

Submission No:	79
Date Received:	04/07/07
Secretary:	<i>[Signature]</i>

## NSW GOVERNMENT SUBMISSION

Parliament of Australia  
House of Representatives - Standing Committee on Agriculture, Fisheries  
and Forestry

### INQUIRY INTO THE FUTURE DEVELOPMENT OF THE AUSTRALIAN HONEY BEE INDUSTRY

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## **Background**

NSW is the largest beekeeping State in Australia with:

- 3,124 or 32 percent of Australia's beekeepers;
- 263,310 or 41 percent of Australia's hives (202,190 commercial hives);
- honey production of 14,000 tonnes per annum worth \$22 million (normal season), representing about 43% of Australia's total production of 32,675 tonnes;
- sales of Queen and Package Bees of approximately \$4 million per annum; and
- sales of propolis (a sticky resin), beeswax and honey comb worth of approximately \$2.5 million per annum.

Honey exports typically account for 25% to 30% of NSW's annual production, with beeswax exports accounting for 33% of annual production.

Queen bees are produced for domestic and export markets with demand outstripping supply in both markets. The main export markets are Japan, Jordan, France, Canada, Philippines and USA, with demand for Package Bees also strong from the USA.

NSW beekeepers are paid to provide pollination services to NSW fruit, vegetable, and seed production industries, as well as the Victorian almond industry where demand for hives outstrips supply.

The largest NSW based honey packer is Beechworth Honey at Corowa. Australia's largest honey packer is Capilano which receives most of its honey from NSW beekeepers, but packs from plants in Victoria and Queensland.

Commercial beekeepers are spread throughout the State, but tend to be concentrated on the Tablelands. They typically move colonies between honey flows within 500 to 600 kilometres from where they live.

The NSW *Apiaries Act 1985* establishes a regulatory system requiring owners to register their hives and display their registration number on each hive. This assists with disease control and compliance with export requirements for some countries.

### **1. Existing Industry and Government Work that has been Undertaken for the Honey Bee Industry**

The NSW Government continues to contribute to the Australian honey bee industry in many ways which can be summarised as:

- Providing access to apiary sites on public land including State Forests, Travelling Stock Routes/Reserves and National Parks. In some cases, sites can be transferred or sold and site fees can be waived when appropriate, such as in times of drought or following bushfires;
- Providing assistance to help bee keepers manage drought, including a waiver of apiary site fees in 2002-03 to 2004-05, and subsidies for transport of water and food to drought affected hives since 2002;
- Undertaking scientific research;

- Providing extension services to build the capacity of the NSW and Australian honey bee industry including conducting field days, training sessions, meetings and conducting short courses in Beginning in Bees and Queen Bee Raising at Tocal College (a Registered Training Organisation);
- Providing regulatory services including dealing with abandoned or neglected hives, bees causing a public nuisance, threat to public health and safety, or interfering with fruit drying operations (Prohibition Orders may be issued in life threatening situations), and maintaining the beekeepers registration system;
- Providing biosecurity infrastructure and arrangements for certification of disease freedom and prevention and management of important pests and diseases including access to quality assured laboratory testing services in veterinary pathology, analytical chemistry and plant health, and investigating and responding to exotic disease or pest incursions;
- Issuing health certificates for interstate movement of apiary products and bees where required by other States;
- Export certification inspections of live bees on behalf of AQIS; and
- Assisting the NSW Police Force in investigating and managing cases of stolen hives.

## **2. Current and Future Prospects and Constraints for the Honey Bee Industry**

### ***Current and Future Prospects***

Australia has a comparative advantage as an exporter of high quality honey which is free from contaminants, residues and commonly occurring international pests and diseases. This residue free status is supported by voluntary quality assurance systems and the National Honey Residue Survey.

Current domestic and export honey prices for Australian honey reflect both the strength of the Australian dollar and a world honey price that is strongly influenced by cheap Chinese exports.

There are good prospects for expanding export of packaged bees and Queen bees. The advent of colony collapse disorder in the USA has further enhanced this prospect.

Domestic Queen bee sales and pollination services both represent strong opportunities to enhance profitability and diversify financial risks for bee keepers. Pollination dependent crops include cotton, oilseeds, clover, lucerne and a variety of horticultural crops such as almonds, apples and cherries.

Honey is finding increasing use for wound management and healing. In addition to activity against many types of bacteria, it has anti-inflammatory properties, reduces scarring and disinfects infected wounds.

### ***Constraints***

Australia's potential to exploit the "clean green" advantage of Australian honey is limited by its inability to better promote and market its quality advantage and, more broadly, the value of honey as a unique food source.

In addition, the honey bee industry has not fully capitalised on the opportunities for paid pollination because it has not been able to promote and communicate a consistent

industry service to the pollination dependant industries. There are also concerns that future expansion of the Australian almond industry will be constrained by a lack of available hives.

The NSW Food Authority has previously identified residues of the antibiotic nitrofurantoin in imported South American honey. While the residue free status enjoyed by Australian Honey is supported by voluntary QA systems and backed by the National Honey Residue Survey, any significant failure by individual Australian beekeepers to comply with pesticide product labels or adhere to relevant Australian registration advice could be viewed as a potential constraint on export markets.

The honey bee industry is heavily reliant on access to apiary sites, mostly on public land, to harvest nectar flows and maintain hives during cool weather, drought, or following bushfires.

Under existing Government policy, access to apiary sites on public land such as State Forests, National parks, and travelling stock routes and reserves, will continue, but it will not increase. Apiary sites in NSW National Parks are managed under the *National Parks and Wildlife Act 1974* which gives conservation objectives precedence over other management objectives. Other jurisdictions such as Queensland and Victoria have a similar approach.

Future access to NSW National Parks is limited because the honey bee is an exotic species and competition from feral honey bees has been listed as a key threatening process under the *NSW Threatened Species Conservation Act 1995*.

### **3. The Role of the Honey Bee Industry in Agriculture and Forestry**

Honey bee pollination is essential in agriculture, horticulture and forestry. In fact, about 65 per cent of current horticulture and agricultural crops could not be grown without pollination by honey bees.

Economic studies (1999 – 2000) listed in the RIRDC Publication No 07/067 have estimated the value of pollination across the 35 most important honey bee dependant crops at \$1.7 billion.

Pollination is also critical for the legumes upon which the grazing industries depend to fix nitrogen (reducing fertiliser inputs) and increase protein levels and digestibility of pastures.

The breadth of these effects makes it very difficult to estimate potential impacts in the event that honey bee pollination ceased such as may occur following an exotic pest or disease incursion.

### **4. Biosecurity Issues**

NSW Department of Primary Industries (NSW DPI) has 19 gazetted apiary inspectors, with 17 of these available to carry out apiary inspections in the field.

Biosecurity in the NSW honey bee industry is supported by the *Apiaries Act 1985* (the Act). This requires NSW beekeepers to be registered, and provides for control and eradication of certain diseases (including preventing their introduction from other jurisdictions). The Act also provides for the payment of compensation to owners of bees that have to be destroyed due to disease such as American Foul Brood (AFB).

Operational Plans have been developed and are supported by high profile compliance operations targeting disease hot spots in an effort to foster industry compliance with registration requirements, disease notification/eradication and other regulatory requirements under the *Apiaries Act 1985*.

The Australian honey bee industry is uniquely placed as it does not have Varroa mites, Asian mites, Tracheal mites, African bees or Asian bees, all of which create significant production impacts elsewhere and have the potential to add significant production costs if they are established here.

While Australia remains free from most major risks to honey bees, the arrival of European Foul Brood in 1977 and the Small Hive Beetle in 2002, emphasises the need for continued vigilance. While the importance of early detection is recognised, the NSW Government is a signatory to AUSTVETPLAN under which any national exotic pest or disease response would occur.

In addition to investigating reports by individual bee keepers, NSW DPI undertakes surveillance for exotic pests and diseases through involvement in Biosecurity Australia's National Sentinel Hive Program. This targets high risk locations such as shipping ports and major airports. NSW DPI also runs the sugar shake surveillance program to more broadly improve early detection of exotic pests and diseases (350 sugar shake kits have been distributed to date).

The NSW Government also recognises the potential impact of endemic pests and diseases such as AFB through its programs to reduce and control AFB. This support includes research on control and management, hive irradiation and extension of industry best practice management to beekeepers.

## **5. Trade Issues**

Honey is the primary economic driver of the Australian bee keeping industry and is the main export product. In an average production, 25% to 30% of the honey produced in Australia is exported.

The honey price is influenced by currency fluctuations and world honey prices, the latter sometimes depressed by availability of cheap Chinese honey. Chinese honey has been sold by Australian retailers under generic branding. It has no quality certification and is considered to be of inferior quality to Australian honey, due to contamination issues.

A proposal to sell Australian honey into the currently higher priced New Zealand market is not likely to significantly help Australian beekeepers. The small size of the New Zealand market is not sufficient to make such a move economically worthwhile for Australian beekeepers.

The NSW Food Authority has previously highlighted the presence of nitrofurantoin antibiotic residues in imported South American honey as an example of the need to screen imports. This also reinforces the need for Australian beekeepers to comply with pesticide product labels and adhere to relevant Australian registration advice.

The Australian beekeeping industry has implemented the HACCP based systems, BQual and BeeSafe to help meet international buyer specifications. While adoption of these systems remains voluntary, some honey packers pay a premium for accredited honey.

The National Honey Residue Survey, funded by industry levies, also helps support Australian honey exports by providing our export markets with confidence that Australian honey undergoes a rigorous residue testing process.

The possibility that honey obtained from Paterson's Curse may contain pyrrolizidine alkaloids is the only public health and safety issue with the potential to affect trade. This is well recognised worldwide phenomenon and is managed by blending with other honey to reduce alkaloid levels below acceptable levels. Acceptable alkaloid levels vary between markets.

Australia suffers from the effects of a fragmented and poorly structured marketing system for all honey bee products. Some Australian packers have demonstrated that they will source inferior quality honey when necessary and in some instances the quality of local honey has been adversely impacted by blending with inferior overseas honey.

Export of Queen Bees and Packaged Bees is also poorly organised and not well promoted internationally. Inadequate accreditation to underwrite product integrity is seen by industry to create potential for unscrupulous and unprofessional operators to undermine what could be a lucrative, long term trade. Arrangements to better coordinate marketing by Australian suppliers could help to develop this market.

## **6. The Impact of Land Management and Bushfires**

Bushfires can devastate an area for many years regarding its potential productivity for bees. Banksia heath country may take seven years to recover, eucalypts possibly several decades.

It is notable that the industry is divided over the impacts of bushfire. Some apiarists prefer long un-burnt heath, claiming it contributes positively to the production of royal jelly, while others prefer more frequently burnt foraging areas.

Whilst the NSW Government supports the honey bee industry, conservation of the natural environment, flora and fauna is the primary objective of land management in nature reserves and National Parks, and at times may impact on beekeeping. Fire management planning in National Parks involves managing the risk of wildfire, as well as optimising the likelihood of achieving ecologically appropriate fire regimes. Hazard reduction regimes to achieve these goals may not always be consistent with apiarists' preferred outcomes. Where possible, apiarists are notified in advance of proposed hazard reduction burning and trail maintenance.

In the event of a wildfire, apiarists with sites in National Parks are notified where possible but priority is given to conserving park values and protecting life.

In some instances, apiarists may also be required to relocate their existing apiary sites to another location in a National Park. These instances are detailed in the Department of Environment and Climate Change Beekeeping Policy (available publicly at [www.nationalparks.nsw.gov.au/pdfs/policy\\_beekeeping.pdf](http://www.nationalparks.nsw.gov.au/pdfs/policy_beekeeping.pdf)).

Other land management practices may impact on beekeeping operations, including temporary road closures and the use of pesticides to eradicate pest fauna and flora species. Again, apiarists are notified where practicable in advance of the activity.

The NSW Government is conscious of the need for an integrated biodiversity ethic in tree planting that caters for the satisfaction of a multitude of needs for all potential beneficiaries both human and animal in the landscape. This biodiversity ethic requires assistance at all levels of Government especially the Federal Government and the funding involved in whole of catchment community involvement in replanting tree projects.

## **7. The Research and Development Needs of the Honey Bee Industry**

The Australian Honey Bee Industry is facing productivity, profitability and structural issues which all require addressing if the industry is to be sustainable.

### ***Productivity***

The 1998 RIRDC survey that utilised NSW DPI staff in data collection established that the average production in NSW per hive is 100 kilograms of honey per annum. However, bee keepers at the higher end can already produce up to 150 kilograms of honey per hive per year.

Research on productivity improvements remains important, but is less likely to contribute to a sustainable bee industry than research on profitability and industry structural issues.

### ***Profitability***

Bee keepers, as commodity producers, are price takers for all products they produce.

Honey is wholesaled by bee keepers to packers for \$2.20 to \$2.50 per kilogram at present. This price received barely covers cost of production. After minimal processing the honey packers retail the same honey for \$10 per kilogram and higher.

Bee keepers have limited capacity to manage the impact of rising input costs such as fuel with economies of scale currently the only mechanism available to maintain financial viability. Industry experience suggests that a viable enterprise requires a production base of 600 hives or more.

## **Structural issues**

Personal observations by NSW Government's bee extension staff and communication with NSW bee keepers provide some insights on the demographics of the NSW bee keeping industry. These include:

- Bee keeping is a physically demanding industry with the average age of bee keepers increasing;
- Industry participants typically operate as family or single person businesses. This makes the business vulnerable to health issues, especially those associated with the high physical demands;
- The industry has literacy and numeracy rates that typically lag behind other agricultural sectors;
- The industry generally lacks business skills with such skills only apparent among the largest producers. The concepts of benchmarking, enterprise analysis and performance indicators to aid continuous improvement and innovation are not well understood; and
- Bee keepers generally lack the knowledge, skills and experience to influence government bodies effectively and negotiate with environmental organisations in respect to issues such as access to flora reserves on public lands.

The value of the industry to the broader agricultural community and the urban population, especially in respect to pollination, has not been effectively communicated.

The industry urgently needs better marketing arrangements and structures to capitalise on existing opportunities for domestic pollination services and for exporting Queen bees and packaged bees. A continued emphasis on capacity building of industry participants through extension, education and vocational training will also be required for the industry to reach its potential.

In NSW, a set of specialist honey bee educational resources will be prepared for the industry consistent with national competencies. The proposed series of skills sets in this project, will have the titles:

- Field Operations
- Shed Operations including Quality Assurance
- Rearing Queen Bees
- Pest and Disease Management
- Pollination Practice

NSW DPI cannot progress this initiative until the Federal Department of Education, Science and Training completes the publication of the national bee keeping competencies.

As the honey bee industry is widely dispersed across Australia there are problems achieving the critical mass of trainees required to run specialised industry training. The industry's preferred model is to work with a designated Registered Training Organisation (RTO) to deliver the training it needs to meet future industry opportunities and changes. This RTO would run specialist courses at the most appropriate location and have trainees attend from across Australia.

Current State-by-State arrangements do not reflect this model. While industry has recently developed its own competency standards through the Rural Training Authority, vocational training packages have not been developed, impeding the uptake of industry based training. It is recommended that the Commonwealth should implement a traineeship system that reflects industry needs by enabling trainees to attend their training anywhere in the country.