

## **PRIVATE SUBMISSION**

### **INQUIRY INTO RURAL SKILLS TRAINING AND RESEARCH**

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Background to author:

I am employed by NSW Department of Primary Industries (since 1987), as an extension officer specialising in agriculture. My submission is concerned with the "The Beekeeping Sections of Agriculture within the Australian Context".

My training and education as an expert in apiculture started at Hawkesbury Agricultural College in the late 70's. At the same time I completed a TAFE certificate in beekeeping. Since being employed by NSW DPI, I have completed a Masters Degree and PhD. My role within the department has included a range of duties always relating to issues concerning the beekeeping industry including regulation, education, extension and research. I have extensively travelled Australia interacting with the beekeeping industry. I feel that I am in a position with the relevant experience to provide an overview of the adequacy of education, research and advisory programs as at they affect the Australian Beekeeping Industry.

#### **BRIEF OVERVIEW OF THE AUSTRALIAN BEEKEEPING INDUSTRY**

The market value of honey bee products is estimated to be \$65 million/per annum, directly providing employment for 3000 persons. Approximately 30% of the average annual honey crop is exported, which attracts a premium on the world market.

Commercial beekeeping is a family based rural enterprise, spread throughout regional Australia. Approximately 500,000 beehives are under management. There is a very strong interest in beekeeping as a hobby and this is the source of many commercial beekeepers as their interest, enthusiasm and expertise develops. There are approximately 10,000 beekeepers across Australia managing from 1 to a 1000 hives. The expertise and knowledge of individuals has to be substantially greater when the transition from amateur to commercial is undertaken.

The medical value of honey is only been appreciated by western societies including Australia in recent years. Research conducted by Sydney University, Charles Stuart University, Queensland University and Auckland University have provided evidence of the value of various honey sources for external use as a antimicrobial. It has also been demonstrated to speed up the healing process with external ulcers.

Currently the greatest value derived from honeybees is the role they play in pollination. The estimated contribution by honeybees to Australian agricultural industries is \$1.6 billion. Honeybees are exceptional pollination agents. Their value to the greater community is not materially realised by beekeepers.

Growth sectors of the industry include an expansion in paid pollination services, eg almonds and live bee exports. Recently the USA market was opened after decades of negotiation. This market provides significant opportunities to the Australian beekeeping industry through the sale of package live bees and queen bees.

All opportunities on offer require a new level of knowledge and skill by the beekeeping industry to fully realise the benefits.

The threats to the industry include the costs of honey production in excess of returns. Cheap imported honey, generic supermarket brands putting downward pressure on price.

Opportunities include increasing pollination income, export of live bees, production of specific floral types of honey for medical use and better markets for Australian honey, due to our clean-green image on the world markets.

## **TERMS OF REFERENCE**

### **1. Access and pathways to vocational and tertiary education.**

In all respects these are now limited in the beekeeping industry and the opportunities continue to diminish. No University in Australia offers training in beekeeping as part of its curriculum that is deemed adequate to prepare for a career in beekeeping. Vocational training and education is also very piecemeal and patchy. There is no current clear pathway for new players who may consider entering the beekeeping industry. Very few beekeepers can afford to employ trainees and in many cases this is not encouraged by the nature of the competition for apiary sites. Commercial beekeepers are essentially nomadic and do not necessarily occupy the same sites each season.

The knowledge gained over many years of experience on flowering patterns of targeted flora is closely guarded to avoid competition for sites. New players in the industry are either relations, i.e. sons, nephews etc or come from the amateur scene. The retention rate in the industry of the later group is low.

### **2. Skill Requirements**

The beekeeping industry is very skill based in the day to day management of the relative enterprises. The knowledge and skills necessary to be successful at beekeeping can be taught or learnt by trial and error. Mostly the teaching is conducted by a mentor, i.e. father, uncle, friend or if these are not available then via reading, attending field days and learning by experience. In both cases the learning outcomes may be left wanting in relation to the needs of the new player.

The competency standards have recently been finalised for the beekeeping industry through the Rural Training Authority. These are only check lists agreed to by industry and a panel of experts on what is regarded as the essential knowledge and skill level a beekeeper requires, to carry out certain functions or operations in a beekeeping enterprise.

Training packages have not been developed at this stage and to my knowledge there are no immediate funds to do so.

### **3. Provision of extension and advisory services**

On a national scale these are virtually non-existent for the beekeeping industry. Only in NSW is there dedicated extension staff within NSW Department of Primary Industries specialising in honeybees. This has been reduced from 6 to 3 over the last 15 years. The staff in other State DPI departments working on honeybees are largely focused on state legislation involving honey bee diseases.

In recent years the honeybee committee within RIRDC has initiated an annual gathering of persons conducting research projects funded by RIRDC. This is the only forum whereby there is any significant link created between, research and extension agents. Extension is an area whereby it is difficult to measure the impact in the short term conducted and is usually seen as a poor cousin to research. With research you apply for funds, carry out the project, publish the findings, perhaps deliver a talk at an industry conference, then move onto the next project.

With extension the aim is to be a change agent and assist the rural community in question, to adopt industry best practice or consider implementing the latest research whether it be generated in Australia or elsewhere. The rate of adoption is influenced by a range of parameters and the success is frequently difficult to gauge. This lack of clear outcomes does not sit well in this day and age, due to short term budget considerations.

#### **4. Australian government role is supporting education, research and advisory programs and the impact on the viability and sustainability of the beekeeping industry.**

**Education:** Historically, Hawkesbury Agricultural College and Gatton Agricultural College provided skill based training and opportunities for entering the beekeeping industry via short courses. When these institutions became Universities the emphasis changed and neither re-badge institution provides the same level of beekeeping education and training. The TAFE system in some regions has conducted short courses but the range of expectations of students is such that courses are very basic in content. The demand for such education and training is such that a local or regional focus by a learning institution will not be able to consistently attract sufficient interest to be viable in the long term.

A correspondence course has been available through the NSW TAFE system for a number of decades and has a slow trickle of interest. This course is neither directed at amateur or commercial beekeepers and tries to cross the whole spectrum. It only provides a single weekend of instruction each year which can only ever be treated as a basic introduction to beekeeping.

NSW Department of Primary Industries conducts some courses in beekeeping, one weekend introduction along similar lines to that conducted by TAFE. A specialist 3 day skill based queen rearing course is also conducted by NSW DPI which has been delivered in Tasmania and SA, as well as regional NSW. This is a significant demand for further courses and education pathways.

There is a significant need for an institution or organisation within Australia to become the recognised provider of beekeeping education particularly aimed at higher

levels of skill based learning for those entering commercial beekeeping or existing operations seeking to diversify or develop their beekeeping business.

**Research:** Beekeeping research is largely coordinated by the honeybee program with RIRDC. Its limited budget and demands from industry means that it can only ever consider the operational costs of a project and not the salaries or overheads of the organisations seeking funds. There is no centre of excellence in relation to applied research within the university system. A few universities conduct projects, researched using honey bees.

There is only one dedicated bee scientist in the ranks of CSIRO who has been very successful in his endeavours to leverage his efforts in beekeeping research. With only one scientist the breadth of research can only be limited if the depth of the subjects researched is to be worth while. This scientist relies heavily on funds outside of CSIRO to operate.

Various state department personnel conduct beekeeping research as a part of their job function. The only dedicated bee researcher at this level of government is in WA. Research within WA Agriculture is the process of being dismantled.

The constraints of researchers and organisations to find industry or private business funds to conduct research has meant that beekeeping research has been put under a lot of pressure as the amount of funds available from industry are limited. Many projects that could be considered and have a major community benefit, such as those with a pollination focus or medial uses of honey struggle, due to the difficulty of tying up the intellectual property rights. Funds for public good or major agricultural industry research outcomes not directly relating to beekeeper productivity outcomes will by and large not be funded.

**Research Publication:** Part of the rigour of conducting research is in the publication process, ensuring what is eventually released, is peer reviewed, ensuring high quality scientific publications. A popular vehicle for this has been the “Australian Journal of Experimental Agriculture”, published by CSIRO. The funding for this journal has been via Federal & State Government support. This will be reduced to zero in 2006, which has prompted the editors to justifiably indicate that there will be lower Australian context (60%) hoping to attract more overseas papers (increasing the cost of Australian research), increasing the rejection rate (thus many research findings originating from Australian researchers may either not find a suitable journal for publication or end up in a journal published in another country without a general Australian readership). Borderline papers will most definitely be omitted from the journal.

This creates a major problem for publishing papers on honeybees due to the low readership of such topics within Australia.

**Advisory:** Advisory programs have largely been the role of the various State Departments of Primary Industries. The limited advisory staff in most cases are hybrid inspectors being responsible for on farming state legislation concerning bee disease. Therefore in most circumstances advisory programs have been directed at bee disease control with significantly less resources directed at the beekeeping management subjects and even less at advisory programs aimed at the significant benefits derived from honey bee pollination.

