



# CROP POLLINATION ASSOCIATION INC.

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## **SUBMISSION TO**

### **The Future of the Beekeeping and Pollination Service Industries in Australia**

## **Background**

### **About The Crop Pollination Association Inc**

The Crop Pollination Association Inc (Vic) includes members from Queensland, New South Wales, Victoria and Northern Territory. Our members provide pollination services in all these states. Crops pollinated include nuts, citrus, fruit, vegetables, oil crops such as canola and olives plus vegetable, pasture and oil seed production. The seed production that takes place in Australia provides seed for food and pasture production throughout the world. As beekeeper pollinators we know we are helping to provide FOOD SECURITY and not just within Australia.

### **The Australian Pollination Perspective**

Commercial beekeepers use European Honey Bees (*Apis Mellifera*) for honey production and pollination. Very few beekeepers use native bees commercially due to their honey production being less than 3% of the European honey bee. European honey bees were introduced into Australia during the 1700's on the first or second fleet.

Very few beekeepers in Australia can make a living from just providing pollination services. Therefore most beekeepers that provide pollination services rely heavily on honey production combined with pollination to have a profitable business.

Currently in Australia there are many feral hives that provide some pollination to most crops. This makes it less critical for growers to pay for pollination hives. For those that do pay for pollination they can use less hives than the recommended stocking rate.

The smart growers are aware that the most critical time in the crop is at flowering time – which is pollination time. This period is where with pollination the maximum effect is had on quantity and quality of the crop.

It is rare for bees to be at the correct standard to be able to go from one pollination job straight to the next pollination job. Most times the bees go from one pollination task to an area where there is an abundance of pollen and honey – often this is a Travelling Stock Reserve (TSR), State Forest or a National Park (a rare event now) to build the bees up without any exposure to chemicals to prepare for the next pollination task. Access to resource between pollination jobs is critical for a professional pollinator.

### **The USA Pollination Comparison**

The USA Pollination industry is very different. To illustrate the point, in 2013 California almond pollination prices per hive were US\$185+ whereas in Australia almond pollination was AUD\$81+. In the USA there are very few feral hives remaining. Varroa mite has wiped most feral beehives out. Therefore if the USA grower is growing a crop that requires pollination by honeybees he knows he has to pay for managed honeybees for pollination. He will require the number of hives recommended by the Dept of Agriculture to maximize his production.

## **Submission**

### **With Reference To:**

**A. (i) Food Security:** Over 50% of the food we eat relies on honeybees for pollination. Not only vegetables and fruit but this also includes meat and milk. The main grasses (such as clover and lucerne) for the meat and milk industries rely heavily on honey bees for seed production. Without a viable pollination industry (which as stated above means a viable honey industry as well) the meat, milk, vegetable, fruit and almond industries will be far less viable and most will not be sustainable.

*Note: Most nut crops do not need honeybees for pollination, the exceptions being macadamia's and almonds. With almonds, no bees = no nuts.*

A lot of vegetable, oilseed and pasture seed production in Australia is exported to the northern hemisphere in our autumn (their spring). Therefore food security is not just for Australia but for the world.

**A. (ii) Environmental:** With cucurbits (melons, pumpkins, cucumber, etc) honeybees increase the yield by 400%. That equates to 25% of the water, chemicals and soil preparation required for the same yield. This is a better environmental outcome. The same applies for most crops (an increase in yield but not 400%) and any seed production industry.

There are NO scientific studies that have shown European honeybees adversely impact on the environment.

**A. (iii) Financial:** The seed and almond industries will disappear without managed honeybees. The milk and southern Australia meat industries will have far smaller gross margins without honeybees. The macadamia nut industry will have less profit as they rely on honeybees for pollination.

Margins will be reduced on the oilseed industries as well. With canola, honeybees increase yield by over 20% and oil content over 25% (similar figures apply to olives and lavender).

The early flowering fruit industries such as plums, cherries and apple industries will have greatly reduced margins. Apples will be of lesser quality, while there will be a greatly reduced plum and cherry crop. This all impacts the bottom line of these industries.

## **Challenges Facing the Beekeeping Industry:**

### **DOMESTICALLY**

**B. (i) Financial Viability** – the financial viability of the beekeeping and pollination industries is marginal through low payment for honey and pollination services.

(1) Honey prices are kept artificially low because of:

Imported honey mainly from China and Argentina;

Increased supermarket margins; and

An increasing price differential between the retail and the wholesale price.

(2) Pollination prices are being kept low compared to the cost of providing a pollination service and especially when compared to the USA. This is due to:

Amateur beekeepers undercutting prices,

Feral hives providing a limited pollination service,

Beekeepers with poor business skills,

Low profit margins by the pollination recipient, and

Misconceptions by the farming and agronomist communities of the pollination industry. In particular on how much work is required to provide a professional pollination service. Therefore farmers and seed companies are unwilling to pay a fair price for pollination services.

- B. (ii) Resource Security** – State Forests and National Parks are an important resource for building bees for pollination services and also as a honey resource. This is doubly important in drought years as these resources are mainly trees which can still yield honey and pollen in dry years on which to build bees for pollination.

TSR's and crown lands also provide an important resource for honeybees.

In drought years without public land resource there will be very few bees that will be at a suitable standard for pollination jobs. In the long term this will impact on food and seed prices.

- B. (iii) Chemicals** – in particular the new family of systemic neonicotinoid insecticides. Neonicotinoids are a brain toxin – not just an insect brain toxin. There have been no independent long term studies on the effects of systemic pesticides on soil (in simple terms the insecticide translocates into the soil and then appears in the following crop as well), water (including aquifers), honeybees, native bees and other beneficial insects.

Batch mixing of chemicals (a regular event done by farmers and agronomists) which can greatly increase the efficacy of these chemicals against insects and in particular honeybees. Simply put it kills bees at far lower dosage rates.

No legally enforceable label directions for applying the chemicals and poor labeling of chemicals wrt honeybee mortality. e.g. The Label states "Do not apply to flowering plants.". The farmer applies the chemical to a flowering crop and kills 500 managed bee hives. Clearly against the label and yet there is no recourse for the beekeeper to recover some of the \$250,000 they have lost.

When spraying either by air or ground locusts/grasshoppers there should be a mandated buffer zone around all apiaries/beehives.

- B. (iv) Diseases** – new and mutated honey bee diseases or diseases that cross over to the honey bees (*apis mellifera*) from other bees or insects. Australia is lucky that there are bee diseases and pests that are not currently in Australia. However the gap is narrowing as recently we have had chalkbrood and small hive beetle arrive in Australia. These both adversely impact on bees.

There is very limited research and no willingness to research the greatest threat disease to Australian beekeeping. That being *Apis Ceranae*. It has only recently been identified in Australia and has the potential to severely disrupt beekeeping operations whether they be in honey or pollination. Research is being conducted overseas but very little or none here in Australia.

Australia is underprepared for when Varroa mite arrives in Australia. It is a pest and not a disease. However this pest lowers the immune system of bees and ultimately immune system of the hive which then allows disease pathogens to kill the hive.

- B. (v) A Lack of Independent Chemical Research Facilities within Australia.** Chemical companies provide all the data when a new chemical is being registered for use within Australia. As a minimum this data needs to be independently verified. These independent tests should assess the chemicals effects on native bees and honey bees with prolonged exposure. This should be conducted as a minimum before registration is completed.
- B. (vi) Lack of Farmer and Agronomist Knowledge of Chemical Effects on Bees and other Beneficial Insects.** This includes batch mixing of chemicals and not using a lesser chemical when beneficial insects are present.

Agronomy courses cover no subjects on pollinators and their requirements. Nor do agronomy courses cover the honey bees susceptibility to chemicals.

- B. (vii) Lack of Young People Joining our Industry.** This is due to several reasons:
- Poor financial return for effort;
  - It is physical work;
  - Irregular work hours;
  - No recourse when bees get killed with chemicals by neighbouring farmers; and
  - No resource security.
- B. (viii) Poor Management of Natural Resources** – this is in two parts.

**First part is riverine mismanagement.**

Riverine tree mismanagement is detrimental to the trees (mainly River Red Gum). Not only do honeybees require the river red gums to flower regularly but also native bees and our marsupials such as possum and gliders. The same as honeybees these creatures require the nectar and pollen from the river gum flowers.

Riverine mismanagement comes in two forms:

- (i) water mismanagement** – environmental flows in the river at the wrong time of the year. This causes the river red gum trees to be scalded (the sap boils from the hot water submerging the trunk of the tree) which adversely effects the trees (the Barmah forest currently is a great example of this).
- (ii) floodplain mismanagement** – fire and prolonged dry spells kills a lot of young trees that germinated after a flood. Now with fire being tightly controlled and environmental flows flooding areas on a regular basis all trees that germinate grow to a

maximum of approx 6m tall. These trees are too close together (and will not get thinned in National Parks) never grow taller than 6m (there is only so much energy in the soil) and therefore these trees do not develop hollows for birds and marsupials. In dry times it is the big trees that yield nectar for honeybees as well as native animals and insects.

### **Second part is fire mismanagement.**

Our natural resource managers tend to only plan hazard reduction burns in spring. This distorts the plant species within the forest or scrubland and reduces biodiversity. Lack of biodiversity in the forest or scrubland is to the detriment of honey bees as well as native bees and marsupials.

Different plant species will survive a spring burn to those of an autumn burn. Spring germinators are designed to survive a hot dry summer whereas autumn germinators are designed to survive frosty wet winters and are then established enough to survive a hot dry summer.

Fire management of natural resources should alternate between spring and autumn burns.

The current fire practice of mosaic burns is a good management practice.

**B. (ix) Cotton Industry** – the expanding cotton industry is of concern not just for beekeepers but also other industries. Industries that rely on pollination for a financially viable crop eg melons, pumpkins, onion seed and that are located next to or near cotton farms.

The cotton industry regularly applies chemicals (neonicotinoids) that are deadly to honeybees, native bees and beneficial insects by aerial spraying. In the last two years 1,000 bee hives have been killed by chemicals applied to cotton crops without regard to bees. Many more hives have been adversely affected by these chemicals.

The few in the cotton industry that spray their cotton with no regard for honey bees is having two negative effects on the bee industry (pollination and honey):

- a. Cotton is often grown near rivers. Often the bee resource (honey and pollen) is along the river. Due to the risk of spraying, beekeepers are now not placing their bees on the resource (near cotton). This results in higher costs to the beekeeper who has to travel further to find honey and pollen for their bees.
- b. Beekeepers refusing pollination jobs where cotton is grown close by. Spray risk is one factor when a professional pollinator assesses a potential job. This will impact on the melon and seed growers that have cotton crops nearby.

## INTERNATIONALLY

**B. (i) Honey Production Standards** – Australia currently has B Qual plus other quality assurance schemes for honey production. This provides a trace back system for any honey contamination found. Most imported honey is not produced to the same high standard as that of Australian producers and very few have a trace back system in place.

All imported honey should be tested for heavy metals and chemicals to ensure it is of similar standard to the Australian produced honey.

**B. (ii) Lack of Auditing on International Honey Extraction and Bottling Plants** – these overseas operators should pay for the same services as Australian honey producers. This will help ensure the international product is to the same standard as the Australian product. The same standard should apply to imported honey and the Australian honey. Currently the Australian honey standard is higher. This higher standard is because the beekeeper pays the costs quality assurance and upgrading of extraction plants to be up to the current standard. To level the playing field a bit imported honey should be at the same high standard as Australian honey.

**B. (iii) Ability for Australia Producers to Export Queens and Package Bees** – protocols need to be established to other countries for the export of queen bees and package bees. The exporting of queen bees helps make our queen breeders financially viable – pollination hives need young active queens. The exporting of package bees helps to make some pollinators and honey producers businesses more viable.

**C. Current Biosecurity Arrangements:** Current biosecurity arrangements are obviously failing. Recent examples of honey bee pests entering Australia include:

Chalkbrood;

Small Hive Beetle; and

Asian Bees at Cairns.

There has been no or very little research on how these pests affect native bees and other beneficial insects.

The sentinel hive program is a great idea and will help with biosecurity. It is important to the beekeeping industry in Australia that funding for this program be continued.

**D. Australia's Food Labelling Requirements.** Current labeling laws allow ambiguity in labels. Current laws allow imported honey to be blended with Australian honey and then labelled as if to appear the honey is an Australian Product.

Synthetic honey (corn syrup plus other additives) is being marketed to look like honey and is often mistakenly bought by consumers thinking it is honey.

Labelling laws need to be tightened so that Product of Australia means that the product within the container is 100% Australian. This law will benefit many more industries than the Australian honey industry.

**E. Recommendations from the 2008 Standing Committee.** Very few of these have been adopted. If the government wants a financial and sustainable Australian pollination and honey industry then the recommendations that have not been adopted should be adopted as a matter of priority.

## CONCLUSION

The pollination industry is currently surviving which has a lot to do with almond pollination providing a base cash flow for most pollinators. However with rising costs, a barely increasing wholesale honey price and ageing beekeepers it is not known how long the pollination industry can meet the needs of all those industries that rely on pollination to some degree.

Guaranteed public resource access, better research facilities for bee diseases and chemicals will help ensure the pollination industry survives. Better honey labelling laws and chemical labelling laws that are legally enforceable will also benefit the pollination industry.

The survival of the pollination industry is to the benefit of many other industries and critical to some industries. The combination of these other industries and the pollination industry is required to provide FOOD SECURITY not just for Australia but for the world.

This submission can be placed on the website.

The Crop Pollination Association Inc Committee is willing to meet with any Inquiry representatives to provide further evidence if required.

For your consideration.