive with AFB. Likewise if you think back to autumn as to whether your bees were robbing, you may now be just paying the price of that robbing.

Be vigilant.



Hive Condition

Some two brood box hives have just a super of bees. Upon looking further, they have four frames of capped brood but the brood nest has been confined to these four frames because of solid frames of pollen either side. I have been moving one of the pollen frames out one frame and putting a well-drawn empty frame of worker cell next to the brood. On my next visit in 10 days to two weeks (depends on the weather), I'll move the other pollen frame out one so the brood nest gradually expands.

I noticed one strong hive with bees in three boxes with lots of stored pollen. I looked further at the brood and this was patchy, however I noticed a torn down queen cell and most of the larva in the missed cells were all the same age. This hive re-queened itself. She must have mated on one of those fine days when our temperature got to 18 degrees.

Another strong hive had a queen cell and upon closer inspection I saw an egg in it. I gave it another super but left things as they were. I'll be able to use this hive to produce a bar of cells on my next visit after removing any natural queen cells the bees have started.

Beekeeping this month.

Mark any hives with poor queens for replacement. Old queens lay well to start with but fade as soon as the pressure goes on. Give them a shake of nurse bees from a strong hive to keep numbers building, until you can replace the queen.

For those hives with good queens, they may need room for expansion. As above, move an outside frame in beside the pollen frames so the queens have somewhere to lay. Add a honey super so the bees have room when this last lot of capped brood emerges. Put the odd foundation frame in to replace any with too much drone comb, is dark, old or has a broken lug.

If you see queen cells, put aside the urge to run them through with the hive tool. Instead put at least one of the frames aside until you have found eggs indicating the queen is still there.

As for the queen cells, look at where they are located. Just a few in the centre of the frame indicates a

supersedure. Along the bottom indicates swarming. If swarming, split the hive immediately by taking the old queen along with three frames of capped brood covered with bees to a different site.

I mark my queens so generally they are easy to spot. If you can't find the queen and there are only eggs in the queen cells, divide the hive with a queen excluder and come back in four days. The part with the eggs has the queen and this can be removed to another hive stand. If the queen cells are more developed, sift the bees through an empty box with a queen excluder nailed to the bottom.

Tip: Put 100-mile-an-hour tape along the inside at the top of the super. The bees going up the sides will not go past the tape and are easier to smoke through. If you still can't find her, look under the base board. Some like to hide. Still can't find her - divide the hive anyway leaving a queen cell in each half.

Propolis Some bees collect a lot of Propolis and some apiaries are better located to collect Propolis - those that are generally close to willow and poplar trees. Get your mats on early. Change them when three quarters filled.



Brick or Stone System of Record Keeping

Grant Hayes - Catlins Honey, Invercargill

The brick or stone method has been developed over several years as our operation has expanded, due to it taking too much time for previous record keeping; eg getting less hives done per day.

All hives have a single brick or stone approximately the size of the brick on the hive lid. Some sites that are too close to public areas we only use stones, as some people deem our bricks more valuable to their gardening exercises than our hives.

The Brick System

During the season, if anything is happening in the hive that we may wish to investigate next visit (time) the brick is put on its edge indicating to have a closer look next time. In some cases a note may be made with builders pencil on the lid. When working hives any hive with a brick on its edge – the beekeeper looks for a written note on the hive lid, if none, checks the hive and looks for any indication of something not normal (queen not laying at 100% etc).

At some stage during the season we mark all our existing queens with a queen marking pen. We don't

follow the international year code as most queens are replaced every year. We use different colours to indicate different breeding lines and this is changed from year to year because there may be still some two year old queens. Any queen ear-marked for replacement (e.g. bad temperament or laying pattern) is marked with a red queen marker, and a second brick placed on top of the hive to indicate the hive is to be requeened. Any hives that are two brood box and are selected for spring splits we locate the queen and ensure she is marked, and place her into the bottom brood box (which ever brood box we choose to put on the bottom) a queen excluder is then placed between the two brood boxes. The hive is marked to requeen next visit (which is normally in a weeks' time so that the top box only has sealed brood). Then at the next visit when we have either queens or cells with us we can quickly and efficiently requeen the hives that need to be requeened, without having to spend a lot of time going through the hives. The hives that are requeened have a new queen introduced, the second brick taken off the lid, the remaining brick left on its edge and a note made with builders pencil with the date and that the hive was requeened.

Hives for splitting – we either check the top brood box to make sure there are no eggs, meaning either a second queen or the queen has got through the queen excluder, and if no eggs are present either split the entire brood box off the hive, place either a queen or queen cell on the box with a new roof and floor, strap it up and put it on the vehicle to take to the next apiary, or if making nuc's we take two frames of brood, possibly one of honey and shake enough bees into the nuc box off either one or two hives, then strap it up and put it on the vehicle. This means we can do a lot of requeening or splits without spending a lot of time finding queens – which of course some you can never find when you need to. Hives that have been requeened, on the next visit are examined to locate the queen, if it is an unmarked queen you know that your split has been successful, and the queen is marked with the chosen colour for that line. If there is still a marked queen in place it means your requeening was unsuccessful and you need to try again.

Autumn

A similar system is used in the autumn when wintering down the hives. Once the hives have had a couple of feeds of sugar syrup any hives that are heavy enough and do not require further feeding are marked with a crayon mark on the brick. This indicates to us that that hive has been wintered down, and at subsequent visits we only need to pay attention to hives that do not have a crayon mark on their brick. We continue this until all hives have been marked as wintered down. We use a different coloured crayon each year to avoid confusion between years, although the crayon mark seldom lasts more than 18 months. Any woodware needing replacing is marked at the time it is noticed to be replaced when replacement gear is available on the truck. Boxes are marked with an x on each end of the box with a crayon if they need replaced for any reason, frames are marked with a line using queen marking pen and moved to the outside of the brood box

We carry a notebook in all bee vehicles to keep a quick note, eg

- how many hives are at the apiary to update apiweb,
- how many singles,
- how many doubles,
- how many doubles are strong enough to be split,
- number needing requeened.



This enables us to plan which apiaries go to make splits and to requeen, helping us to know what to do with the queens we have available for the day.

The changes to the system are:

If it is a windy site, we add one more brick to keep the lids on (in the odd case 2 more bricks) If using stones instead of bricks – instead of turning the brick on its edge (which you can't do with most stones) a second stone is added. If it is to be requeened a third stone is added to help form a “T” on the top of the lid. Of course on windy sites we just add one more stone.

As AP2s we were always taught to make sure we put the hive back exactly as we found it as different beekeepers have similar systems involving twigs etc that no one else understands, but it does upset them if they cannot follow their own system because their bricks or twigs have been changed.

What's new on the SNIbeekeeping.nz website

Trevor Bryant has given me copies of the 1982 and 1986 kiwifruit pollination seminar proceedings. In the 1970 & 1980's kiwifruit was being planted all over the North Island. Production was very mixed, from orchard to orchard and district to district due to orchard design, poor males, the number of hives used per acre and varying quality of hive provided by beekeepers.

MAF started running seminars to educate both the growers and the beekeepers.

Trevor Bryant was the MAF Apicultural Officer for the Bay of Plenty at that time and was involved in running these seminars. I have put his 1982 and 1986 seminar papers on the website as PDF's.

Since that time we have seen new varieties gold planted and the devastating effects of the Psa bacteria. Very little has changed as far as the beekeeper is concerned apart from new Biosecurity requirement orchards require to keep Psa at bay.

Kiwifruit is now concentrated in Northland, the BOP, Gisborne, and Motueka because they mature faster in the warmer areas. There are still scatterings of orchards in other districts but now not so many. In the last few years more orchards are now being planted with expanding gold around the Gisborne and Hawkes Bay districts with the requirement for more hives will be required in the future. Average crops now average 14,000 trays per hecter (top produce 15-17000 trays).

Any beekeepers considering pollination should be aware of the hive standard required for kiwifruit production. NZ MAF produced the AgLink 866 by Bryant and Vardie which still holds true today.

Those wishing to pollinate other crops should refer to the McGregor's 1976 pollination bible - "Insect Pollination Of Cultivated Crop Plants", recently reprinted by Root's but costs more than the original price of \$5.90. or you can download the PDF version.

<https://www.ars.usda.gov/ARUserFiles/20220500/OnlinePollinationHandbook.pdf>

Try this for an alternative method of varroa control

It uses Food Grade Mineral Oil, bees' wax, and honey, which is melted together and has cotton cords soaked in the warmish mixture, drained and placed over the brood frames.

I have used this alternative method for many years and can honestly say that since I started using it I haven't had a varroa problem. Allan Richards and Neil Farrier also use FGMO soaked cords, in their commercial operations, so it isn't just for the hobbyists.

First prepare the mixture, which for ten hives is 125 gm of wax melted with 250 gm FGMO, and has 125 gm of honey added when that is melted. **(Alan and Neil use sugar syrup instead of honey)**. Then turn off the heat and add the new or used cotton cord cut into any convenient size, which soaks up the warmish mixture. The cord is set out over cake racks to drain, and when cool is placed into a container to take out to the hives. If the mixture is too hot when the cords are put in, too much of the mixture will drain out of the cord and they won't be so effective. The mixture that has drained off can be put back to treat more cord. It takes about one metre of treated cord for each brood box.

It isn't necessary to smoke the hive or put on protective clothing in the winter as it only takes a couple of minutes from beginning to end to open and treat each hive. It is so quick and easy to remove the used cords that had been put directly on top of the brood for the previous fortnight and to replace them with the fresh batch.

You would need a mesh floor on your hives with this method because the bees groom themselves when they get sticky with the oil and the varroa fall off down below the mesh floor. If you have a sticky board more than 40ml under the mesh the live varroa can't jump back up to the hive floor. I always clean off the sticky board every fortnight as I also use that as a visual method of knowing what is going on in the hive without actually taking out frames to check, eg I can find out how many frames of brood, and which frames of honey they are using. I can tell that by the type of wax that has fallen. I don't always replace the oil on the sticky board either. That is not necessary, until you actually want to count the varroa that have fallen and died. I hardly ever use the sugar shake or the alcohol wash now because I only ever get one or two varroa in the bottom of the jar so it isn't worth the trouble as the FGMO method of control is obviously working for me.

In the winter the most varroa that I ever get on the sticky board would be three or four falling in the fortnight. Sometimes If I quickly want to check the varroa load I would check and clean off the sticky board twenty four hours after putting in the fresh FGMO cords.

This method is time consuming as the cords have to be replaced at least every three weeks but it has advantages in that you can prepare everything beforehand and only have the hives open for a short period. It is safe for the bees and the beekeeper, is cheap, quick, and very effective if done regularly. However I do use chemical strips, (Bayvarol and Apivar) twice a year as well, but when there are no varroa falling after about five or six weeks I often take them out and go back to using the FGMO cords, which can safely be used in the brood boxes when there are honey boxes on.

If you only have a few hives you can reduce the ingredients of the mixture as long as you use double the amount of FGMO as you have honey and wax. The prepared cord can be stored in sealed containers in the shed for months, without deteriorating. Save the used cords. They can be used repeatedly for years unless the bees chew them to bits when you leave them in the hive too long.

Neil sells the cord, FGMO, and thymol as well, if you want to add a small teaspoonful to the mixture.

Anne Hulme

Cord Varroa Treatment

For 60 beehives using one metre of cord per hive.
The one metre is usually cut in half to make handling more practical.

Ingredients:

- 1000 ml of FGMO (Food Grade mineral oil)
- 1000 gm of Beeswax
- 1000 gm of Honey
- 100 gm of Thymol Crystals

Method:

Place 900 ml of FGMO in a container and heat, but do not boil.

Place the remaining 100 ml FGMO in a jar and add 100 gm thymol crystals.
Place this jar in a container of warm water to heat and dissolve the thymol crystals in the FGMO inside the jar.
(Double boiler method)

Add the 1000 gm beeswax to the 900 ml of FGMO and let it melt and dissolve. Keep stirring the mixture.
Once FGMO & Wax is mixed and wax completely melted , Take the mixture off the heat source and Add the 1000g honey and stir in .

Now add the 100ml FGMO that has the 100g dissolved thymol crystals to the mixture.
The latter is best done outside to avoid the thymol fumes causing problems. Wear a breathing mask.

Remember Wax melts at around 62/65 degrees

Now place the cords in the mixture/emulsion, stirring them in with a suitable piece of wood. Or use rubber gloves. Do this till all the emulsion is absorbed into the cords. (easiest way is to lay out cords in a tray or hive roof and pour the mixture over the cords)

Remove with tongs and store in an airtight container, small lots use an ice cream container or wrap in plastic for larger lots.

- Use safety gloves and goggles during the preparation.
- Place on top of frames in the hive and replace every 2 to 3 weeks.
- **Do not use Thymol Crystals in the mixture when honey supers are in place.**
- **Alternative to using honey - 1 litre sugar syrup plus 500 grams icing sugar** – add as per honey and stir well in, try to get rid of any lumps of icing sugar and make a smooth creamy paste.
- For smaller numbers of hives just work out a smaller lot of everything – eg 10 hives = 10 metres of cord divide the above FGMO, Wax etc by 6 to get the proportions right

Neil Farrer - Phone 0274579634 email - nfarrer@xtra.co.nz

Make sure that when you are using honey that it has not come from hives with AFB.

These days while there is so much AFB around best to use sugar instead of honey.



Photo Graham Pearson

Queen Introduction

There are at least forty to sixty different ways to introduce a queen into a hive.

Here are two examples :-

1. The paper bag method - after de-queening the hive, make 8-10 pin holes in a white paper lolly bag, put in about thirty nurse worker bees and then the queen, fold over the top of the bag so no bees can get out, gently shake the bees in the bag for about 30 seconds, and slide this in between two brood frames. Half an hour later, the bees would have chewed through the bag and because the queen now has the same odour as the hive, she is accepted.
2. With your finger, make a hole in the honey comb and gently press the new queen into this hole. She will get covered in honey and the bees will have to release and clean her - she will then be accepted.

These days, replacement queens are quite expensive so it's important that we look after them and protect them so that each is successfully accepted into a colony.

As soon as the shipping cage arrives in the mail, give the bees one drop of water. Don't over do it.

Keep the cage/s away from sunlight (queens are easily cooked if left on the dash board of a vehicle - we have all made this mistake) and keep her away from areas where fly spray is used.



Without marking your queens, you don't know how old they are. I would suggest that all beekeepers learn to mark their queens. In saying this, there are queen breeders who do not mark queens as they feel the bees may not accept a marked queen.

I prefer to mark my queens and in a hobby club hive situation, marked queens are easier for new beekeepers to find.

Most beekeepers don't like handling their queens because they are easily damaged but learn to pick them up by their wings (their handles) and then transfer the queen to your other hand, holding it gently by the thorax between the thumb and forefinger.

Practice marking drones until you have mastered the technique using your last two fingers against the other hand to hold your hand steady while marking the queen.

***TIP:** In hot weather, mark your thumb first so that any paint blob on the nib is removed. I have put too much paint on a queen and if over the eyes she will be superseded*

Don't use the same colour on the drones that you intend to use to mark the queen. If you are still not competent, purchase a queen marking kit which pins the queen softly while you mark her.

After marking, allow the paint to dry for a minute or two before releasing her back into the same area on to the frame you picked her up from. Sometimes the bees will smell the paint and jump on her. Just push these bees aside with your finger and she will go on her way without any further hassles from the guard bees. Some queen producers will mark the queens for you.

I mark my queens when they arrive. In the kitchen, against a window, slide open the cage so she flies to the window. Catch her off the glass, mark her and then return her to the shipping cage. Hold your thumb over the opening after each time you return the escorts so no bees get out again. If she's going to be put in a queenless nuc immediately, you don't need to put the escort bees back into the shipping cage.

Don't do this in a vehicle as the queen can easily be lost down the air/heating vents.

The best paint pen available is the uniPOSCA poster coloured marker which can be purchased from any craft shop or bee supply company. Another paint available in the USA is distributed by Michaels Art Supply Stores. They sell tiny bottles of paint and thinners made by the Tester Corporation Rockford, IL, USA.

Michael Palmer, Queen breeder from Vermont uses these tiny paint pots and for a brush, he used the seed head stem of a common grass. The blob of paint produced from this grass stem is approximately half the size of a queen's thorax. If you put paint on her head, immediately dunk her in water and gently rub it off.

New queens are best introduced into a nucleus hive full of young house bees with two or three frames of emerging brood.

Often a new queen introduced into a full size hive will be killed as the older field bees know the scent characteristics of their queen and recognise her as a foreigner.

To be accepted, both queens should be producing the same amount of Queen Mandibular Pheromone (QMP). I.E. the old queen's pheromones are declining and the new queen's are rising and both queens are laying at the same rate.

This was proved by Steve Tabor in the 1965 (Breeding Super Bees, page 124). He believed to introduce a queen, the hive should be in balance of pheromones produced and received by each of the three groups; adult bees, brood and the queen. He transferred laying queens between two hives, 292 times without a single loss. You can do this also. Pick two hives of the same size and brood area with the same brood pattern, (queens laying at the same rate). Find both queens and pick them up and then put each queen from the other hive, down on to the same section of frame the other queen was lifted off from. Both queens will move over the frame, now in different hives as if nothing has happened and the bees will take no notice of them.

Most beekeepers introduce their new queen in the shipping cage she came in. This can have problems.

At the Second Australian and International Bee Congress in 1988, we had an evening session on queen problems with Prof Dr Jerzy Woyke from Poland. At that time he was with the Bee Division, Agriculture University Warsaw, Poland and a world authority.

He told us the most common cause of queen supersedure after introducing a queen cage was caused by the bees chewing off the tarsal pads from the queen's front feet. These pads leave a chemical signature (pheromone) on the surface of the comb to tell the bees that the queen has been here. Without this pheromone, the queen is not complete and will be superseded.

The quick solution to this problem was to wrap sellotape® around half the cage thus creating a sort of sanctuary where the hive bees can't get at her.

A common mistake is to release the queen too early.

When you make a hive queenless, within twenty minutes all the bees know the hive is queenless and will immediately start producing emergency queen cells and the colony "roars" if disturbed, (smoked).

If you pop in the shipping cage and she gets out of the cage within a day or so, seemingly accepted, the bees continue to feed these emergency queen cells and when these emerge, they are likely to kill your new queen.

Best leave her caged for four days, open the hive again and inspect all the frames which had eggs and young brood for emergency cells. They will be extended slightly and will be milky white - full of royal jelly. Flick all these out with the hive tool and then break the tab off the shipping cage so the new queen can be released by the nurse bees chewing through the candy.

Even then she may not be accepted until she's actually laying and this is the reason you do not disturb the hive for another 10 days. This gives the queen time to come on to laying and be accepted by the bees as their new queen.

Even then she may not be accepted, as quite often there are two queens in a hive, especially if you don't use queen excluders.

Fail Safe Method? Use a "push-in" cage.

I prefer to use a very old method of introduction using a "push-in" cage which is said to give a 90% assurance the queen is introduced. These are made from No5 hard wire mesh about 200 - 300 mm square, (four to six inches) in size.

After finding the queen and either killing her or putting her in a nuc made from the same hive, select a frame on which brood is emerging, with pollen and honey around the edge of the brood. Shake off all the nurse bees and place the cage over the emerging brood and honey but not against the edge of the frame as the wax cells there are thinner and the bees can easily undermine the edge of the cage, get in and kill your queen.



Press the push-in cage slightly into the comb so you know it will fit. Don't worry about squashing a few cells around the edge of the cage.

To put the queen in requires her to be caught. Walter T Kelly's in the USA manufacture a yellow muff made out of fly screen material to do this. You slide open the cage in the muff and catch her. She can't fly away. Be very careful when withdrawing your hand from the muff as the elastic around the wrist area is tight and you could take her head off if you don't protect her. Spray her lightly with warm water and place her under the middle of the cage and press the cage down firmly so that its sides are half way into the comb.

Another alternative is just dunk the shipping cage in warm water for a few seconds to wet the queen. She now can't fly and can be caught and be popped under the edge of the push-in cage. Just make sure she's in the middle of the cage before pressing the cage firmly into the comb. The beauty of this method is that you can requeen a full size hive.

Re-inspect the hive four days later by which time she should be laying in the cells, still protected within the push-in cage. Before removing the cage, check other brood frames for eggs, which could indicate another queen. Also check for emergency cells which are generally tucked in at the side of the brood where eggs were and rub these out.

You can then remove the cage and she will wander off over the surface of the frame looking for cells to lay in, as if nothing has happened. The bees will move out of her way. She is now an accepted queen.

If however, one bee jumps on her she is not accepted and cage her again for another four days. This could be an indication you could have a virgin in the hive. In another four days, look for an area of cleaned out cells on another frame. The bees may have prepared this for a virgin that is just about to start laying. Look for a virgin queen (they move faster than a mated queen, being nervous on the frame) and if you can't find her, sift all the bees through a box with a queen excluder on the bottom.

Rob Manley in his book Honey Farming used to leave the queens caged for nine days, releasing them on his next visit as part of his usual spring inspection regime. This fits in well with a commercial beekeeper's spring inspection rounds.

In introducing queens in this manner, it's also possible to get a very good varroa mite kill nineteen days after you put in the new queen, all the other brood will have emerged and nearly all the mites will be "phoretic" meaning they are on the bees. This is the best time to kill your mites with just one application of a miticide.

Introducing valuable queens

Introducing bees from a difference race can also be complicated. I have had a lot of Gary Jeffery's queens and the very valuable ones were superseded in a month.

Gary's method for introducing valuable queens is to make a package bee unit. That is, shake all the nurse bees off five brood frames from a strong hive (after finding the queen) into a nuc box with a couple of frames of honey and pollen and drawn comb in the middle. Release the tab from the shipping cage and press the cage with the front exposed between two frames in the middle of the nuc. If it's hot, add a wet sponge under the frames. Close the nuc and store it in a dark, airy place for a couple of days. This stops any robbing or bees drifting back to the original hive. After another couple of days, the queen will have been released from the shipping cage so the nuc can be placed out in the apiary with a soft grass plug in the entrance to make the bees orientate to this new spot.

The bees in this case have no option but to accept the queen as there are no brood or eggs for them to make another queen, and by this time, she's been accepted. Like before, leave the nuc undisturbed for a week before quickly checking for eggs.

Queen Cell Introduction

Murray Reid in his research as an Apiary Advisory Officer for MAF, 1980's researched the direct introduction of 10 day-old sealed queen cells.

He found that if they were "protected" with the end of the cell exposed, the virgin queen will emerge and 80% of the time would take over the colony.

Queens and bees will attack a foreign queen cell and tear it down from the middle, not the end where the new queen emerges. We can protect the cell by wrapping it in oven foil, masking tape, insulation tape, irrigation hose or a purchased cell protector. Some say you don't need to do this but I prefer to be safe and protect the cells. It also helps it to keep the cell warm.

At the 10 day old stage (after grafting, day 13 from the egg) the new queen is not as fragile, so can be

put anywhere in the hive where there are a good number of bees, i.e. in the middle of the top honey box.

Tweeddale's of Taihape use queen excluders on their hives and it's a lot of work to remove supers just to put in a queen cell. They found it easier to introduce their protected cells on to the bottom board of the hive, in the centre where the bees hang down. These bees will keep her warm and she will emerge in a couple of days ready to take over the hive.

48 hour queen cells

There is another method and that is to put 48 hour old queen cells into a hive. http://www.wicwas.com/sites/default/files/articles/Bee_Culture/BC2012-06.pdf

The 48 hour cell is pushed into the middle of a brood comb just where a natural supersedure cell would be. Arataki Hawkes Bay used to use this method to replace their queens. Basically it uses the supersedure impulse of the bees to rear the queen cell and when she emerges, she kills the old queen and takes over the colony. The beauty of this method is that a lot of cells can be produced quickly, easily transported and are not so susceptible to damage. This method suits a large beekeeping operation, doesn't need specialised queen producing hives to look after cell bars or mating nuc hives.

Virgin Queens.

A just emerged virgin queen doesn't have any pheromones and can be placed in another hive without any protection or just run in the entrance of a hive with a little smoke.

A day or two older and they will have developed some of their queen pheromones so it may not be as easy to run one into a hive. I would suggest at this stage, the virgin queen is introduced in a shipping cage.

Purchasing Virgin Queens.

There is a trend today to sell virgin queens. This is a win-win for the seller as generally only 50 to 80% of queens are successfully mated, (the closer to a drone congregating area, the higher the percentage), and gives the queen producer a quick return although at a lower price.

The beekeeper takes the risk that she is accepted into a nuc hive, has good weather and that she returns from her mating flight.

Queens only have about three weeks in which to get mated.

If you want to know of more queen problems look at Dave Cushman's Pink Pages website: <http://www.dave-cushman.net/bee/rogerpatterson.html>

If you have another method that works for you, please share it.

Drones—continued on page 21

TIME FOR A LITTLE HISTORY -

The proceedings from the second Australian and International Bee congress 21-26 July 1988. A paper by Allen McCaw, President of the National Beekeepers Association on Industry Planning.

It shows how the industry worked, 15 active branches, remit meetings that made recommendations to the executive but most import of all was the planning sessions that put forward a united industry plan that was able to better meet the challenges ahead instead of trying to resolve issues after they were put on us.

From this planning, we engaged the services of a marketing whiz Bill Floyd who really started promoting honey to New Zealand chiefs and through polytechnic cooking schools. At that time we were the highest per capita consumers of honey in the world. The change in direction from clover to monofloral honeys and with the funding from the Honey Trust lead to the manuka research by Dr Peter Molan whose discoveries and promotion of that honey, incidently took twenty years to take off. Just after this research was publicised we took manuka honey to Australia and couldn't give it away. Now look at the situation.

This type of planning was used by individual business to set goals and is why our industry is thirty years ahead of the beef industry who is still set in a commodity mentality with their prime beef mostly going into hamburgers.

We seem to have drifted back into the same mentality pre-1984 again, with a top down structure and MPI telling us what to do and making regulations with no real expertise in how our industry or a bee hive works.

We had committee structures using volunteers that assisted with planning and were tasked with implementing the plans. Some committees within ApiNZ are working well; the science committee for instance is working away behind the scene trying to get the sprays and poisons better regulated, the trees for bees is still going. We have a greater knowledge of our best pollen sources, albeit, that farmers have removed every bit of weed species from their land that our bees depend upon. Hopefully we will see a swing in the opposite direction and hopefully are now seeing the error of their ways having polluted our streams and rivers.

The education committee is working to get a universal training scheme taking away the opportunities on the smaller institution to teach bees just for the subsidy money government provides.

Today there's an individual, me first mentality and a reliance on a paid executive and MPI officials that have no history in beekeeping making decisions for us. MPI expecting beekeepers to put in submissions when they just don't have the time. Also in the 1980's, the beekeeping population had a reading age of a nine year old. At this time we were getting university trained members dropping out of their professions and taking up beekeeping and these individuals changed our industry.

If the Minister wants us to change from our "cowboy attitude", they have to get out of their offices and meet with groups and discuss things well ahead of time and earn respect. We need to know what's ahead so we can plan for change instead of being given three months notice of changes.

We need to foster leadership training so those committed to beekeeping are better able to handle situations within their businesses so they then have time to give back to the industry.

Here are several:

- Kellogs <https://ruralleaders.co.nz/application-kellogg/>
- Victoria University <https://ped.victoria.ac.nz/courses/757-emerging-leaders-programme>
- Federated Farmers. http://www.fedfarm.org.nz/FFPublic/Leadership_Development/Federated_Farmers_Leadership___Development_Programme.aspx

Here is how you can fund this:

- <https://agmardt.org.nz/?c=resources&page=newsevents&article=2018090503>

A Progressive Planning System in Use in the New Zealand Beekeeping Industry

MR. A.J. McCaw, National Beekeepers' Association of New Zealand, Milton, South Otago, New Zealand.

Introduction:

Most beekeeping countries in the world have an administrative organisation whose prime responsibility is to represent the interests of beekeepers both within and beyond that country. The National Beekeepers' Association of New Zealand (NBA) is one such group largely representing "commercial" beekeeping interests, but considered to speak on behalf of the whole beekeeping sector.

Voluntary input is a key factor in the operation of many such organisations, and the use of a formalised Planning System in recent years by the NBA has greatly assisted in ensuring continuity of activity, and a forward-looking approach to the future for the beekeeping industry in New Zealand. Before describing this system in detail, a brief outline of the structure of the industry, and the NBA, is desirable.

The New Zealand Beekeeping Industry

There are approximately 7,600 beekeepers in New Zealand registered with the Ministry of Agriculture Apicultural Division under the Apiaries Act (f969). Of these, around 7000 own less than 50 beehives and are categorised a "hobbyist" beekeepers, with 600 "commercial" beekeepers who each own more than 50 beehives. This latter group own the majority of the 330,000 beehives in New Zealand, with the larger number of the hobbyist beekeepers owning less that 10% of all beehives. (Figure 1.)

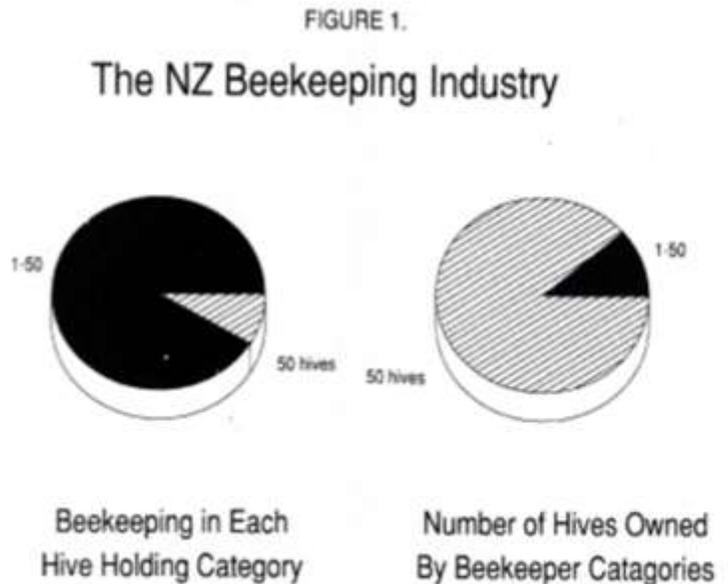
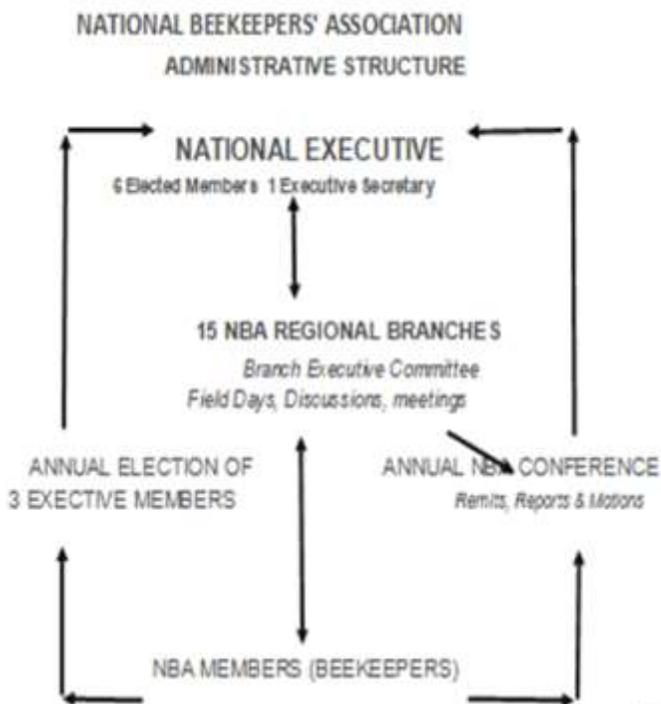


FIGURE 2.



The National Beekeepers' Association

The NBA has 1200 beekeeper members, consisting of the 600 commercial beekeepers, who pay a statutory annual levy for each hive owned; and 600 ordinary members, who subscribe to the quarterly "NZ Beekeeper" journal and receive a membership. The administrative structure (Figure 2) consists of a National Executive of six elected beekeeper representatives, fifteen regional NBA Branches, and the core membership of beekeepers. The Executive is responsible for national administration of the Association, with the Branches involved in regional activities. One of the recognised strengths of the NBA is the allowance for all members to have direct input to decision-making processes at three major levels. Individually through the annual election of Executive members, collectively through Branch representation, and through submissions to the Annual NBA Conference whereby recommendations are put directly to Executive for action on major industry issues.

One recommendation from Conference in 1984, led to the implementation of a strategic planning system known as **Management by Objectives (MBO)**. Based upon a technique which has been successfully applied in commercial business, its application to an industry organisation presented some unique problems, and was a considerable challenge to those involved.

The Management System This system involved the formulation by agreement of an achievable **organisational purpose**, for which **long-term goals** are declared to achieve that purpose, and thence from an overall **analysis** of the present and future situation of the organisation a series of shorter term **objectives** are established. Finally, plans for **immediate actions** are laid down to meet the stated objectives and to **align** the organisations' activities with those of its members, and those of other outside agents with whom contact may be important. (Figure 3.)

Figure 3 - **The Management System**

- (Organisational purpose)
- Statement of goals
- Situation Analysis SWOT
 - Strengths
 - Weakness
 - Opportunities
 - Threats
- State objectives
- Action Plan
- Alignment
- Review

By way of explanation of the terms mentioned, examples can be drawn from the actual process which took place in 1984 within the NBA. To achieve the planning expertise, a meeting of 15 industry leaders was convened, and over a period of four days, the process was first explained by a trained professional, and then applied to the NBA in a practical exercise.

The Strategic Planning exercise has been described as an "ongoing" process, which involved assessing our historical development, our plans for the short, and long-term future, how we are going to get there, and the resources we need to achieve these aims.

The Organisation's Purpose:

Clearly defines the purpose for the existence of the organisation. A very general statement of the areas in which the organisation was formed to be involved in. The mission of the NBA was thereby defined as:-

"Better beekeeping - better marketing".

Goals

Defined as a general statement describing the direction the organisation intends to move in the next 2-5 years. It describes the directions and priorities of the organisation. Resulting from the planning exercise in 1984, six basic goals were defined for the NBA, identifying the areas in which it was desirable to make some impact in the near future.

Goals of the National Beekeepers Association

1. Increase industry profitability
2. Improve beekeeper education and training
3. Improve beekeeper co-operation and communication
4. Improve industry public relations
5. Achieve more effective liaison with government agencies
6. Develop a long - term Industry Plan

Situation Analysis

(SWOT) Outlines the Strength, Weaknesses, Opportunities and Threats of the Organisation.

Possibly the most important aspect of the strategic planning exercise, this analysis provides the basis of processes

Figure 4 - Sample SWOT Analysis of the NZ Beekeeping Industry

Present	Future
Strengths Existence of National Association. Freedom from diseases and Pests Professional acceptance in the rural community.	Opportunities: Govt. encouragement of private enterprise. Increased educational opportunities. Continued high country development.
Weaknesses: Lack of political influence. Lack of disease diagnostic services. Distance from export markets	Threats: Increased pesticide damage in agriculture. Product substitution Increased cost of production

which follow as it asks the fundamental question - "**Where are we now?**"

The following is a small representation of the SWOT analysis results from the NBA planning exercise in 1984

From these analyses, the areas of most effective action can be identified and short to medium term

Objectives are declared.

Objectives

From the direction and priorities indicated in the Goals' the objectives are set. **Objectives are more specific than goals as they describe the subject, the result intended' a measurement, and a target date to achieve them by.** Examples of objectives established for the NBA in 1984 were as follows:

Goal 1 - "Increase Industry Profitability"

- **Objective 1:** To have more than half of NBA Branches actively involved in a Trees for Bees programme by spring 1985.
- **Objective 2:** Implement a Honey Promotion Plan by 1986'
- **Objective 3:** Increase awareness of potential beekeeping cost savings (on-going).

Objectives are specific statements of intent - you can take a vague idea about something worthwhile you intend to do, and make it more specific until it has been changed into an objective. The necessary activity required to reach the objectives are then detailed by writing **Action Plans** for each one.

Action Plans

These assist the smooth transition from the objectives to implementing the activities for their achievement. They do this by describing in detail activities required by When, by Who, What could go wrong, and Contingency Plans for these. This detailed planning includes estimates of costs, time schedules, resource requirements, work relationships, support from other sources both within and outside your own organisation. It also helps to identify potential problem areas, and opportunities for increased efficiency in achieving objectives.

Figure 5 - Example of an Action Plan from f984 NBA Industry Plan.

B, Goal: Improve Beekeeper Education and Training

2. Objective: All beekeepers able to recognise all major brood diseases by December 1, 1984

Action Plan				
Action	Person	Target Date	Maximum Cost	Contingency
1. Arrange showing of 'Bee Diseases' film to all branches	Executive/ MAF	Sept 84	(postage)	
2. Arrange Branch members and/or Executive members to show "Bee Diseases" film to all hobbyist clubs	Executive/ MAF	Oct 84	(postage)	
3. Request to MAF for AAOs to address all Branches at meetings or field days on hive inspection techniques and requirements.	Executive / MAF	Oct 1, 1984		

One of the most critical factors in the success of a strategic planning exercise is to ensure the support of the individuals within the organisation for the aims and objectives stated. This is achieved by a process of **Alignment**, whereby information is made available to individuals, in particular those from whom some activity is expected and their support is recruited.

In a diverse organisation such as the National Beekeepers' Association, this has required the publication of a formal Industry Plan for each year since 1984, which has been circulated to individual members.

Also of critical importance to the on-going success of a strategic planning system is for a regular **Review** of progress to be made' with **Contingency Plans** to be implemented where necessary' Within the NBA, this is achieved by an annual Planning Meeting held in March each year, in which the Objectives and Action Plans are established for the coming twelve months. Since being introduced in 1984. this planning process has become an integral part of the Executive management system, and an annual "cycle" of activity has now been established. (Figure.. 6.) While this discussion has concentrated upon the application of strategic planning to the administration of the beekeeping industry, such a system can equally be applied to an individual Business, such as a beekeeping operation, or any part of such a business.

Figure 7 below demonstrates how such a system might be applied in a beekeeping business situation.

Figure 7 - Example of Application of Strategic Planning to a Beekeeping Business.

Business

Aim: Survival of the business

Situation: Income not high enough to support yourself & staff
 : Pollination opportunities in district.
 : Direct selling opportunities.

::

Objectives: To increase income by \$5000 this year by pollinating kiwifruit orchard.

Action Plan: Approach orchardists.
 : Deliver hives etc

Alignment: Perhaps work with other beekeepers'

Review: Paid sufficiently, early enough.

: Hive condition.

: Ultimately extra dollars in the bank.

Summary

The implementation of a formal, strategic planning system in the administration of the New Zealand beekeeping industry has meant the adoption of a more forward-looking attitude within that industry' While it cannot be claimed that within the four years since its introduction the problems facing our industry have lessened greatly, this structured approach has resulted in many positive results, such as added support from outside agencies, and within the organisation.

One important result is that the Association is now recognised as being a "**pro-active**" body, able to anticipate problems and initiate responses rather than its former attitude, that being a "**re-active**" stance, whereby problems were handled only when they arose, and often too late to be truly effective.

In addition, this system provides three important advantages for any' organisation, particularly one which relies greatly upon voluntary input. These are:

- 1) **Continuity.** The established objectives and active plans stand despite changes in personnel in the organisation;
- 2) **Accountability:** Someone, somewhere, and at sometime has been assigned the activities to be carried out;
- and 3) **Efficiency:** Resources of time, money and personnel can be utilised to maximum advantage, with a minimum of waste or duplication.

References National Beekeepers Association of New Zealand Inc.: - 1984 Industry Plan. Forsyth, M. (1984). NZ Ministry of Agriculture: "'The MBO Process" . (unpublished paper).

Drones - carries on from page 15

When considering using virgin queens or breeding your own queens, please remember that the queen is just one side of the equation. You also need mature drones. These were started in late August and now hopefully are mature. You can check this by catching a drone at the entrance and slowly rolling his thorax and abdomen between your fingers and if mature he will ejaculate. Look for the creamy semen on the cap of the white mucus.

If you don't have mature drones wait another week or two before purchasing virgin queens.

Another cause of queen supersedure within six weeks of introduction can be due to Nosema. New queens shouldn't go into a sick hive. Make a nuc from a strong hive.