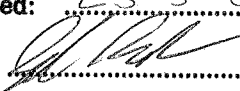


the future
development
of the
**HONEY BEE
INDUSTRY**

*Submission to the
House of Representatives
Agriculture, Fisheries and
Forestry Committee*

TREVOR MONSON
*Beekeeper and
Pollination Specialist*

May 2007

Submission No:	6
Date Received:	23-5-07
Secretary:	

Trevor Monson is a second generation beekeeper who has wide experience in most sectors of the agricultural, horticultural and forestry industries as well as beekeeping. Having managed and worked in these fields has kept him in touch with issues affecting Australian agriculture. His specialty is in pollination services to a wide range of growers and managing companies which cover practically all crops that need honey bees. Being responsible for Australia's largest almond orchards will see him contracting 120 beekeepers in supplying 45,000 hives this year. Next year will see another dramatic increase, as will the years to follow. His expertise is sought after at all levels of farming, forestry, industry, research, policy-making and government advisory bodies, such as the current Honey Bee Research Commission. His private and government sponsored research visits to the USA have enriched his knowledge even further, especially in the fields of pollination, bee husbandry and the dangers of chemicals, pests and diseases on the honey bee. In fact, he is convinced that if Australia doesn't 'wake-up and take notice' of the honey bee situation overseas, then the future of agriculture is on the brink of disaster.

Introduction

Australia is toppling on the brink of success or disaster. Serious threats to the Beekeeping industry have the potential to decimate most facets of agriculture, and in turn threaten our very existence through a diminishing food supply. After all, 90% of all food depends on the honey bee and other pollinating insects.

The present situation of the beekeeping industry around the world is a 'wake-up call' to Australia. For this reason the present inquiry is being made and the successful Honey Bee Research and Development Commission's Honeybee Industry Linkages Workshop held in Canberra. Members from all agricultural industries using honey bees were brought together, to be informed of the threats to the beekeeping industry and make plans for its protection and survival, thus keeping agriculture strong and vibrant in this country.

In February this year I was in California with a research team of six as they examined and tested strong healthy apiaries which had suddenly lost millions of bees. To experience the despair of beekeepers and the frustration of scientists who couldn't find an answer to the disappearing bees was extremely baffling and emotional. Maybe the Colony Collapse Disorder has been caused through a new strain of Nosema and/or the use of a multitude of chemicals. No one really knows. But, hey, we don't have to go down that same path!

As Australia's largest pollination contractor, I will be sub-contracting 120 beekeepers to supply 45,000 strong healthy hives of bees this year. By 2015 this figure will increase to 300 beekeepers supplying 180,000 hives. Double these figures and you will get an idea of the increasing pressure on the industry to keep up with numbers of healthy strong bees and to improve and plan their whole year's beekeeping around pollination. Frequently, I have become an educator, researcher and advisor to help my beekeepers keep up the supply.

For this reason I am in a position to see a number of areas that need addressing to enable the Honey Bee Industry to meet future pressure and demand. I am 100% behind the outcomes of the Honeybee Industry Linkages Workshop 2007 and the Beekeeping Industry's 5 year plan. In addition I would like to highlight the following recommendations.

Summary of Recommendations

1. That all agricultural sectors, and the general public, are educated on the value and importance of the beekeeping industry and that an applicable beekeeping module be included in all agricultural courses
2. That all chemicals, especially those used by farmers and beekeepers, are reviewed as to their effect on honeybees and other pollinating insects; and used sparingly, correctly and appropriately when necessary.
3. That a closer working relationship is developed with Forestry and government sponsored land carers, so that resources are made available and utilized.
4. That biosecurity is given top priority, reviewed and taken seriously.
5. That employment opportunities are facilitated to meet the needs of the beekeeping industry.
6. That education and training is established in the beekeeping industry.
7. That factors affecting pollination are researched.

1. That all agricultural sectors, and the general public, are educated on the value and importance of the beekeeping industry, and that an applicable beekeeping module be included in all agricultural courses.

Because of the increasing importance of the Honey Bee Industry to Agricultural industries, I see the increasing need for all workers on the land to have a basic understanding of the role that honey bees and other insects have in the production of the food we produce and eat. In fact, 90% of our food needs pollinating insects. Apart from honeybees there are native bees and other insects that pollinate and benefit agricultural and forest plants. Beneficial wasps remove scale from fruit crops and feed on nectar during the adult stage of their lives. Short training programs, media interviews, talks, articles in farmers' magazines, books, newspapers, TV, school education, honey label information, give-aways and internet resources are all ways to get the message out there that we all need to be aware of this precious resource and protect it.

Farmers, especially, need to know the basics of beekeeping, so that their farming schedule can be adjusted to allow for the presence of pollinating insects. In other words they need to plan where bees are going to be placed during pollination, provide suitable access to sites, have all spraying and farm work finished, know what chemicals are safe to use and what chemicals they can eliminate. Farmers need to know about bees even if they do not use them for pollination, because in all probability their neighbours will.

Farm and land managers need a greater understanding of honey bees. And this doesn't just mean farmers of bee-dependent crops such as almonds, cherries, apples, stone fruits and vegetables, etc. For example, a rice farmer may grow canola, faba beans or safflowers as rotation crops to enrich the soil. Public Land Managers and most workers in agriculture come across swarms and incidents that involve honey bees. They need to understand the habits and basic needs of honey bees, such as water, and know how to handle them.

2. That all chemicals, especially those used by farmers and beekeepers, are reviewed as to their effect on honey bees and other pollinating insects; and used sparingly, correctly and appropriately when necessary.

Insects are often the prime target for chemicals. Before registering chemicals used for agriculture and the environment, their effect on honey bees and beneficial insects needs to be rigorously tested. Some chemicals need to be reviewed, and some never used. Chemical users, farmers and beekeepers, have to know what they are doing. Some chemicals require special training. And some simply can't be applied together. Are there other ways of control without using chemicals? Do we really know what these chemicals are doing?

Since the recent Colony Collapse Disorder in the USA, a warning has been issued to farmers to know their pesticides and fumigants and how to use them. "Growers...must maintain a delicate balance between protecting their crops from pests and pathogens, and protecting the insects that are necessary to pollinate their crops." "Chemical contamination is one of the possible contributing factors that is being investigated" for CCD. Beekeepers may be using chemicals within the hive as well as farmers using chemicals on the crops the bees are visiting. The warning talked of the increased toxicity that certain chemicals have, when two or more chemicals were being used at the one time. An example was given of the common practice of combining certain insecticides and fungicides. It was found that some

combinations could increase the toxicity of a component 1,000 fold. Some farm chemicals have a systemic effect, making the treated plants toxic to insects that collect their pollen and nectar. Foraging honey bees transfer these chemicals to the hive bees and queen, causing memory, navigation, orientation and feeding behaviour problems, even death.

Refer to the attached article, "Protecting Honey Bees from Chemical Pesticides" by Maryann Frazier, Senior Extension Associate, Pennsylvania State, which was released by the official CCD website: MAAREC.org

3. That a closer working relationship is developed with Forestry and government sponsored land carers, so that resources are made available and utilized.

I believe the Beekeeping industry needs to develop a closer relationship with Forestry. Having continued access to our country's floral resources is fundamental to the survival of the Beekeeping industry. Policies and natural disasters, such as bushfires, are continually diminishing these resources at a time when we need even more. Some states, such as Queensland, are in a fazing-out period that will prohibit any use of public forest areas by 2020. Other states have areas where they have excluded bees altogether.

If the government is serious about preserving and rebuilding our country's resources and its agricultural sector, then legislation and policies need to be reviewed to support these decisions.

I applaud the government's decision to pay farmers to be environmental managers, to protect woodlands, plant trees and restore degraded areas. The Beekeeping industry would welcome input into the varieties of plants and trees being planted. Of course, this source would never replace the continuing need for public land and forest, but it would be an opportunity to make a significant contribution to much needed floral resources.

At the moment the government is considering the planting of trees for carbon credit, funded by overseas developing countries. If trees are to be planted then serious thought should be given as to their benefit and use to the environment. Once again the Beekeeping industry would like to be involved by suggesting suitable tree varieties which would be ideal for bees and other pollinating insects. This again could prove to be a tremendous asset.

Making good use of these incentives, maintaining and increasing forest resources, along with public understanding would go a long way to support the Beekeeping industry.

4. That biosecurity is given top priority, is reviewed and taken seriously.

I believe there is a way to increase surveillance for exotic pests and diseases that may sneak in through our ports. And that is to utilize our hobby beekeepers. There are a large number of hobby beekeepers that keep bees in all major cities. Hobby beekeepers need to be included in education programs so that they can keep their eyes open for any intrusion. They usually spend a lot of time observing the health and behaviour of their bees, so it would be money worth spending.

Intrusions can exist for a long time before being noticed, as was the case with the swarm of *apis cerana* found in the mast of a boat at Cairns recently. Let us not forget our hobby beekeepers, by helping them to recognize and identify problems, pests and diseases.

The current position of the Beekeeping industry in the USA and the expected lack of bees for pollination should ring alarm bells in Australia. We should be asking questions like:

1. Do we take the threat of mites and other problems seriously?
2. Do we realize that our supply of honeybees could disappear overnight?
3. Do growers and the government know that if this happens that crops will fail?
4. Are we prepared to do whatever it takes to protect our food industry which produces the best in the world?
5. Are we willing to strengthen our surveillance and educate the public, all beekeepers and those on the land?
6. If varroa mite or other mites were found in Australia, what measures are in place to insure our large pollination needs are met?
7. Would state borders be an issue when shifting 180,000 beehives into NW Victoria for almond pollination?

5. That employment opportunities are facilitated to meet the needs of the beekeeping industry.

It is my belief that the beekeeping industry will get through the challenges ahead, including varroa mites and increasing pollination demands. The real challenge will be finding extra workers, part-time, seasonal and full-time. However, the need for workers already exists. Beekeepers are reporting that it is difficult to find employees. Most are coming from overseas. It would help if the Australian government had a uniform set of guidelines for immigrants wishing to come to Australia as beekeepers. It would also be an advantage to have 3 – 6 month visas, so that workers were available for short work assignments. If varroa mite or other threat was to hit us, it could be helpful to allow overseas beekeepers and their families from the northern hemisphere to spend their off-season in Australia.

6. That education and training is established for the beekeeping industry.

In recent times the NSW Department of Primary Industry have developed a curriculum to train apprentices in beekeeping. So now an education framework exists and is possible. However, because of the low demand and/or numbers involved, it would be more practical if students from around Australia were able to train at one institution. This would mean that funding arrangements may need to be modified so that students from various states would be funded and allowed to attend an institution out of their home state. At the moment, there may be only one or two apprentices wanting to be trained in a particular state. It wouldn't be practical or economically viable to run such a small class, so they would be turned away.

I would like to suggest that the Tocal Agricultural Centre at Paterson NSW be considered as a possible training centre for beekeeping apprentices. It is near a major airport and has accommodation. So, if training were to happen in the winter off-season, there may be a class of 10 – 15 students.

7. That factors affecting pollination be researched.

As a pollination contractor, I have often been asked a number of questions by beekeepers and growers. There are no definitive answers because they have not been researched.

Beekeepers want to know:

1. What are the possibilities of cross-infection between hives? Can disease and pests from someone else's hive contaminate mine? When there are large numbers of beehives in close proximity to one another, what is the risk?
2. Do fungicides and weedicides affect on bees?
3. Does the micro fertilizer programme, which is dripper fed, have an affect on bees? (We only have research on nitrogen which shows that it does affect bees)

Growers want to know:

1. How many hives per acre do I really need for the best yields?
In the USA an average of two hives per acre are used on almonds, probably because their crop insurance demands it. However, their high-yielding orchards use three. Here in Australia, we use three hives per acre plus the wild honeybees that may be there, which the US doesn't have. No trials have ever been done. Maybe Australia's higher yields indicate that we are right.
2. How far will bees fly and successfully pollinate almonds? How many beehives should be placed on the same bee site and how far apart should the sites be?
We currently place bees on bee sites some 500 – 600 metres apart with no noticeable problems. But, have we got it right? No research has been done to discover the maximum distance they would fly and pollinate sufficiently in cold weather.
Whenever possible we place large numbers of beehives on the one site because the research seems to be showing that bigger groups of bees cross-pollinate better.

Answers to the beekeepers' questions would make it easier to find the number of hives needed for almond pollination, especially as the demand increases. And answers to the growers' questions would enable better pollination services, and maybe save them money.

Conclusion

Thank you for the opportunity to submit my ideas. I trust the inquiry will come up with some interesting ideas and beneficial outcomes. I am happy to give more information and appear in person if needed.

Appendix (attachment)

"Protecting Honey Bees from Chemical Pesticides" by Maryann Frazier, Senior Extension Associate, Pennsylvania State, USA