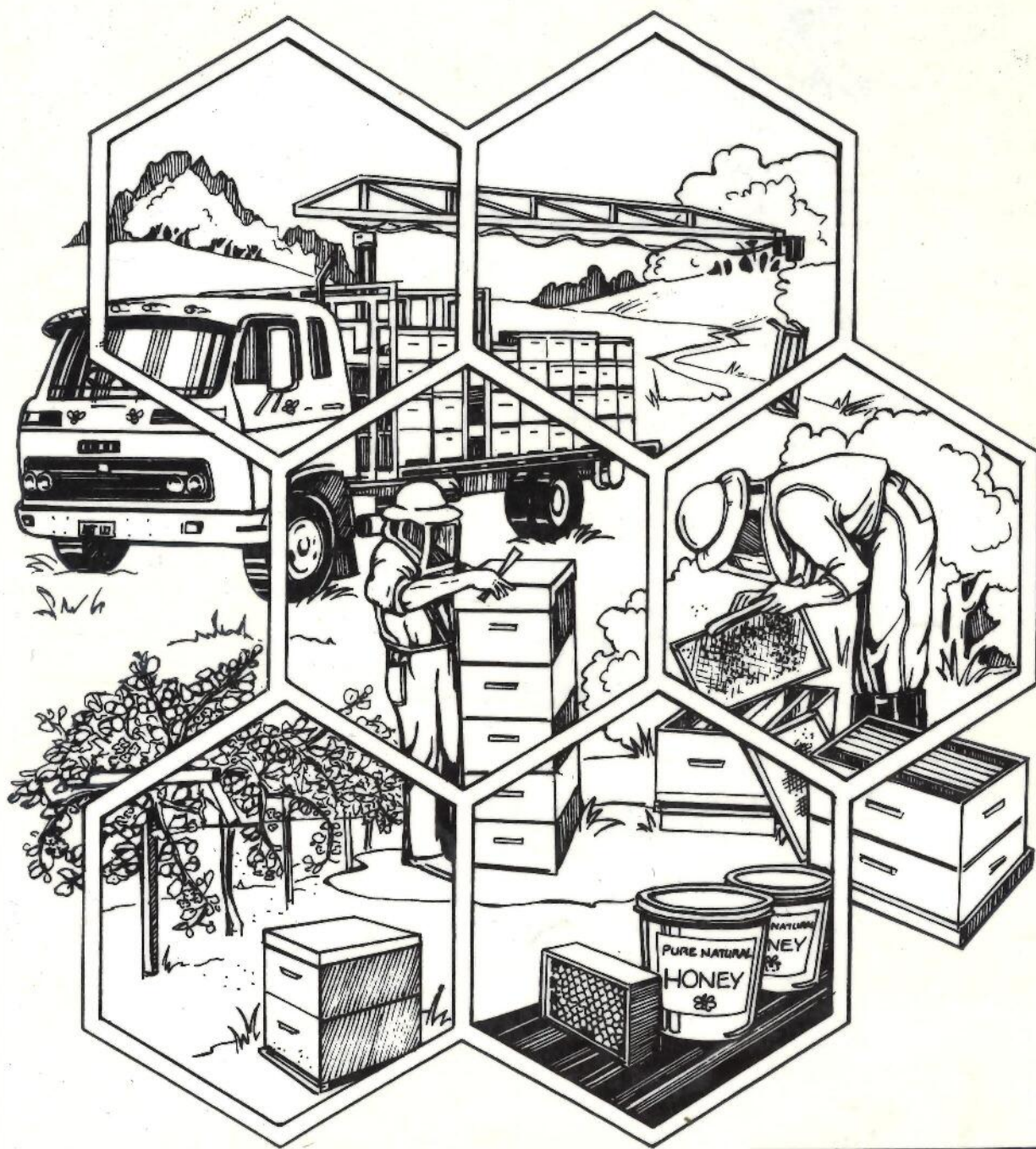


# NEW ZEALAND BEEKEEPING - AN INDUSTRY PROFILE



**1995 Edition -  
Revised and  
updated**

National Beekeepers Association of New Zealand

ISBN 0-473-02928-6



# NEW ZEALAND BEEKEEPING

## - AN INDUSTRY PROFILE



National Beekeepers' Association of New Zealand (Inc)  
Hastings

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***"Beekeeping"*** - the term conjures up visions of veiled people in white suits doing mysterious things with smoke and boxes and honey combs.

*And somehow these same people magically produce honey, that wonderful tasting, natural substance that no amount of science or technology has ever been able to reproduce.*

*But who are the beekeepers? And what do they really do? The following "snap-shots" will introduce you to three New Zealand beekeepers. They're typical of the over five and a half thousand people in this country who own and manage the world's most important beneficial insect.*



## **"THAT'S ENOUGH HONEY TO DROWN IN!"**

It's been a long, hard year. First there were the heavy snows, with all the worries about inaccessible hives in the high country. Then the weather turned rainy in spring, which meant that tonnes of sugar feed had to be purchased on overdraft. And finally the weather changed abruptly, with widespread predictions of drought.

Still, the honey flow turned out to be a little better than average, with two boxes of surplus honey produced per hive. So the late summer and early autumn have been taken up with removing the more than 30 tonnes of honey from the hives and extracting it in the honey house. Now John and Alison Snelgrove are in the midst of cleaning up the machinery they used for spinning the honey out of the honey combs. They have just sent away the last of over one hundred 200 litre drums of honey to a packer in Christchurch.

John is a third generation beekeeper. His grandfather was one of the pioneers of the beekeeping industry in New Zealand, and his father built up the business during the years of good production and good prices for clover honey in the 1960's and '70's.

John always knew that he wanted to be a beekeeper, and helped his father with the hives from the time he was a teenager. But his father insisted that he also qualify in a trade, so John apprenticed as a mechanic in the nearby town. In the early years, after John met and married Alison, they both worked at jobs to make the money to buy the business from John's folks. As



it turned out, their other work skills have also come in handy several times since, when crop failures meant they had to take on other jobs in the winter to keep the business afloat. John's father and mother have also been very understanding, leaving in a portion of the purchase price as a personal loan.

John and Alison have increased the original 800 hives to just over 1350. They found the move necessary to keep their business viable in the face of a levelling out of honey prices in the last decade.

John and Alison also had to make extensive renovations to the honey house, which had been in continuous use for some thirty years. One of their first visitors after they took over from John's father was the local health inspector, who insisted on a programme to bring the building and its honey processing equipment up to new food hygiene standards.

John does most of the field work, leaving each morning in the five-tonne truck drive visit the many farm properties where his hives are kept. Each location is called an "apiary", and some are as far as 150 km from John and Alison's home. Needless to say, John's working day can often be very long. During the spring, which is the busiest part of the beekeeping season, John has to visit each of the nearly 70 apiaries every 3 to 5 weeks. John has a lot of jobs to do on each visit, including feeding the hives, replacing old queen bees, and ensuring that the well-managed colonies don't swarm. He also has to check each hive for American foulbrood, a disease which has the potential to spread and destroy many hives.

After adding extra boxes to the hives when they begin to require extra honey storage space during the Christmas period, John begins the long process of removing the honey from the hives and bringing it back to the honey house. Both John and Alison work in the honey house over the summer, with Alison often extracting the crop by herself while John goes out in the truck to pick up another load from the hives.

Because John and Alison have always sold their crop in bulk to a local honey packer, they do not get involved in the additional work and expense of packing and marketing their crop. Still, they do pack a small amount of honey each year, most of which is given to the many farmers who own the land where the hives are kept. John and Alison also sell a small amount of honey at the back door to local customers, many of whom bring their own containers to be filled.

Alison does all the administrative work for the beekeeping business, including the usual paying of accounts and wages and the maintenance of a detailed cash book. Along with John, she also produces a detailed budget each year and tracks their progress against a cashflow forecast. She found this was vitally important in the '80's when interest rates were so high. Their business assets are tied up in beehives, rather than land, and as a result their access to credit was much more limited than their farming neighbours.



For the last two seasons John and Alison have employed a local school leaver. The young man worked "on trial" for the first several months, since he didn't have any previous beekeeping experience. John was aware that new employees often quit bee businesses quite suddenly when they receive their first good stinging by the bees. However, the young man has shown a real interest in beekeeping work, and John has now offered to pay the worker's fees for the Certificate in Beekeeping correspondence course so that he can increase his knowledge and skills. He realises, however, that once the young man is fully trained he might very well decide to move on or start up beekeeping on his own account.

The system John uses to manage his hives has been handed down from his father and modified by John in light of new developments and changes in beekeeping technology. Still, he knows that the system is quite different from what is in use by other beekeepers in other parts of the country. He used to always attend field days and seminars held by the local MAF advisory officer. But now that the service is no longer available, he relies on the annual National Beekeepers' Association field day, the association's magazine, and local branch meetings for information. John sees these meetings as a good opportunity to catch up on what the season has been like in surrounding areas as well as a chance to meet with his fellow commercial beekeepers. He doesn't normally visit with other beekeepers otherwise. The nearest one lives some 30 km away.

John has always been a firm supporter of the National Beekeepers' Association, and his father once held a position on its executive. He and Alison have travelled to the association's annual conference in July for the past ten years. Because the spring and summer periods are so busy for them, they aren't able to take more than the occasional day off during that time. So they combine the trip to the annual conference, which is held in a different provincial centre each year, with a few weeks holiday.

For the past several years John has acted as his branch's delegate to the conference, and he has recently found the need to become more politically involved in industry affairs. He has lobbied his local member of Parliament on a proposed plan to allow Australian honey imports, and he and Alison have appeared in the local paper explaining their opposition to the plan which they believe will expose the beekeeping industry to the risk of bee diseases from overseas.

John and Alison aren't quite sure how long they will be able to stay in the beekeeping business. John's back is giving him trouble now, and with all the heavy lifting involved in honey production, he may be forced to take on a less active job in the future. John also knows how difficult it is to finance the next generation into beekeeping, and he has suggested that both his sons get a trade qualification, just like he did, before they decide what line of work they are going to pursue. If the sons find other careers, John and Alison will probably sell off the business, in parcels of hives and equipment rather than as a going concern.





## **“BUT I THOUGHT BEEKEEPERS JUST PRODUCED HONEY...”**

It's 1 o'clock in the morning and the phone has just rung. On the line is Bob Hopkins, calling on the cell phone from the cab of his utility truck. He's in a kiwifruit orchard, and so far his other truck, carrying 72 hives, hasn't arrived.

For Joanne, Bob's wife, fielding such phone calls is a normal part of the job. One of Bob's workers had just called in, from a pay phone about 15 km away, saying that he and the other worker are going to be “a bit late”. They've had a puncture, and changing a flat tire on a fully laden 3 tonne truck is going to take a while.

Bob just sighs, and tells Joanne not to expect him home until dawn. Because of the heavy rain the night before, the orchard is very greasy, and once the hives make it to the orchard they will probably have to ferry most of them into position around the blocks with the four-wheel drive.

By now, Bob and Joanne Hopkins are quite used to coping with the unexpected. They manage 1100 beehives in the Bay of Plenty, and in the 10 years since they began full-time beekeeping they have learned that in the pollination business, good planning and long hours are two of the big keys to success.

In the early '80's, Bob and Joanne spent three years building up their business from the 50 hives Bob was running as a sideline, to the 650 they needed to go “full time”. During that period Bob worked as a builder, while Joanne held down a part-time job as a nurse and also managed to care for their young family.

The last year of sideline beekeeping was really hectic, with Bob trying to take care of 350 hives on a part-time basis, and spending every other free moment behind a saw bench cutting timber for the big increase they needed in hive numbers. Now that they are established, they buy most of their hive parts, since they find that time-wise, it's actually cheaper than doing it themselves. But during the building-up phase they put all their available cash into more beehives, and “donated” their labour to the business instead.

Now their business is well-developed, even though it still consists primarily of the hives, the two trucks, and a workshop/storage shed. They have one full-time employee, as well as several other people they hire during the pollination period to help with the big job of shifting most of their hives into and out of the orchards.

The Hopkin's hives are managed each season with the primary goal of placing 90% of them in kiwifruit orchards for the November flowering period. They service 40 kiwifruit grower clients, and the contracts provide at least two-thirds of their yearly cash flow.

Honey production has never been a major focus for the Hopkin's. Instead, Bob puts all his energies into ensuring that the hives are re-queened



annually, are well-fed, and have the proper amounts of brood required to provide good kiwifruit pollination. To make sure the hives are up to scratch, he visits them 3 times in the month just before pollination.

Because of the large number of hives needed for kiwifruit pollination in the area where the Hopkins live, apiaries are so numerous that the region is in effect "overstocked". Rather than get into arguments with other local beekeepers who can tend to claim an area through the historical siting of their hives, Bob decided at the beginning of his beekeeping career to locate most of his apiary sites up to two hours travel from home.

Once pollination begins, the hives which meet the standard are shifted from their apiaries and brought into the orchards. The process always takes place at night so that the bees do not become disoriented or lost. Bob and his employees begin work in the late afternoon and continue on through the night. There is also a day shift of one or two part-time workers who feed sugar syrup to the bees once the hives have been placed in the kiwifruit. Research has shown that such feeding once every three days increases pollen gathering by the bees.

During the pollination period, Joanne is the nerve centre of the operation. Growers call her once their orchards have begun to flower and she determines the hive placement work each afternoon. She also coordinates communication between the various work crews, particularly when problems arise.

Once the hives are all removed from pollination in mid-December, John takes them to various sites where there is a possibility of catching a nectar flow. Often, however, the hives come out of the orchards in poor condition, so the Hopkin's have learned not to budget on a honey crop.

The recent downturn in kiwifruit prices has had a impact on the Hopkin's business, with some clients pulling out orchards and others selling or leasing their properties to packhouses or management firms. There has also been pressure on the pricing of pollination contracts, which has begun to erode the profitability of the Hopkin's enterprise.

The Hopkin's are now investigating income diversification options, and last year provided several tonnes of live bees for the package bee market overseas. As well, Bob has found a number of new apiary sites where he has the chance of producing manuka honey. Publicity on the antibacterial properties of this honey has resulted in a significant increase in the market price.

During the transition from sideline to full-time commercial beekeeping, the Hopkins received a lot of good advice from the local MAF advisor. There were plenty of workshops and discussion groups, and a considerable number of late night phone calls. Now all that has changed, and the Hopkins main interaction with MAF is through their local pollination association, the audits growers sometimes pay the advisor to do on their hives, and the supervision of the local American foulbrood disease control programme.



The MAF advisor was a great help during their second season, when they had to burn 34 hives which had become infected with American foulbrood. With sound management, the disease outbreak was contained and it didn't stop their expansion programme. Still, the experience gave them a real scare, and they realised just how important regular bee disease inspection is. Bob now donates two to three days each year to carry out voluntary inspections of other' beekeepers hives in the district, under the supervision of MAF. He is also a firm supporter of the NBA disease control levy, even though it is a cost to his business over and above the small percentage of hives he loses each year to the disease itself.



## **“YOU MEAN YOU ACTUALLY KEEP BEES FOR FUN?”**

The kids next door have been watching through the fence for over an hour. You can see their eyes peering between the slats, intent on the action in the neighbour's back yard. Every once in a while one of them giggles. But other than that they're keeping as quiet and as still as they can.

Their neighbour is Mary Stewart, a hobbyist beekeeper, and she's in the midst of giving her hives a spring check. Mary owns two hives, which she keeps at the back of her section, up against a hedge so that the flight of the bees doesn't interfere with anyone who lives nearby. She also takes care of another hive, elsewhere in town, which belongs to a friend who started beekeeping with her but lost interest a couple of years of ago.

Mary and her friend decided to take up beekeeping when they read an article about bees in a gardening magazine. They attended an evening course at the local polytechnic, and then once they had determined the amount of time and money that would be involved, they bought their first hive.

The hive was advertised in the local paper, and belonged to a local hobbyist who found out, much to his surprise, that his son was allergic to bee stings. Once the hive had been moved to Mary's, she and her friend purchased bee boxes and frames in kitset from a beekeeping supply shop and assembled them in her garage. They stocked the new equipment with bees and combs taken from the original hive. They also bought three new queen bees, which were delivered by post. The queens were used to head up the new colonies and replace the one in the parent hive because the previous owner said the strain of bee was too aggressive to be kept in town.

Mary enjoys having the hives in her back yard because she can check their progress whenever she likes. She also likes to just watch the bees carrying out their many activities. Sometimes she just sits next to a hive and watches the bees come and go.

Mary made a lot of mistakes in her first beekeeping season, but she still managed to produce a small amount of surplus honey. She felt the cost of a honey extractor couldn't be justified for such a small number of hives, so she

cut up the honey combs and squeezed them through a piece of cheese cloth. It turned out to be a slow and messy job, and so the next year Mary joined her local hobbyist beekeeping club, which rents a hand-powered extractor to members.

Most of Mary's honey is either eaten by her family or given away to friends and neighbours (and especially the children over the fence). In a good season she has produced 120 kg of honey from her three colonies, although her average is less than half that amount. And one season she didn't get any honey at all because the poor spring weather meant that her hives never built up and produced a crop.

Mary doesn't really know that much about the beekeeping industry. She occasionally gets a broadsheet published by a beekeeping supply house, and she owns a New Zealand-produced beekeeping book. But she isn't a member of the National Beekeepers' Association and she has never been to a branch meeting because she thinks the association is mostly concerned with marketing and commercial activities. However, her hives have been inspected for American foulbrood on several occasions by a volunteer from the NBA, and she enjoyed watching and asking questions, since she was still uncertain about what the various bee diseases looked like. She was amazed when the inspector told her that commercial beekeepers throughout the country were levied to provide funds for the inspection service, since she didn't have to pay a thing.



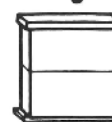
## HISTORY OF BEEKEEPING IN NEW ZEALAND

Honey bees have been kept in New Zealand for over 150 years. In that time, beekeeping has moved from being a home craft to a progressive industry. New Zealand is now recognised as one of the world's most advanced beekeeping countries, and is a leader in several important fields.

The first honey bees were brought to New Zealand by English missionaries. The earliest record of a successful shipment was of two basket hives of bees which arrived in Northland in 1839. Many other importations soon followed and beekeeping became a popular pastime with settlers. The first New Zealand beekeeping book was published in 1848.

The original stocks of bees brought to the country were the Northern European black strain. They were kept in traditional straw skeps or wooden boxes with frames. Around 1880 the first stocks of the yellow Italian strain were imported. They, along with movable frame "Langstroth" hives, provided the foundation for modern commercial beekeeping development.

American foulbrood was also accidentally imported in some of the original bee stocks, and by the 1880's had become established in many hives. The fixed frame hives in common use at the time meant that combs could not



easily be inspected for the disease, and beekeeping was greatly affected in many parts of the country.

Isaac Hopkins, a prominent commercial beekeeper, campaigned for bee disease control legislation in the last two decades of the nineteenth century, and in 1905 was appointed Government Apiarist. Shortly after, the first Apiaries Act was passed. The act made the keeping of fixed frame hives illegal and introduced measures to control American foulbrood. The New Zealand act was one of the first modern bee disease control laws anywhere in the world, and along with a concerted campaign to reduce the incidence of the disease, helped to make the commercial keeping of bees in New Zealand a viable farming activity.

Following the First World War, beekeeping increased rapidly as more land was developed and returned servicemen were trained as beekeepers. Hive numbers doubled to nearly 100,000 by the end of the 1920's.

Because honey crops are extremely variable, marketing organisations were used in the 1930's in an attempt to stabilize prices. By 1938, much of the New Zealand crop was being sold to the Internal Marketing Division, a government agency.

Beekeeping increased again after the Second World War, and by 1950 some 7,000 beekeepers were keeping over 150,000 hives. In 1955, the Honey Marketing Authority took over the Internal Marketing Division's activities, and for the next 25 years was for all intents and purposes the sole exporter of extracted honey produced in New Zealand.

The late 1970's and early 1980's saw large changes occur in the beekeeping industry. The Honey Marketing Authority ceased operations, and private individuals and companies began exporting New Zealand honey products. The numbers of hives increased by over 40%, to 335,000, spurred on by the demand for paid pollination services. The range of exports also grew, and began to include many different types of honeys, as well as live bees.

In the past several years, the industry has been affected by significant changes in government policy and legislation. In 1991, the government announced that it would no longer fund the endemic honey bee disease programme, thus ending taxpayer support for a service which had been in continuous existence since 1908. The industry made the decision to fund American foulbrood control from its resources, and now contracts the Ministry of Agriculture and Fisheries to provide disease control services.

Recent enactments, including the Biosecurity Act and the Commodities Levy Act, have further affected the way the beekeeping industry will be able to coordinate its activities in the future. The industry intends to seek a commodity levy to replace the Hive Levy which is used to fund the National Beekeepers' Association. The NBA must also develop a pest management strategy if it wishes to control American foulbrood on an industry-wide basis after 1996.



## WHAT THE INDUSTRY DOES - PRODUCTS AND SERVICES

*Honey has always been the most important New Zealand beekeeping product. However, in the last decade other products and services have become important sources of additional income to the nation's beekeepers. Pollination fees and the export of live bees are the two most important areas of this industry diversification.*



### HONEY - "NATURE'S OWN SWEET"

New Zealand's variety of native floral sources, combined with a number of introduced pasture and wild species, have created a unique range of honey types and flavours. Beekeepers have always been quick to identify and market these honeys, and now specific sources such as South Island honeydew, manuka, thyme and ling heather attract premium prices overseas. Other significant export honey products include comb honey, high-moisture honey, honey and fruit spreads, and very light-coloured honey (0-9mm on the Pfund honey grading scale).

About one third of New Zealand's annual production is exported, with the remainder sold as creamed and liquid spreads in retail supermarkets and food specialty shops. There is also a growing use of honey in the food manufacturing industry, with many leading companies keen to exploit the natural goodness of honey as a food ingredient in their products. New Zealanders are enthusiastic users of honey by world standards, consuming on average approximately 1.5 kg per person each year.

Honey production for the 1992-93 season totalled 7086 tonnes, or approximately 23 kg per hive. This compares to a six year average of 7698 tonnes (24 kg/hive). However, honey production is very weather dependant, and yields in the same six year period ranged between 17 kg/hive (1988-89) and 31 kg/hive (1991-92).





## **POLLINATION - "THE SPARKPLUG OF AGRICULTURE"**

In the last 15 years, New Zealand growers have realised that high quality pollination is essential to the efficient production of a number of their horticultural and agricultural crops. Beekeepers currently hire over 90,000 hives each year for pollination purposes, with the vast majority (an estimated 81,000 hives) being placed in kiwifruit. There is also a growing use of paid pollination services in the apple industry, with lesser crops such as berryfruit, squash and seed crops also benefiting from the controlled use of honey bees. Pollination services are estimated to be worth over \$8.8 million annually to the beekeeping industry.

The unpaid pollination work honey bees do has an even greater benefit to the New Zealand agricultural system. Crops directly relying on bee pollination are worth over \$1.2 billion per year, while pollination of pasture legumes provides more than \$1.87 billion worth of nitrogen each year to the country's soils. Because it is impossible to identify a direct beneficiary for much of this pollination, some people mistakenly assume that this input does not have a value. However, agricultural economists worldwide now agree that the value of honey bees to the environment is worth up to 100 times the value of the actual honey and bee products they directly produce.



## **QUEENS AND BULK BEES - "LIVESTOCK ON THE WING"**

The export of live bees has been a significant development in the New Zealand beekeeping industry in recent years. Producers in this country supply "packages" of worker bees and a queen to stock hives in the northern hemisphere spring. Specialist queen producers also raise queen bees which are used for hive increase and replacement of overwintered queens, both in New Zealand and overseas. Currently the main markets for package bees are in Canada, Korea and the Mideast, while queen bees are shipped to countries as geographically and culturally diverse as Israel, the United Kingdom and Japan.

New Zealand has an enviable reputation for both the quality and disease-free nature of its honey bee stocks. This has recently been recognised in the United States, where negotiations are currently under way to allow replacement stocks from New Zealand into areas being overtaken by the Africanised bee.

For the 1993 calendar year, package bees and queens were exported from New Zealand with an estimated total value of \$1,783,585 FOB.



## HEALTH PRODUCTS - "THE NATURAL ALTERNATIVE"

A number of other products produced by bees are gaining in popularity, both in New Zealand and world-wide. Most significant is royal jelly, which is prized by Asian peoples as a tonic and restorative. Royal jelly is secreted by a special gland in the bodies of nurse bees, and is the high protein food fed to developing queen bee larvae. Royal jelly is processed into a variety of forms, including capsules, tablets and cosmetics. Approximately \$3,000,000 of the product is sold in New Zealand, much of it imported from overseas.

Propolis is also being used in a range of natural health care products, mostly due to its reputed properties as an antibiotic. Propolis is the bee-collected secretions of plants which is used as a glue and preservative in the hive. Several tonnes of propolis are collected each year by beekeepers and sold to health products manufacturers.

Pollen has traditionally been collected from bees and used as a protein food supplement. Three to four tonnes are produced each year and sold either as raw pollen, or in combination with other materials.

Beeswax is another important by-product of honey production. Much of it is recycled by beekeeping supply houses and processed into comb foundation, which is used by beekeepers. However, another 150 to 200 tonnes is exported each year for use in cosmetics and candles.



## BEEKEEPING SUPPLIES - "HELPING THE INDUSTRY DO ITS WORK"

A variety of companies make equipment for the New Zealand beekeeping industry, including hive woodware, honey-processing machinery and honey containers. A substantial amount of this manufacture is also exported, and New Zealand has gained a reputation overseas for its high quality and innovative beekeeping supplies.



## **COMPOSITION OF THE INDUSTRY**



### **SIZE**

The beekeeping industry in New Zealand has shown unprecedented growth in the past 20 years, with an average annual increase of around 6% throughout most of the 1980's. Hive numbers peaked at 335,000 in 1988. Since that time, hive numbers have decreased marginally, stabilising at approximately 300,000 hives.

In 1993, New Zealand had:

- 5,622 beekeepers
- 25,124 apiaries (sites where bees are kept)
- 298,982 beehives



### **CATEGORIES OF BEEKEEPERS**

In New Zealand, as in other countries with a significant beekeeping industry, most of the hives are owned by a few people or businesses. Semi-commercial or commercial businesses (more than 50 hives) make up only 9% of the beekeepers. However, between them they keep 90% of the hives.

Although there are only 600 registered beekeepers in New Zealand with 50 hives or more, many commercial enterprises also employ staff. There are thus likely to be 3 to 4 times that number of people actually employed directly in the beekeeping industry.

Hobbyists keep only 10% of the beehives in New Zealand, but constitute 91% of the registered beekeepers. Nevertheless, hobbyists are an important part of the industry. For instance, most new commercial beekeepers come from the hobbyist sector. As well, because of the free-ranging nature of bee diseases such as American foulbrood, any beekeeper, no matter how small, can potentially have an economic impact on other beekeepers who keep hives nearby.



# INDUSTRY ORGANISATIONS



## NATIONAL BEEKEEPERS' ASSOCIATION

The National Beekeepers' Association, Inc., was founded in 1914, and is the principal beekeeping industry organisation in New Zealand. Membership is open to any individual or organisation, and is automatic for beekeepers owning 50 hives or more.

The NBA represents the interests of beekeeping on a national level. It seeks to encourage beekeepers to work together for the betterment of the industry and to plan for its future growth. Important functions and activities of the NBA include:

- National and local government liaison
- Submissions to governmental agencies on matters affecting the beekeeping industry
- American foulbrood disease eradication
- Honey marketing
- Publicity and public relations
- Educational and communication activities, including a national magazine (*The New Zealand Beekeeper*), a beekeeping library, and field days, branch meetings and national conferences
- Beekeeping research support

The NBA has a branch structure, and elects a national executive. It also employs an executive secretary.



## OTHER INDUSTRY ORGANISATIONS

Special interest groups are represented by a number of other associations. These include national organisations for queen bee producers, honey packers, honey exporters, and comb honey producers. As well, pollination associations exist in several regions of the country where provision of pollination services is a major income source. There is also an extensive network of hobbyist beekeeping clubs.



## INDUSTRY TRUST FUNDS

Two trust funds were established in 1983 to manage the proceeds of the sale of assets from the New Zealand Honey Marketing Authority. The objectives of the trusts are to further the general advancement of the beekeeping industry through education, study, investigation and research. Grants are made based on applications submitted to the trustees.



# GOVERNMENT INVOLVEMENT



## MINISTRY OF AGRICULTURE AND FISHERIES QUALITY MANAGEMENT (MAF QUAL)

MAF Qual provides a range of services to the beekeeping industry. The services are carried out by a team of Apicultural Advisory Officers (AAO's), as well as a number of other, part-time personnel. The services include:

- **Consultancy** - advisory services, on a fee-paying basis, are available in most aspects of beekeeping, including technical, financial, and market development. AAO's also carry out consultancy work on contract directly to the National Beekeepers' Association and other beekeeping interest groups.
- **Disease control** - MAF Qual administers the Apiaries Act 1969. This involves maintaining a register of all apiaries in the country, as well as ensuring that beekeepers carry out their statutory responsibilities to report disease in their hives and furnish a statement of inspection once every year.

MAF Qual is also contracted to the National Beekeepers' Association to carry out an annual American foulbrood control programme. MAF personnel inspect a pre-determined percentage of the nation's apiaries, record disease statistics, provide counselling to beekeepers in disease control matters, and supervise further apiary inspections performed by NBA member volunteers. The target of the programme is to inspect 10% of apiaries throughout the country each year.

- **Disease surveillance** - MAF Qual conducts an active surveillance programme for exotic bee diseases. Over 500 apiaries located in high risk areas are inspected each year for the presence of European foulbrood, internal and external parasitic mites, and Africanised bee traits. A further 500 samples provided by live bee exporters are also analysed.

MAF Qual also maintains an Emergency Disease and Pest Response (EDPR) capability. The contract involves training and preparedness in event of the finding of an exotic bee disease.

- **Border protection** - The Agriculture Quarantine Service of MAF Qual carries out border protection work at all ports of entry. The work of AQS officers provides the first line of defence in maintaining New Zealand's high bee health status.

**Export certification** - MAF Qual officers provide a certification service for beekeeping industry exports. The service includes the audit of producers' quality control systems and the issuing of export documentation.



## **MINISTRY OF AGRICULTURE AND FISHERIES REGULATORY AUTHORITY (MAF RA)**

The MAF Regulatory Authority (MAF RA) is the official policy-setting agency of the government. As such it is responsible for a number of programmes, services and regulations affecting the beekeeping industry. These include the letting of government contracts for active surveillance, EDPR and border protection; the negotiation with overseas governments to create access for live bees and bee products; and the carrying out of risk analyses on potential imports which may affect the disease status of the beekeeping industry.



## **RESEARCH**

The Horticulture and Food Crown Research Institute maintains beekeeping research units at both the Ruakura and Mt. Albert research centres. The units are supported by the Foundation for Research and Technology, commercial enterprise and beekeeping industry trust funds. The units have provided valuable scientifically-based information in a number of areas, including kiwifruit pollination, disease control and bee repellents for 1080 baits.



## **UNIVERSITIES**

Several universities have students and staff carrying out research on bees, honey, pollination and honey marketing, from the undergraduate to post-doctoral level. The discovery of a new antibacterial agent in manuka honey was recently made by researchers at Waikato University.





## EDUCATION AND TRAINING



### NEW ZEALAND CERTIFICATE IN APICULTURE

A one year residential training programme in beekeeping is available at the Telford Rural Polytechnic. Trainees receive supervised experience under commercial conditions, as well as being involved in other agricultural and engineering activities. A bursary in support of the programme is provided each year by the beekeeping industry trust funds. The Certificate in Apiculture is also available to a selected number of overseas students.



### CORRESPONDENCE COURSE

A two year self-study programme, leading to the New Zealand Certificate in Apiculture, is also offered by Telford Rural Polytechnic. The course consists of a series of written, self-contained modules and several short courses held in different venues around the country.

## LEGISLATION AFFECTING BEEKEEPERS



### APIARIES ACT 1969

This act exists to protect and encourage beekeeping in New Zealand. It requires the registration of apiaries, regulates the control of bee diseases, and contains provisions relating to other aspects of beekeeping enterprise.

- **Registration of apiaries** - all places where bees are kept must be registered with MAF. Apiaries must be identified with a code number allocated to the beekeeper.
- **Diseases** - the most important bee disease present in New Zealand is American foulbrood (AFB), caused by the bacterium *Bacillus larvae*.

Beekeepers' responsibilities relating to AFB include immediate notification to MAF when the disease is found in a hive, and the taking of prompt steps to eradicate the disease and prevent its spread. For most beekeepers this means burning all bees, combs, honey and hive equipment, and burying the remains. Beekeepers



with adequate plant and experience may be granted a dispensation to salvage and sterilize some hive parts by placing them in paraffin wax at 160°C for 10 minutes. Combs, however, must be burned.

Feeding antibiotics to prevent or treat American foulbrood is illegal in New Zealand.

The Apiaries Act also contains provisions for eradicating or controlling exotic diseases and pests. These threats to the New Zealand beekeeping industry are discussed in more detail in Appendix 6.

- **Importing bees, bee products and appliances** - As a safeguard against the introduction of exotic bee diseases and pests, the Apiaries Act restricts the importation of honey, bee products, used beekeeping appliances, and live bees. No one may import any of these items without the permission of the Minister of Agriculture. Detailed importation restrictions and permit requirements can be obtained from MAF's National Manager - Apiculture (see Appendix 7 for address).

Currently, MAF's agricultural quarantine service seizes over 2000 containers of honey each year from passengers entering New Zealand. Any prohibited bee product poses a real threat to the New Zealand beekeeping industry.



## BIOSECURITY ACT 1993

This act is an omnibus piece of legislation with the purpose of reforming the law relating to the exclusion, eradication, and effective management of pests and unwanted organisms. It retains most aspects of the Apiaries Act 1969 for the meantime, and provides the legal means for the beekeeping industry to create a Pest Management Strategy for any particular disease or pest the industry wishes to eradicate or control.

The act gives the industry the means to determine an effective management strategy, and also allows the industry to levy its members to pay for the management programme. Most provisions of the Apiaries Act relating to control of American foulbrood and various exotic bee diseases will be repealed by the Biosecurity Act in 1996, unless a Pest Management Strategy for each disease is approved by the Minister of Agriculture.





## **HIVE LEVY ACT 1978**

This act provides the legislative means for the beekeeping industry to fund the services provided by the National Beekeepers' Association. According to the Act, any beekeepers owning 50 hives or more must pay to the NBA an annual levy set by the Minister of Agriculture. The levy is used to assist in the promotion, development and improvement of the beekeeping industry, and is collected on the basis of a hive ownership declaration made by each beekeeper.



## **COMMODITY LEVIES ACT 1991**

This act will supersede the Hive Levy Act in 1996, and will require the National Beekeepers' Association to make levy applications to the Minister of Agriculture if it wishes to continue to fund industry activities on a beekeeper payment basis. The act requires that such applications show that there has been consultation with all parties affected and that a majority of those affected support the levy.



## **PESTICIDES REGULATIONS 1983**

The indiscriminate use of insecticides can kill a whole range of insects over a wide area. The result is often the loss of significant numbers of pollinating honey bees and financial losses to both beekeepers and horticulturalists alike. The Pesticides Regulations 1983 require any insecticide that is poisonous to bees to carry the label instruction "toxic to bees", followed by conditions for use. These instructions form part of the regulation, and penalties are available if improper use can be proved.



## **FOOD HYGIENE REGULATIONS 1974**

The extraction, processing and packing of honey must be carried out in premises that are registered under the Food Hygiene Regulations. The regulations are administered by local authority health inspectors.



## **FOOD ACT 1981, MEDICINES ACT 1981**

These laws establish minimum standards for the labelling and chemical compositions of foods products (including honey), and restrict claims which can be made for therapeutic properties of products (including honey and other bee products).



## APPENDICES

- APPENDIX 1 BEEKEEPER, APIARY AND HIVE STATISTICS FOR NZ  
APIARY DISTRICTS AS AT 30 JUNE 1994
- APPENDIX 2 NZ ANNUAL HONEY PRODUCTION
- APPENDIX 3 INCOME PRODUCED FROM THE NZ BEEKEEPING  
INDUSTRY (1993 Figures)
- APPENDIX 4 VALUE OF HONEY BEE POLLINATION TO NZ PRIMARY  
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- APPENDIX 5 INCIDENCE OF AMERICAN FOULBROOD IN APIARY  
DISTRICTS TO 30 JUNE 1994
- APPENDIX 6 OVERSEAS THREATS TO THE NEW ZEALAND  
BEEKEEPING INDUSTRY
- APPENDIX 7 CONTACT NAMES AND ADDRESSES
- APPENDIX 8 FURTHER SOURCES OF INFORMATION



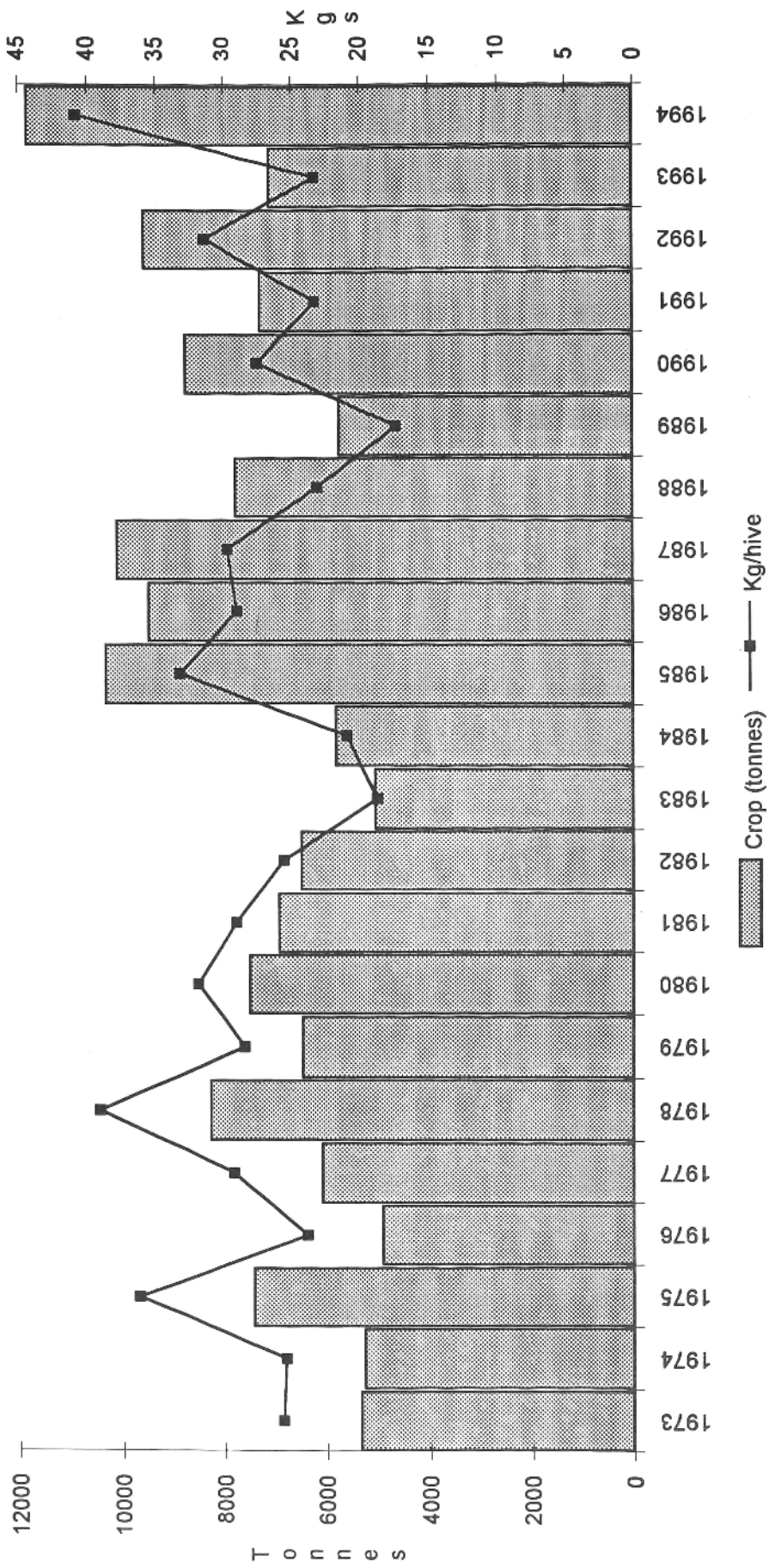
APPENDIX 1

BEEKEEPER, APIARY AND HIVE STATISTICS FOR NZ APIARY DISTRICTS  
AS AT 30 JUNE 1994

Apiary Register Location	Beekeepers			Apiaries			Hives		
	1994	1993	% Change	1994	1993	% Change	1994	1993	% Change
Whangarei	1225	1264	- 3.1	2972	3033	- 2.0	29848	30967	- 3.6
Hamilton	584	596	- 2.0	3100	2985	+3.9	43749	43185	+1.3
Tauranga	598	606	- 1.3	3696	3593	+2.9	50282	53043	- 5.2
Palmerston North	1358	1319	+3.0	3957	3961	- 0.1	35839	38446	- 6.8
Blenheim	474	484	- 2.1	2083	2036	+2.3	21190	22448	- 5.6
Lincoln	771	765	+0.8	5315	5143	+3.3	58155	58116	+0.1
Invermay	555	588	- 5.6	4208	4373	- 3.8	50812	52777	- 3.7
TOTAL	5565	5622	- 1.0	25331	25124	+0.8%	289875	298982	- 3.0%

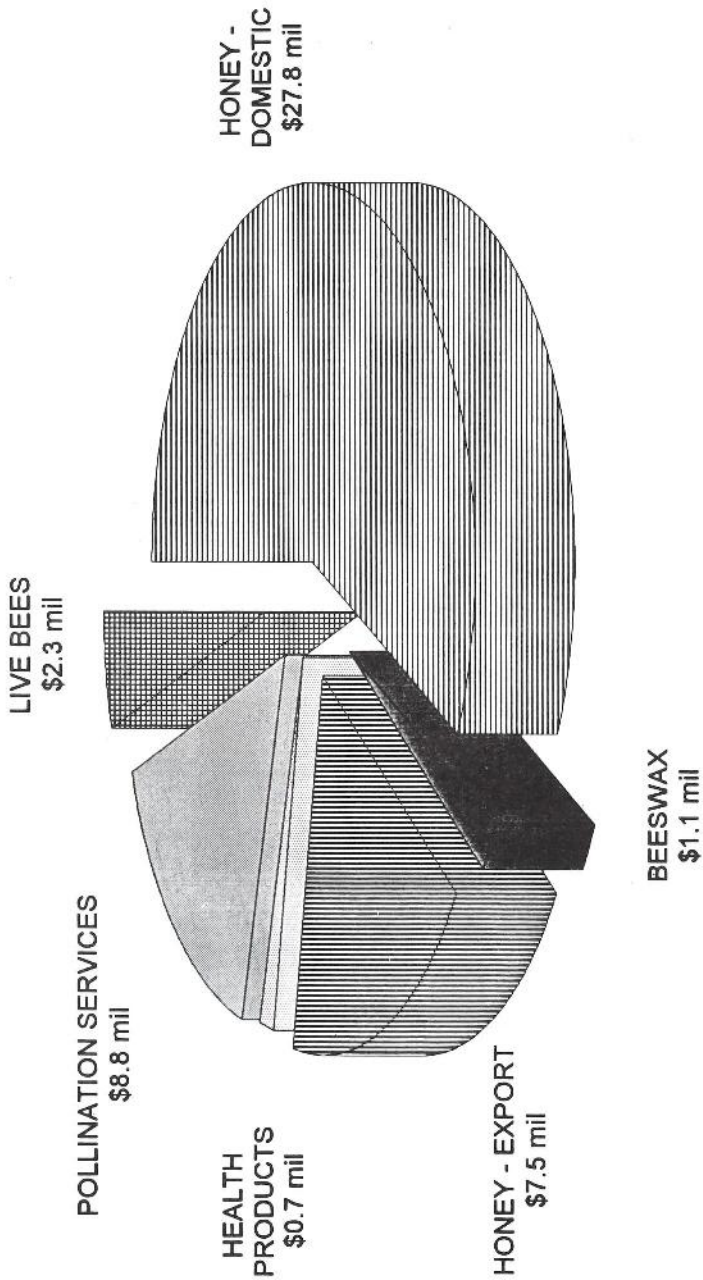


NZ ANNUAL HONEY PRODUCTION



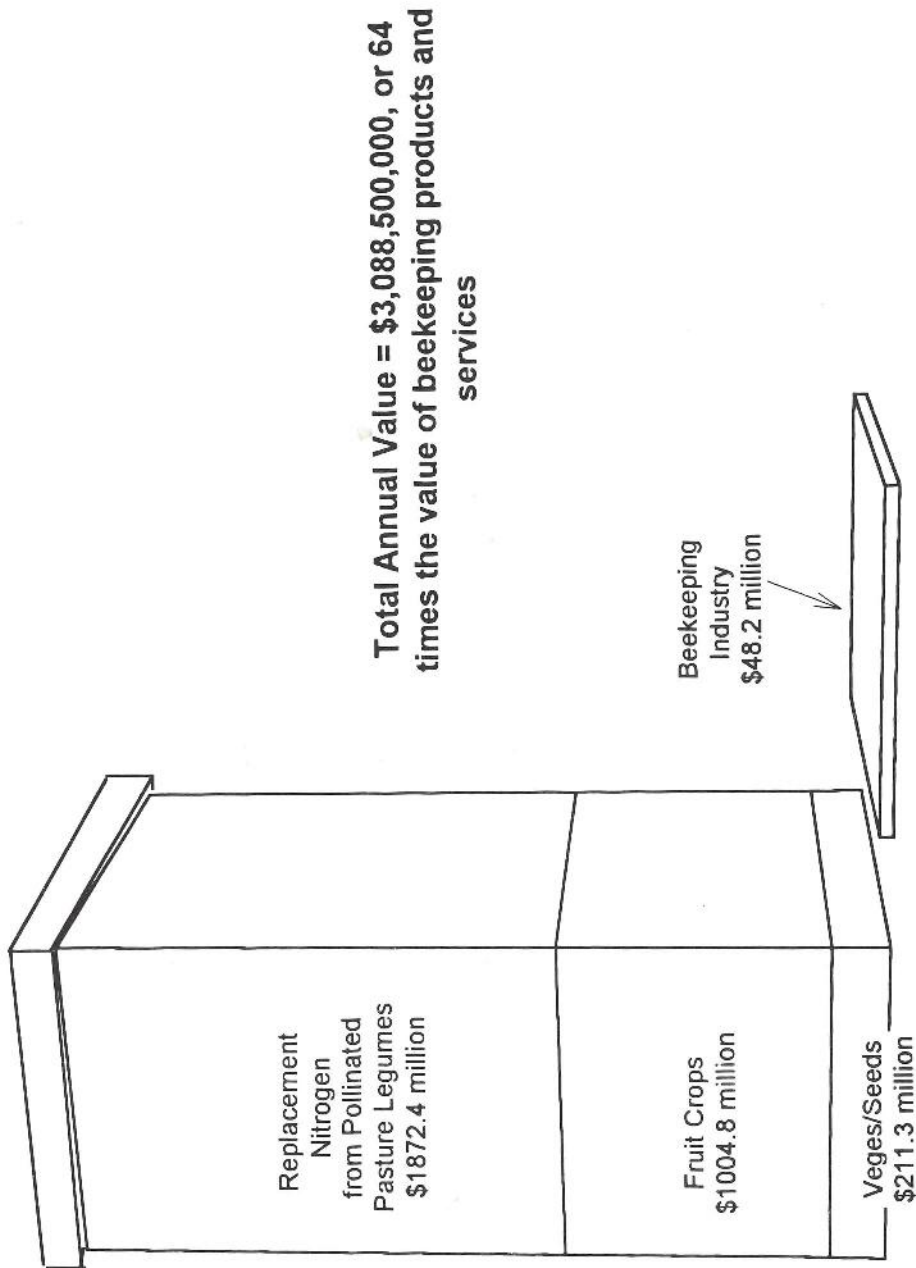
APPENDIX 3

INCOME PRODUCED FROM THE NZ BEEKEEPING INDUSTRY  
(1993 Figures)



Total Income: \$48.2 million

# VALUE OF HONEY BEE POLLINATION TO NZ PRIMARY PRODUCTION (1992 Figures)



## APPENDIX 5

**INCIDENCE OF AMERICAN FOULBROOD IN APIARY DISTRICTS TO 30 JUNE 1994  
(1993 FIGURES IN BRACKETS)**

MAF Apiary Register Location	Diseased Apiaries/ % of Total District Apiaries		Diseased Hives/ % of Total District Hives		Apiaries Inspected NBA Programme*							
	Number	%	Number	%	Number	%						
Whangarei	117	(144)	3.9	(4.7)	286	(300)	0.9	(1.0)	158	(193)	5.1	(6.4)
Hamilton	225	(213)	7.2	(7.1)	348	(344)	0.8	(0.8)	231	(134)	7.3	(4.5)
Tauranga	233	(275)	6.3	(7.7)	402	(718)	0.8	(1.4)	337	(357)	9.4	(9.9)
Palmerston North	97	(120)	2.4	(3.0)	161	(342)	0.4	(0.9)	246	(332)	6.3	(8.4)
Blenheim	177	(145)	8.9	(7.1)	543	(273)	2.7	(1.2)	235	(179)	11.7	(8.8)
Lincoln	260	(186)	4.9	(3.6)	505	(330)	0.9	(0.6)	401	(412)	7.5	(8.0)
Invermay	173	(193)	4.1	(4.4)	417	(356)	0.8	(0.7)	263	(356)	6.0	(8.1)
TOTAL	1282	(1276)	5.1	(5.1)	2662	(2663)	0.9	(0.9)	1871	(1963)	7.5	(7.8)

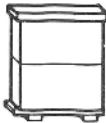
\* Includes both MAF and beekeeper inspectors, whether employed by MAF or under MAF direction (diseaseathons).



APPENDIX 6

OVERSEAS THREATS TO THE NEW ZEALAND BEEKEEPING INDUSTRY

Category	Name	Cause	Effects	Distribution	Introduction Methods	Most Likely Method
Disease of bee larvae	European foulbrood ( <i>Melissococcus pluton</i> )	Bacterium	Reduced honey production and pollination ability, at least initially, market access more difficult if drugs fed for prevention and control; reduced profitability for beekeepers	Largely world-wide, including Australia	Honey, other bee products such as pollen and royal jelly, live bee imports	Honey or pollen illegally imported from Australia which is left open to bee access
Pest of adults and pupae	Varroa mite ( <i>Varroa jacobsoni</i> )	External parasitic mite	Complete loss of bee exports; major destruction of honey and pollination industries	Asia, Europe, North America, South America, Papua New Guinea, North Africa	Live bee imports, especially from North America or Europe	Smuggled queen bees
Pest of adults and pupae	Asian bee mite ( <i>Tropilaelaps clareae</i> )	External parasitic mite	Complete loss of bee exports; major destruction of honey and pollination industries	Asia, Papua New Guinea	Live bee imports from Asia	Smuggled queen bees
Pest of adult bees	Tracheal mite ( <i>Acarapis woodi</i> )	Internal parasitic mite	Loss of bee exports; probable reduction in honey production and pollination	Europe, North and South America, Africa	Live bee imports, especially from North America or Europe	Smuggled queen bees
Undesirable genetic stock	Africanized bee ( <i>Apis mellifera scutellata</i> )	Genes for aggressive behaviour	Loss of bee exports; stinging incidents; difficulties for pollination and siting of apiaries; enforced limitation of beekeeping activities	South and Central America, USA	Live bee imports, especially from USA	Swarm on ship from Central or South America
Pest of adult bees	Bee louse( <i>Braula coeca</i> )	Parasitic fly	Complete loss of bee exports	Largely world-wide, except Pacific; Tasmania	Live bee imports	Smuggled queen bees



## APPENDIX 7      CONTACT NAMES AND ADDRESSES



### NATIONAL BEEKEEPERS' ASSOCIATION

#### Executive Secretary

c/o Hawkes Bay Agriculture & Commerce Centre  
211 Market St  
PO Box 307  
HASTINGS

Phone(06) 878-5385  
Fax    (06) 878-6007

#### Honorary Librarian

John Heineman  
c/- Post Office  
MILTON

Phone(03) 417-7197

#### Branches

The NBA has branches in the following districts:

Far North	Bay of Plenty	Marlborough	South Canterbury
Northland	Poverty Bay	Nelson	North Otago
Auckland	Hawkes Bay	West Coast	Otago
Waikato	Sthn North Island	Canterbury	Southland

Contact the Executive Secretary or your local MAF Apicultural Officer for the name and address of branch presidents and secretaries.



## MAF QUALITY MANAGEMENT

Apicultural Advisory Officers make up MAF Quality Management's Apiculture Services team, and are located at the following MAF offices:

Location	Address	Phone	Fax
Whangarei	Private Bag	(09) 437-2822	(09) 437-1368
Hamilton	Private Bag 3080	(07) 856-2833	(07) 838-5846
Tauranga	Private Bag	(07) 578-2069	(07) 578-8429
Palmerston North	PO Box 585	(06) 351-7935	(06) 351-7906
Lincoln	PO Box 24	(03) 325-3900	(03) 325-3919
Invermay	Private Bag 50034	(03) 489-3809	(03) 489-7988

MAF's National Manager (Apiculture) is located at the Hamilton office.



## BEEKEEPER TRAINING/NZ CERTIFICATE IN APICULTURE

Gavin McKenzie  
Telford Rural Polytechnic  
Private Bag  
BALCLUTHA

Phone (03) 418-1550  
Fax (03) 418-3584



## RESEARCH

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Private Bag 3123  
Ruakura  
HAMILTON

Phone (07) 856-2835  
Fax (07) 838-5073

Dr. Louise Malone  
Horticulture and Food Research Institute  
Private Bag 92169  
Mt. Albert  
AUCKLAND

Phone (09) 849-3660  
Fax (09) 846-3330



## APPENDIX 8 FURTHER SOURCES OF INFORMATION



### BOOKS

Matheson, A. *Practical Beekeeping In New Zealand*, revised edition. (Government Printer, \$34.95) An excellent reference book for New Zealand conditions. This book lists many other books on beekeeping, and is available from Cliff Van Eaton, MAF, Private Bag, Tauranga.

Walsh, R. *Nectar And Pollen Sources Of New Zealand*. (National Beekeepers' Association, \$3.95) Good information on New Zealand's unique floral sources. Available from beekeeping equipment suppliers or the NBA (PO Box 307, Hastings).

Dadant, et al. *The Hive And The Honey Bee*, revised edition. (Dadant, \$75.00) A leading world text on beekeeping with comprehensive chapters on most beekeeping topics. Available from beekeeping equipment suppliers.

Root, A.I. *The ABC and XYZ of Bee Culture*. (Root, \$66.22) A beekeeping encyclopedia, up-dated regularly. Available from beekeeping equipment suppliers.

A large number of books are available on a wide range of beekeeping topics, through the International Bee Research Association (IBRA). For further information contact:

North Island IBRA representative  
Cliff Van Eaton  
MAF  
Private Bag  
TAURANGA

South Island IBRA representative  
Peter Brunt  
Nelson Polytechnic  
Private Bag  
NELSON

The National Beekeepers' Association maintains a comprehensive library, which lends books to NBA members throughout New Zealand. A catalogue of holdings is available for \$3.50. For further information contact the librarian:

John Heineman  
c/- Post Office  
MILTON  
Otago

Telephone (03) 417 7197





## MAGAZINES

*The New Zealand Beekeeper*: a monthly magazine, free with association membership, available from the National Beekeepers' Association, PO Box 307, Hastings.

*The Apiarist*: a tabloid-style newspaper published quarterly by New Zealand Beeswax Processors Ltd, PO Box 34, Orari. *The Apiarist* is sent free to every registered beekeeper with more than five hives, and is available on subscription to others.

