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# *AUSTRALIA'S HONEYBEE NEWS*



The official Journal of the NSW Apiarists' Association (NSWAA) www.nswaa.com.au

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COVER: His Excellency The Hon David Hurley, Governor of NSW and 'Beekeeper by Appointment' Bruce White OAM inspecting hives at the Illawarra ABA Branch at Sutherland

PHOTO: Emmanual Farrugia

Copy Deadline for Next Issue of Australia's Honeybee News - 20 November 2015

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## Membership Subscription Rates

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- Provide a means for the commercial apiarists of NSW to be represented through a common organisation
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- Provide strong representation to Government
- Membership Badge
- Copy of Code of Practice for Keeping Bees on Forested Lands
- Annual subscription to *Australia's Honeybee News* the NSWAA bimonthly Journal and free classified advertisement in Journal
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## NSW Apiarists' Association Inc. Executive Council



Casey Cooper, Kate McGilvray, Stephen Targett, Shona Blair, Neil Bingley, Rob Michie

PRESIDENT: Neil Bingley 101 Woodfield Rd Sutton 2620 M: 0428 487 105 Email: beez101@bigpond.net.au VICE PRESIDENT: Casey Cooper Darby's Road Tingha 2369 M: 0428 233 551 Email: cooperbees@bigpond.com.au COUNCILLORS:

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BRANCHES	<b>PRESIDENTS</b>		<b>SECRETARIES</b>	
Central Tablelands	Mal Porter	02 6337 5383	Debbie Porter	02 6337 5383
Hunter Valley	Col Wilson	02 4930 4950	TBA	
North Coast	Barry Watts	02 6689 5359	Col Maloney	02 6663 7051
Northern Tablelands	Brian Woolfe	02 6732 3168	Allyssa Staggs	02 6723 1361
Riverina	David Mumford	02 6959 2519	John Smith	02 6926 2227
Southern Tablelands	James Kershaw	0400 370 481	Tara Er	0414 527 481
Sydney	Paul Drew	02 9887 1175	Tanya Ananin	0414 501 198
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Western Plains	Bryn Jones	02 6887 2638	Lisa Mumford	02 6887 2638

#### AUSTRALIAN HONEY BEE INDUSTRY COUNCIL (AHBIC)

**Chairman:** Ian Zadow Mob: 0429 433 125
PO Box 339, Tintinara SA 5266 **Executive Director:** Trevor Weatherhead Ph: 07 5467 2265
Mailing address: PO Box 4253, Raceview QLD 4305

Ph: 08 8757 2435 Email: immjzad@bigpond.com Email: ahbic@honeybee.org.au Website: www.honeybee.org.au

#### HONEY BEE RESEARCH & DEVELOPMENT COMMITTEE (HBRDC)

Ms Margie Heath, Project Manager, RIRDC PO Box 4776, Kingston ACT 2604 Ph: 02 6271 4145 Email: Margaret.Heath@rirdc.gov.au Website: www.rirdc.gov.au

### AUSTRALIAN QUEEN BEE BREEDERS ASSOCIATION (AQBBA)

Secretary: Mrs Paula Dewar, 157 Lake Moogerah Road Kalbar QLD 4309 Ph: 07 5463 5633 Email: agbba@bigpond.com

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Secretary: Mr Stephen Targett, PO Box 325 Narrandera NSW 2700 Ph: 0428 649 321 Email: wally.56@hotmail.com

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Secretary: Mr Ross Christiansen Email: ross@superbee.com.au



# PRESIDENT'S REPORT



#### RESOURCES

- It is extremely disheartening not to have received any responses to my requests for members to inform your Association of any sites lost to the industry due to land tenure change in recent years. I have had numerous reports of such cases but as yet no responses have been forthcoming, so my position on your Industry Resource Committee is hindered when negotiating with the relevant government agencies, but I will continue to argue for a sustainable and equitable system of bee site allocation and fee structures as well as advocate the necessity to allow new sites where appropriate and re-issue of lost bee sites as a matter of priority.
- Vice President, Casey Cooper, and I met with Minister Speakman, Minister for the Environment, on 22 September and had discussions as to industries concerns over non recognition of private lands bee sites that are incorporated into new National Parks. We communicated to the Minister that any loss of resource was an impediment to being able to supply hives to service pollination requirements. No solution was forthcoming. We will continue to work with policy personnel at the Office of the Environment and Heritage aiming at developing an acceptable outcome.
- > There has been progression on our aim to have a whole of government approach to Apiary Policy across all government agencies, with the formation of a working group consisting of representatives from all relevant government agencies and myself as NSWAA representative, is now being formed. Our first meeting is due to be held sometime in October.
- > FCNSW has advised that until a new policy is formulated:
  - New permits will be issued to 31 March 2016, including Western Region;
  - Existing permits will be renewed for one year until 31 March 2017;
  - o Hive numbers on sites will be limited to 200.

If members have any queries on these or other FCNSW matters please contact Richard Rienstra: richard.reinstra@FCNSW.com.au or 02 6586 9733.

The process of gaining consensus across all government agencies will in my opinion be a lengthy process but must be pursued to enable our industry to grow and prosper. Currently we have to deal with individual agencies, all with varying ideals and policies which creates many problems for individual beekeepers and industry as a whole as we strive to ensure, we as beekeepers can meet future demands for pollination services and food security to NSW.

#### DPI

- Tim Burfitt officially retires from NSW DPI on 2 October. Tim has been a real asset to the NSWAA executive during his time as manager Intensive Livestock. His replacement has been announced and we were fortunate to meet Alex Russell at our recent executive meeting. Alex is based at Dubbo and has 19 years experience in the department in the sheep industry. Alex comes to us highly recommended by those who know him. The executive were able to relate to Alex the main issues affecting the beekeeping industry and we hope he will work as strongly and tirelessly as Tim for our cause.
- ➤ Industry still awaits the arrival of Elizabeth Frost into Australia. As mentioned in my last report Elizabeth will be joining the DPI team to be based at Tocal College. She

has also been appointed as NSWAA's representative on the AHBIC education committee. As Elizabeth's visa has still not been approved, I have sent a letter to the Federal Immigration Minister emphasising that Elizabeth's position in the role of industry education is of vital importance and as such could her visa application be expedited as a matter of urgency.

#### TOP BEEKEEPER

The Rural Industries Research and Development Corporation [RIRDC] is looking to create a series of video case studies featuring leading beekeepers to help others learn best practice techniques. The nominated beekeeper must be willing to star in a short video on RIRDC's YouTube channel. One nominee will be selected from all nominated nationally to receive a RIRDC funded travel award. The selected nominee must be willing to travel and convey their experiences to the industry. Any member wishing to be considered by your executive as NSW's nominee please advise secretary Kate McGilvray info@nswaa.com.au

#### **CONFERENCE**

Next year's conference will be held in Albury on 12-13 May 2016. Your executive is well into discussions over speaker content and we will advise as soon as details become available.

#### **EXECUTIVE MEETING**

The next executive meeting will be held in Dubbo on Monday 7 December 2015.

#### **GOVERNANCE**

At conference in July a motion was carried to substantially increase membership fees. The reason behind this move was to allow for the possible employment of an Executive Officer or a combination of increased use of outsourcing of relevant expertise on current issues and increased secretarial hours. After discussions at our executive meeting it was resolved to use expertise on an as needs basis until such time as our Association has sufficient financial backing to enable further deliberations as to whether we pursue a full or part time executive officer position. If you as members believe your Association is approaching the issue of resource security in an acceptable manner, I urge you to continue your financial support. Without your support your Association will be unable to put time and resources into the extremely important resource issue. Your executive is in the final stages of developing a business plan, which has as priority One, Resource. Further information on this plan will be advised when available.

#### **EDUCATION & TRAINING**

NSWAA has been notified that Certificate III in beekeeping has been added to the NSW skills list. What this means to industry I am not quite sure other than some funding will be available to employers to assist training of new employees.

We can expect more information in the area of vocational training once Elizabeth Frost assumes her position at Tocal College.

#### **BEE VIGILANT**

As Canola crops wane some growers are considering pesticide use, please make sure your contact details are readily available to persons wishing to spray, hopefully avoiding serious bee losses.

#### **State President** *Neil Bingley*

# MARCUS OLDHAM LEADERSHIP PROGRAM

Thanks to the NSWAA committee I had the pleasure of attending the Marcus Oldham Rural Leadership Program in late June of 2015. The seven day course has three coordinators: Fiona Chambers of Fernleigh Free-Range, Mike Stephens from Meridian Agriculture, and Neil Inall former ABC Rural Reporter) from day one the coordinators were loading us up with useful tips and insights into rural leadership. From social media, to emotional intelligence, the Program was extremely informative and I would highly recommend it to anyone working in agriculture.

We stayed at the Marcus Oldham Campus, on the outskirts of Geelong. It was like being in a fishbowl, cut off from the outside world. Each day was a solid 10 hours of learning, followed by formal dinners with industry leaders including John Hughes, Chairman of National Meat Industry Training Advisory Council Limited, and Dr Dawn Casey who spoke about leadership and innovation.

The program really was focused on fine tuning leadership skills such as communication skills like negotiation and working with the media. We also looked at ourselves and learnt about how we can understand others by understanding ourselves. At times it even got pretty emotional for some of the participants.

One of the most important ideas I took away from the program was the need for a succession plan. As we know commercial beekeeping is usually a family affair. In fact agriculture tends to be a family affair, and sometimes we don't give succession planning as much consideration as it disserves. The plan might be that in three years one of the children is going to take over. But how is that actually going to happen? Should we sell the farm to them? Or maybe we should sign the business over to them. Sometimes these questions aren't thought about until crunch time, and then it can get very stressful and messy.

The importance of a planned succession really struck me as a young member of the family who may be taking over a family business one day. I remember thinking that as I get older and take on more responsibility I really want things to be as smooth and fair as possible.

Overall, attending the Marcus Oldham Rural leadership Program was an incredible week for me. I learnt so much about myself, how to work successfully with others and ways to work towards a better world for bees and beekeepers. I'm extremely grateful to the NSW Apiarist Association by helping me to become a better beekeeper and I hope I can use these skills to make difference in our industry.

Mitchell Pearce



# HONEYBEES RETURN TO GOVERNMENT HOUSE

His Excellency the Honourable David Hurley AC DSC (Retired), Governor of NSW has installed two hives at Government House. He had previously approached Bruce White at the *Honeyland* stand at the Sydney Show expressing an interest in keeping bees and has also visited the Bee Garden at Sutherland operated by the Illawarra Amateur Beekeepers.

On Friday 4 September a priviliged group of representatives from the beekeeping Industry were invited to morning tea with the Governor and Mrs Hurley at Government House.

We were greeted by Estate Manager Mr Dayn Cooper who showed us the Governor's Apiary and we inspected the bees that had been delivered by Bruce White (Beekeeper by Appointment!) the previous Friday. The bees appeared to be settling in well, enjoying their new home and the vast array of flowers in the neighbouring Royal Botanic Gardens.

After a very tasty morning tea and a chat we were given a tour of the house and an informative insight into the life of Governors of NSW – past and present.

Note: The very first honeybees that arrived in Australia in 1822 went to the Governor's residence which at that time was situated in Parramatta.



The Governor having a close look



Bruce sharing his knowledge



At Government House

Photos: Emmanuel Farrugia



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# **NEW MEMBERS**

A warm welcome to the following new members:

Graham Baker Nadine Chapman Nicholai Drake Tim Gardner Nathan Greber Nathan Joy Frank Malfroy

Frank Malfroy & Jenny Douglas James Millar Ross Robson Greg Staker Janet Stephens Glen Innes Penrith North Nowra Cudgen Casino Bungendore

Lyndhurst Hartley Cessnock Broken Hill Wentworth Falls

# VALE BOB PERKINS

It is with sadness that we inform our members of the death of our member Bob Perkins on the 19 September.

Bob was a member of both the NSWAA Sydney branch and also the Illawarra amateurs. Bob was a kind and knowledgeable, soft spoken man who was revered for his knowledge of bees and his willingness to share his knowledge.

Our sincere condolences to Bob's family and friends.

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# 457 VISA TRAINING COMMITMENT

The NSW Department of Primary Industries, through its Registered Training Organisation, Tocal College has established and administers an industry training account for the purpose outlined in this article.

This account is to fund training and retraining of Australian residents in agriculture. It is the responsibility of the contributor to deposit the correct amount according to its obligations. Contributors to this fund should be aware that the NSW Department of Primary Industries will cooperate with the relevant federal agencies/authorities that need to audit the accounts to ensure compliance with the intent of the Industry Training Fund.

Payments should be made to the NSW Department of Primary Industries, c/o Manager Education Delivery, 815 Tocal Road, Tocal College, Paterson NSW 2421.

The following details need to be provided by contributors to this fund:

- full name of business owner
- Name/names of partners
- Company/partnership name
- ABN
- Contact address, business phone, email and mobile phone number.

NSW Department of Primary Industries (DPI) cannot accept electronic deposits, but can receive cheques or take credit card payment over the phone.

Tocal College, NSW DPI will issue a letter regarding confirmation of payment, and will email the official receipt once payment is received. The Tocal College national provider number is 91166.

To organise payments directly you can make contact with my colleague Leanne Jago on 02 4939 8879.

#### Darren Bayley

Manager Education Delivery Tocal College **NSW Department of Primary Industries** Paterson NSW 2421 W: www.tocal.nsw.edu.au T: 02 4939 8810 F: 02 4939 8919 M: 0447 486 760 E: darren.bayley@dpi.nsw.gov.au

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Australia's Honeybee News Sept/Oct 2015

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# BEE BIOSECURITY OFFICER

**Organisation/Entity:** Department of Primary Industries

**Job Category:** Regulatory and Compliance

Job Location: Regional NSW / Bathurst & Central West NSW

Job Reference Number:00003VE8Work Type:Full-TimeNumber of Positions:1

**Total Remuneration Package:** Total remuneration package up to \$124,378 pa, includes salary

(\$58,687 - \$112,713 range pa), employer's contribution to

superannuation and annual leave loading.

**Contact:** (02) 6391 3747 - Kathy Gott **Closing Date:** 18/10/2015 - 11:59 PM

# **Department of Primary Industries**

## **Biosecurity**

Location: Orange, NSW

• Professional Officer Grade 1-4 Total remuneration package up to \$124,378 p a, includes salary (\$58,687 - \$112,713 range pa), employer's contribution to superannuation and annual leave loading.

This is a temporary full time role up to two (2) years.

#### About the Role

Deliver the NSW component of the National Bee Biosecurity Program, involving increasing the awareness and knowledge of bee biosecurity and priority pest threats to the bee industry among bee keepers and other industry participants and promoting and facilitating biosecurity best practice.

### The Requirements

- A degree in Agricultural Science, Horticultural Science, Science or an equivalent qualification
- Demonstrated knowledge and understanding of honey bee biosecurity issues and the industry in NSW
- A valid driver's licence and willingness to travel

To be the successful candidate within this role you will possess or have the ability to demonstrate the key accountabilities of the role including:

- Developing and presenting training activities in the provision of biosecurity information and specific advice to improve bee biosecurity and promote best practice.
- Preparing and delivering resource materials to assist bee industry adoption of biosecurity best practice and increase knowledge of emergency plant pests and reporting procedures.
- Identifying opportunities and developing and providing technical advice and support for collecting and recording surveillance data for high priority exotic pests of the honey bee industry.
- Training in state and national policies and strategies for responding to emergency plant pest incursions and to actively participate in emergency plant pest responses, complying with state and national obligations.

## **About the Department**

The NSW Department of Industry, Skills and Regional Development (known as the NSW Department of Industry) leads the state government's contribution to making NSW:

- a fertile place to invest and to produce goods and services, and thereby
- create jobs and opportunities for our citizens

We support all areas of economic activity where NSW has competitive strengths. We also have responsibilities for:

- skill formation and development to match industry demand
- partnering with stakeholders in stewardship and sustainable use of the state's natural resources
- supporting economic growth in the regions

Our strategies are built on close relationships to understand industry's needs. We deliver a wide range of training and specialist advisory services; and we help to secure efficient and dependable government decision-making that contributes to business confidence.

We measure our success by the:

- growth in quantity of employment and the value of output
- competitiveness and sustainability of industries in NSW

NSW Primary Industries (NSW DPI) within NSW Department of Industry, Skills and Regional Development supports the development of profitable primary industries that create a more prosperous NSW and contributes to a better environment through the sustainable use of natural resources.

**Applying for the Role** 

Applicants must address their suitability by responding to the following targeted question in a cover letter [maximum two pages] as well as supplying an updated copy of their resume with relevant skills and experience and how these relate to the capabilities and key accountabilities of the role outlined in the role description.

- 1. Describe a situation when you had to engage with beekeepers on a contentious issue and evaluate your effectiveness in creating attitude or practise change.
- 2. What do you see as key biosecurity risks in this industry and describe strategies you will use to promote biosecurity among beekeepers.

#### Additional Information

Applications must be lodged electronically on www.jobs.nsw.gov.au Applications submitted via email will not be accepted.

Part of the assessment process may include additional online capability testing, skills testing or work samples in accordance with the new Government Sector Employment Act 2013; therefore you may be contacted to participate. For more information regarding capability based assessment techniques, please read the article: Capability-Based Assessments for Merit-Based Employment

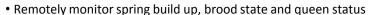
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# DOUG'S COLUMN

Doug Somerville Technical Specialist, Apiculture - NSW Department of Primary Industries - Goulburn doug.somerville@dpi.nsw.gov.au



#### RULES AND REGULATIONS

Not the most exciting topic, but one I was asked to speak about at a beekeepers' field day organized by the Tamworth branch of the NSW Apiarists' Association in September. When I was first asked to talk on this subject, I was tempted to give it a miss since I have not been an inspector under the Apiaries Act since the early 1990s.

Up to the early 1990s inspecting bee hives for American foulbrood disease was a major component of the Apiary section's duties. At the time there were six dedicated 'Apiary Officers' (inspectors) with the NSW Department of Agriculture, with their major focus on AFB.

Time was also allocated to education, extension and research, but these areas were by and large a lot smaller component across the group. From the early 1990s onwards regulatory activities conducted by the department, such as apiary inspections, health certificates, abandoned and neglected beehives and nuisance beehives became the responsibility of the Compliance Section of the department.

Mick Rankmore scored the job of being the manager of all these functions across the state. Mick's title is Regulatory Specialist Honey Bees. Mick has access to a network of multi-skilled inspectors across the state. These inspectors also conduct compliance work in a range of other primary industries including plant and animal fields.

This group of people is not employed to provide education, training, advice or to be actively involved in research. That is the domain of the two 'apiary officers' remaining in the system – i.e. Nick Annand (Bathurst) and myself, based at Goulburn.

I have talked about the government approach to AFB and hive inspections in past Honey Bee News articles. Suffice to say that there is a lot more emphasis on beekeepers sorting out their own problems with this disease. The Compliance Section is there to sort out recalcitrants or laggards in the industry. Put simply, they are not there to hold your hand and give you advice.

Bruce Christie the Chief Biosecurity Officer for NSW Department of Primary Industries (DPI), has attended a number of the NSW Apiarists' Association conferences over the past ten years or so. His message has been consistent and clear – unless the industry steps up and collectively takes responsibility for biosecurity, particularly endemic issues such as AFB, then the government has little incentive to stay engaged in this activity.

Along came "Australian Honey Bee Industry Biosecurity Code of Practice" compiled by a small band of dedicated beekeepers under the Australian Honey Bee Industry Council umbrella. The development of the code was ably assisted by Sam Malfroy from Plant Health Australia. The code Version 1 (April 2015) is available on the AHBIC web site www.honeybee.org.au

This code was voted on by the beekeeping industry at this year's round of state beekeeping conferences around Australia. The code was endorsed by the beekeeping industry, but not without considerable debate. I intentionally did not get involved in the discussion, but I was contacted by a number of beekeepers concerned about these new 'rules and regulations'. Needless to say, I spent many hours discussing the merits of the components of the code that created the most concern to these individuals.

What I avoided (where possible) was to enter into discussions where 'emotions' were dominating the discussion. What many failed to comprehend was the fact that much of the code was already in legislation within NSW. If anything, the code was about ensuring that other state governments maintained a presence in the management of endemic diseases of honey bees. Also there are always new entrants into the world of beekeeping. Having an industry endorsed code is certainly a worthwhile document to assist these new players in the beekeeping industry.

A quick search of the internet reveals the basic definition of a code of practice- "a code of practice is a set of written rules which explains how people working in a particular profession should behave". A code brings a range of groups, including industry and government, onto the same page. The code as voted on this past winter, is now the "national" approach to bee biosecurity.

So what changes or additions are likely to occur in NSW? My view is, possibly very few. What the code of practise hopefully does is slow or stop the decline of government resources in the area of bee biosecurity within NSW. The code's objectives in brief are stated as:

- Improve the general level of pest and disease control
- Assist beekeepers in recognising exotic pests and diseases
- Encourage beekeepers to conduct regular surveillance
- With particular emphasis on AFB
- Facilitate cross-border movements of beehives.

Nothing startling at all about these objectives, all quite defendable. In the document, training and education is discussed, a no-brainer, but it does amaze me how some long-term beekeepers are clueless in relation to the key pests and diseases that impact on their bees.

Nick Annand and myself conducted a number of Pests and Disease courses over recent years, primarily aimed at commercial beekeepers. I was personally very pleased with the strong response we received from the beekeeping industry. This course is now on-line and available as an e-learning course. We also generated a book from the notes we accumulated when conducting this course titled "Healthy Bees" – www.tocal.nsw.edu.au/publications

The code goes on to suggest that regular inspections of brood nests of beehives are important. The word 'regular' is a bit open-ended but a thorough brood inspection in early spring and another in the autumn is certainly a minimum, from my experience. Inspecting non-performing beehives at other times of the year is also a good idea. Is the hive not performing because of disease, or has the queen failed? Either way, this is vital information for the management of beehives.

I had a number of conversations about the code, suggesting that beekeepers should adopt a 'barrier system'. Well I do know one beekeeper who practises that at the extreme and extracted boxes (combs and all) go back to the same hive. Top marks to this beekeeper. This beekeeper is a full-time commercial beekeeper. The most common barrier system in the industry is where supers go back to the same load of bees. Each apiary is treated as a separate operational group or unit.

While many beekeepers don't practise either of these systems I ask the question "would you incorporate any beehive material given to you or recently purchased second-hand'? Generally the answer is 'no' and, in my estimation, keeping such equipment separate from your existing apiaries for at least 12 months makes a lot of sense. Most agree that this is a wise move and as such do practise a type of barrier system.

But I have come across beekeepers who have immediately incorporated beehive boxes etc. into their existing apiaries without any withholding period and others who clearly have not inspected brood nests for at least one to two years. This is a recipe for a disaster and in both cases it was not pretty. Maybe an industry code would have helped these guys focus on what I regard as basic beekeeping common sense.

Much of the rest of the industry code is already law and has been in one form or another for decades. Take registration of beehives, for example. Many states already have a beekeeping registration system. Unfortunately the ACT does not, but as a result of the 'code' there is a lot of pressure on the ACT government to implement one.

In NSW, beekeeper registration has been compulsory for decades, whether you own one hive or 1,000. The system was recently changed to three categories – business, recreational and pensioner/senior. The business registration fee is \$100, or \$90 on-line; recreational is \$60, or \$54 on-line and pensioners \$40, or \$36 on-line. If you are a pensioner or have a senior card and carry out a beekeeping business you are required to register as a business.

For interstate movement of beehives (e.g. going to almonds in Victoria) you are required to obtain a health certificate from a NSW Inspector. If a Queensland based beekeeper moves hives into NSW they do not need to be registered in NSW if their beehives are in NSW for less than three months in any 12 month period.

Forms for health certificates, change of details of registration, notice of disposal of beehives, vendor declarations, reporting abandoned and neglected hive material and reporting nuisance bees can be downloaded from the NSW DPI website – www.dpi. nsw.gov.au/agriculture/livestock/honey-bees

In NSW you are required to brand or identify all your brood boxes with your beekeeping registration number. If you are commercial and placing your beehives on government land tenure sites or remote private property sites, it is a no-brainer to brand your beehives. Many beekeepers fire brand every component of their beehives to deter theft and to facilitate recovery of stolen material. In my mind this is a must do exercise, even if it wasn't legally required. Note: you should strike out previous brands on beehive material, but they must remain legible.

Keeping records of hive movements is also useful to the beekeeper. The code suggests three years' worth of records should be kept, whereas the NSW Apiaries Act indicates five years. Basic records including date hives were moved, location moved to and any hives lost/stolen/destroyed. This information need only be written in a diary to comply.

In NSW AFB has historically been a major focus of legislation and government activity. While the activities have changed AFB remains as a significant focus. Remember AFB is a fatal brood disease of honey bees. You are required to notify the presence of AFB to a NSW Inspector within 24 hours of becoming aware of the presence of the disease. The beekeeper must take all reasonable steps to prevent the spread of this disease. Restricting the robbing of honey and ensuring hives do not die out from the disease are two vital activities.

There is a vast range of information on AFB. Videos and printed information sheets can be found on the NSW DPI website www.dpi.nsw.gov.au/agriculture/livestock/honey-bees

Night parking with a load of beehives is an offence if the truck is parked within a residential area or within 200 metres of a street light.

While this article is of a general nature, it does not cover all aspects of the NSW Apiaries Act or other legislation covering beekeeping in NSW. It highlights some of the key points beekeepers should focus on. It is also important that you take the time to at least read and become familiar with your industry biosecurity code of practice.

In the event you are visited by a NSW DPI Apiary Inspector and you are not compliant with the relevant legislation, what can you expect? If the offence is minor or maybe a first offence, then you may receive a warning letter indicating the components of any legislation you failed to meet and possibly suggesting what you need to rectify. You may receive an order, either written or verbal, to make good a situation an inspector believes to be inadequate or has room for improvement. This will relate directly to a component of the relevant legislation.

If the offence is deemed significant you may be issued a penalty notice. These notices will indicate the offence(s) and the fine for each of these. Penalty notices start at \$150 and range to \$550, depending on the offence. A list of penalty notice offences can be viewed on the NSW DPI website. If there is a history of previous breaches of the Apiaries Act and other legislation, then a court attendance notice may be issued.

Remember, I have not been an Apiary Inspector since the early 1990s. Any regulatory enquiry should be first directed to Mick Rankmore, NSW DPI Regulatory Specialist Honey Bees (michael.rankmore@dpi.nsw.gov.au or phone: 02 6741 8374). Being ignorant of legislation is not a defense against being fined or receiving a warning letter.

(Acknowledgements: typed by Vicki Savile, edited by Annette Somerville)

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# THE FROST REPORT

Elizabeth Frost E. Frost Apicultural Services frost.elizabeth.a@gmail.com



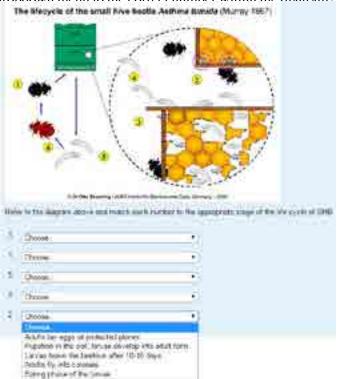
#### **EDUCATION IN AUSTRALIA AND VIETNAM**

To follow is an updated account of honey bee education I'm involved in through my current role as an independent contractor.

# PROGRESS REPORT AT HOME: PESTS & DISEASES ONLINE COURSE

The Pests and Diseases of Honey Bees Online Course offered by NSW DPI and Tocal College currently boasts enrollment of course participants from New South Wales, Victoria, and the Northern Territory. Participants' current colony numbers range from 0 colonies to 500 and their beekeeping experience ranges from 0 years to 30 years. Completed assessments are coming in slowly but surely as expected given the six month time frame participants are allowed to complete the course. The lengthy time frame is necessary considering the assessments that require participants to inspect a bee hive and take a larval smear sample. Many beekeepers wouldn't consider breaking open their hives mid-winter and I don't blame them! There's no point in disrupting the winter cluster when the participant has ample time to complete the hive inspection and larval smear assessments once temperatures warm up.

The following picture provides a stickybeak at an assessment task which asks the applicant to identify specific stages of the small hive beetle (SHB) lifecycle. Can you match the SHB life stage and activity listed in the drondown menu to the correct number within the diagram?



The seven assessment tasks included in this course involve short answer responses, multiple choice and matching on a variety of subjects, photography of the participant's hive inspection, and the preparation of a larval smear sample which the participant then ships to the NSW State Veterinary Diagnostic Laboratory for confirmation of correct sampling technique. The assessments are titled:

- ASSESSMENT TASK 1: Hive Inspection
- ASSESSMENT TASK 2: Disease Identification
- ASSESSMENT TASK 3: American Foulbrood (AFB) Disease
- ASSESSMENT TASK 4: Pests and Diseases
- ASSESSMENT TASK 5: Small Hive Beetle
- ASSESSMENT TASK 6: SHB Management Options
- ASSESSMENT TASK 7: Prepare a Larval Smear

It should be noted that the NSW State Veterinary Diagnostic Lab, involved in Assessment Task 7 above, provides a free honey bee disease diagnosis service for NSW registered beekeepers. The diagnostic service is free to online course participants regardless of their state or territory, however, any future samples should be sent to the registered beekeeper's state or territory diagnostic lab. Registered NSW beekeepers may take advantage of this helpful service by following the sampling and shipping guidelines in Doug Somerville's report on the subject: http://www.dpi.nsw.gov.au/\_\_data/assets/pdf\_file/0008/117089/samples-for-bee-disease-diagnosis.pdf

For more information on the course contact one of Tocal College's education advisors by phone: 1800 025 520 or email: profarm@tocal.com. Online registration is available at: www.dpi.nsw.gov.au/agriculture/profarm/courses/bees-pests-and-diseases-of-honey-bees-online

# PROGRESS REPORT ABROAD: VIETNAM NATIONAL UNIVERSITY OF AGRICULTURE

At the end of my temporary employment with NSW DPI as a Honey Bee Development Officer I had the opportunity to work with the Research Center for Tropical Bees and Beekeeping (RCTBB) at Vietnam National University of Agriculture (VNUA). Dr. Pham Hong Thai, director of the Research Centre for Tropical Bees and Beekeeping at VNUA, and Katrina Klett, University of Minnesota student and Fulbright Scholar, facilitated this collaboration which allowed me to provide three training courses in artificial insemination of queen bees. Dr. Pham Hong Thai proved an excellent host with his conscientious lab set-up about 30 paces from the queen yard, just a short walk to queen banks and drone source colonies. Course participants included Ms. Klett, RCTBB technicians Phan Thanh Ngoc and Nguyễn Thành Duy and commercial beekeepers Nguyễn Đăng Thơ and Đỗ Xuân Đoàn.



**FIGURE 1:** Fulbright Scholar Katrina Klett and Dr. Pham Hong Thai deliberate in the research apiary.

I started each training course, held over 2-3 days, with a presentation in the morning on why insemination of queen bees is an important tool for complete control over mating and selective breeding efforts, what equipment and apiary management is necessary for successful preparation of drones and virgin queens and introduction of inseminated queens, and examples of closed breeding population programs. Ms. Klett also gave an insightful presentation outlining the management practices of her family's migratory queen breeding business which operates in Texas in the spring and sells queen cells to Texas beekeepers. The practical component of each course involved equipment hygiene and set-up, saline solution mixing, drone eversion, semen collection, and queen insemination. Since teaching these courses for 9 days in March 2015, Ms. Klett and RCTBB technician Nguyễn Thành Duy have continued honing their queen bee artificial insemination technique and Dr. Pham Hong Thai has gained more than 100 additional hives to increase the breeding pool available at VNUA.

Stay tuned to the Frost Report for more information on my recent artificial insemination and queen work with California queen breeders, Development Alternatives Incorporated and USAgency for International Development in Lebanon and further online education brought to you by Tocal College.



FIGURE 2: Class picture (Left to right): Nguyễn Đăng Thơ, Elizabeth Frost, Katrina Klett, Đỗ Xuân Đoàn, Phan Thanh Ngoc. Missing from the picture is course participant and RCTBB beekeeper and VNUA student Nguyễn Thành Duy who was moving hives to Longan for honey production.

# SA HOBBY BEEKEEPERS BEEING PROACTIVE

MEDIA RELEASE - 7 September 2015

One of the biggest risks when an exotic pest reaches Australia is that no-one notices, allowing it to spread and making it harder to eradicate once it is detected.

In Adelaide, hobby beekeepers are joining forces with government and industry to take a frontline role in surveillance to keep the honey and pollination industry safe and protect our food production.

They're becoming an integral part of the National Bee Pest Surveillance Program (NBPSP), boosting the effectiveness of efforts to detect bee pests such as Varroa mite far beyond what could be achieved through government funding alone.

NBPSP facilitator Sam Malfroy, of Plant Health Australia (PHA), says it's an essential partnership.

"We know that ports present a significant risk of being an entry point for bee pests and pest bees, but we simply don't have the resources to have government apiary officers at every port conducting surveillance 24/7; and there are many other potential entry points as well," Mr Malfroy said.

"By working with hobby (and professional) beekeepers we can cover a lot more ground, and ensure that many more hives are regularly checked for signs of unwanted visitors.

"Varroa has the potential to wipe out a significant proportion of both managed bee colonies and feral European honey bees which provide free pollination services to agriculture and horticulture, so it's a key focus for our volunteers."

Trials were successfully carried out in Melbourne and Geelong, where beekeepers are still providing assistance, and South Australia is the first state to sign up as the system is rolled out around the country.

The Adelaide Bee Sanctuary is amongst those involved, with convenor Sandra Ullrich and ambassador, chef Simon Bryant, recognising the importance of bees to the community and food production.

"We now have three hives as part of the surveillance program, after going through the training sessions on how to check for Varroa and other pests," Ms Ullrich said.

"We conduct surveillance on our hives at frequent intervals every couple of months - and then send the information to the Department of Primary Industries about what we find.

"I've heard that Varroa was in New Zealand for years before it was first discovered, which made it too late for industry and government to try and eradicate the pest. I'd hate for that to happen here as we all need to understand the value of bees in both urban and rural communities, and protect them wherever we can."

Mr Malfroy said biosecurity is everyone's responsibility – government, agricultural industries and the community. This program is a perfect example of a partnership approach amongst all sectors to keep exotic pests, such as Varroa, out of Australia.

For details on the National Bee Pest Surveillance Program, visit nbpsp.planthealthaustralia.com.au

Media contact: Kaaren Latham 02 8204 3852

# RESEARCH PROJECT

# MEDICINAL AUSTRALIAN LEPTOSPERMUM (JELLY BUSH) HONEY

The University of Technology Sydney is leading a research project looking for more sources of medicinal Australian *Leptospermum* honey (aka jelly bush, or Australian manuka). The research team includes Dr Peter Brooks and Simon Williams (University of Sunshine Coast), Professor Dee Carter (University of Sydney), as well Dr Shona Blair, Professor Liz Harry and Nural Cokcetin (University of Technology Sydney). The project is being funded by RIRDC, with support from Capilano and Comvita, and will run over the next three years (until 2018).

We are asking beekeepers with access to *Leptospermum* (jelly bush / manuka) honeys from anywhere in the country to provide samples to include in this research project. We will test these honeys for antimicrobial activity and investigate the relationship between the activity and the plant source.

#### Providing honey samples for testing

If you have access to *Leptospermum* honeys and would like to include them in our survey, please get in touch with us. We'll be asking for 200 - 500 g, and some information about the location it was collected, as well as samples from the plants the bees visited to produce the honey. We will provide a sample information sheet containing clear instructions, an address to send your samples to and other important information for our study.

We will keep the results confidential, but we will provide anyone supplying samples with a report on the results from the testing of their honeys.

#### If you would like to provide samples, please contact:

Nural Cokcetin | Project Coordinator | 0405 284 718 | Nural Cokcetin@uts.edu.au

**Prof Liz Harry** | Principle Investigator | 0404 643 181 or 02 9810 6461 | Elizabeth. Harry@uts.edu.au

# FIELDWORK TO IDENTIFY LEPTOSPERMUM SPECIES AND COLLECT NECTAR SAMPLES

Simon Williams, PhD student under Dr Peter Brooks at the University of Sunshine Coast is beginning to plan the fieldwork phase of the project. Simon will be traveling and meeting beekeepers to aid in identification of *Leptospermum* species and collecting nectar samples from trees to determine the potential non peroxide activity (NPA) of the various *Leptospermum* species.

Simon is planning to visit NSW from November onwards. The time period will be dependent on weather, flowering of *Leptospermum* and the availability and feedback from beekeepers. If you would like Simon to visit your sites to identify and sample trees, please contact Simon with the information below.

**Simon Williams** | PhD student| 0459 336 779 | Simon. Williams@research.usc.edu.au

- The sites you would like us to test and their rough location
- If you would be happy for an aerial map to be taken of your sites for determining species distribution
- If known, the suspected *Leptospermum* species at the site

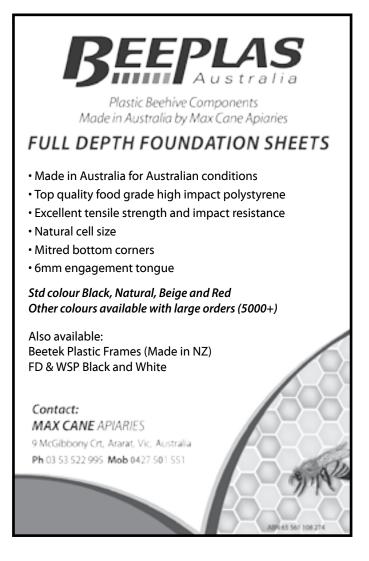
- An approximate flowering period if known, so we know when to plan to visit
- If you are able to provide any logistical help in terms of accommodation and transport
- Any restrictions on your time, e.g. if you're only free to show sites on the weekends.

#### Why are we doing this?

Manuka (*Leptospermum scoparium*) honey from NZ is world famous, and it is sold at a much higher price than other honeys. However, although Australia is home to the largest diversity of *Leptospermum* plants in the world (we have more than 80 species compared to NZ's two!), most of our honeys do not enjoy the high prices of their NZ equivalents.

We already know that a handful of Australian *Leptospermum* honeys have similar levels of antibacterial activity to NZ manuka, but most of the other 80 plus Australian varieties have not been tested. We want to find more sources of active honey, which will help the Australian beekeeping industry by increasing the amount and value of medicinal Australian honey being produced.

The feedback we have received from the beekeepers so far has been great we thank you all for your support.





At Ausure Insurance Brokers Goulburn we understand the issues that Apiarists face in their day to day business.

We are able to offer covers that protect your business including Australia Wide theft and vandalism cover for your hives including honey and bees along with all other insurances including property, business interruption, liability, transit and motor vehicles.

As an exclusive offer to NSW Apiarists' Association members we can offer a 5% discount on all policies.

Please call Leigh Layden on 02 4822 1320 leigh.layden@ausure.com.au

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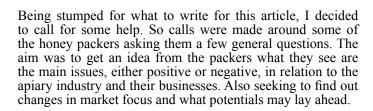


# NICK'S NEWS

Nick Annand, Livestock Officer (Bees), NSW Department of Primary Industries, Bathurst

Ph: 02 6332 8034

Email: nicholas.annand@dpi.nsw.gov.au



Six honey packers where contacted and spoken to. All having differing markets and marketing strategies. A range of thoughts on their industry where expressed with some common to many, while others were not. I will to endeavour to express what was said and I request forgiveness from the packers if my writing does not clearly represent the intent of what they had said. These are the ideas from many so they may or may not always align.

#### What are seen as positives to the industry?

- Most packers talked of the clean green image of honey and the fact that consumers see it as a natural healthy product. This has particularly come to the fore in the past 5 years as concerns with diet increase. The fact that Australian honey has very little chemical contamination is recognised worldwide and has resulted in Australian honey being held in high regard.
- Demand for Australian honey on the domestic market is strong.
- The fact that honey has come from Australia is used in branding as a selling point both here and overseas.
- China cannot get enough Australian honey with it currently being a trend food with great demand.
- Honey prices are significantly higher than a couple of years ago. There is also a push to have more stable pricing providing beekeepers with more stability and consistency allowing for better business management.
- Even with the higher prices honey sales remain good and the demand for Australian honey is currently greater than the supply.
- The fact that the majority of Australian honey is derived from eucalypts is considered a strength. Some species specific honeys are in high demand on the export markets.
- Export opportunities for Australian honey are large but current volume and reliability of honey supply makes entering these markets difficult to achieve as a regular supplier.
- Paradichlorobenzene (PDBs) contamination appears to be a thing of the past.
- Some packers spoke of the need and value of honest and trusting relationships with their suppliers. These good business relationships enabled reassurance of the quality of product being purchased and could help reduce the need for extensive testing thereby creating savings. The main concern is the use of the antibiotic Oxytetracycline (OTC).
- Honey has outperformed other spreads in regards to maintaining or expanding market share.

#### What are seen as negatives to the industry?

 The main concern raised by the packers was the reliability and consistency of supply which they say has decline over recent times. None seem to hold large stock



piles currently and they are apprehensive and nervous about the upcoming season. The inconsistent supply has made it difficult for packers to supply and maintain both domestic and export markets. Making business expansion very difficult.

- The significant decline in Patterson's curse in recent years, which once was one of Australia's most reliable honey sources and bee building resources, has probably been a major factor in the above point.
- Access to some markets is difficult as a result of the requirements that are placed on the honey. This includes many of the European countries including Germany who is a major honey importer. They have limits on genetically modified pollen (GMs) and pyrrolizidine alkaloids (PAs) content which can inadvertently enter honeys. Testing for these is required for each shipment and is expensive leaving the packer potentially with honey that may be rejected and the costs of testing. This is a price the majority of packers are not prepared to take but it does restrict our potential export markets.
- Similarly other export market countries have low Maximum Residue Levels (MRL's) for antibiotic residues. This is considered the main risk when exporting. So if there is any risk of contamination packers put that honey onto the domestic market as the cost and risk of having a shipment rejected is too great.
- Heavy metal contamination particularly zinc from old galvanised drums etc. is something most packers are not prepared to accept honey in anymore. This honey will not enter the export market because of the risk of rejection. Australia does not have an MRL for zinc in honey but this may well change soon as we catch up with other countries, (these two points make it sound like we supply our domestic market with our left overs. It would be interesting if we placed tighter MRL's on antibiotics, which could always be on the cards as people concerns with diet increase)
- The higher retail prices have reduced the domestic demand a little. The retail price has absorbed some of the wholesale price rises but this may soon be adjusted and translated to higher prices in the shop which may cause further reduction in demand.
- This market pressure does open the door for cheaper imports to enter and fill the void of low priced honeys.
- There is concern of the quality of imported honeys into Australia, i.e. are they honey and what residues do they contain. The Australian Honey Standard is very light on compared to other countries allowing for a wide quality range of honey from good too bad to enter.
- Honey adulteration is becoming a major concern worldwide with it being one of two major issues raised at Apimondia 2015 (the other being bee health). This is a negative to the industry but there is quite a bit of work being done to finger print honey to verify authenticity which may help in identifying artificial honeys or honey that have been extended and sold under inaccurate labelling.
- Supermarkets continue to compete to have the lowest price which places a lot of pressure on the packers margins attempting to secure contracts to supply them. With fluctuating seasons and varying honey prices calculating and supplying for long term contracts can be difficult.

- There is always a lot of money outlaid in stock, and with declining supply meeting deadlines can be difficult.
- Some contracts require all honeys used to be residue tested. This means it is only viable for the packers to purchase from larger suppliers.
- Certification of packing plants can be a major expense.
- Accessing some markets is extremely difficult with many hurdles to jump. China is a good example of this with many packers deciding it is too difficult to access. There are ways that help facilitate access but are considered as nonstandard business practises here (ie. Some expect money to help the process work). If you sort these hurdles the opportunities are great.
- There is concern that a lot of Australian honey gets exported in bulk, but how is that product then sold to the consumers. Is some of that honey being extended with either honey from elsewhere or artificial honeys but still being sold under the premise of Australian honey?
- All packers said they currently do not have much honey in stock.
- Aging and declining number of skilled knowledgeable beekeepers. As told 'there is a lot of snow on the peaks' in the beekeeping industry.

#### What are possible future trends and possibilities?

- There was not much optimism for the honey crop for the upcoming season with yields of average at best being predicted
- While Australian honey prices remain good this will leave the door open for continued importing to fill this void with cheaper imported honey.
- Demand from overseas for cut comb is high with a large gap still between supply and demand.
- World honey prices have declined by about a third in the
  past few months and looks like continuing to fall with
  Argentina still holding a lot of honey from last season.
  This suggests the local honey price is probably more
  likely to fall or remain flat in the near future than rise.
- Demand for Australian honey is strong from the domestic market for your basics like upside packs, jars etc. which is the backbone for the industry.
- Honey prices to remain steady and consistent into the future
- Access to markets through small internet sales may be an alternate for places like China that are notoriously difficult to supply in bulk to.
- Blends are easier to supply than species specific honeys with inconsistent honey supplies and so might make up more of the export demand as it is easier to provide consistent supply.

Well there are a range of views and opinions expressed above but I hope you can get a bit of a feel of how the packers see the position of the beekeeping industry which they are a part of.

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# SA HOBBY BEEKEEPERS BEEING PROACTIVE

MEDIA RELEASE - 7 September 2015

One of the biggest risks when an exotic pest reaches Australia is that no-one notices, allowing it to spread and making it harder to eradicate once it is detected.

In Adelaide, hobby beekeepers are joining forces with government and industry to take a frontline role in surveillance to keep the honey and pollination industry safe and protect our food production.

They're becoming an integral part of the National Bee Pest Surveillance Program (NBPSP), boosting the effectiveness of efforts to detect bee pests such as Varroa mite far beyond what could be achieved through government funding alone.

NBPSP facilitator Sam Malfroy, of Plant Health Australia (PHA), says it's an essential partnership.

"We know that ports present a significant risk of being an entry point for bee pests and pest bees, but we simply don't have the resources to have government apiary officers at every port conducting surveillance 24/7; and there are many other potential entry points as well," Mr Malfroy said.

"By working with hobby (and professional) beekeepers we can cover a lot more ground, and ensure that many more hives are regularly checked for signs of unwanted visitors.

"Varroa has the potential to wipe out a significant proportion of both managed bee colonies and feral European honey bees which provide free pollination services to agriculture and horticulture, so it's a key focus for our volunteers."

Trials were successfully carried out in Melbourne and Geelong, where beekeepers are still providing assistance, and South Australia is the first state to sign up as the system is rolled out around the country.

The Adelaide Bee Sanctuary is amongst those involved, with convenor Sandra Ullrich and ambassador, chef Simon Bryant, recognising the importance of bees to the community and food production.

"We now have three hives as part of the surveillance program, after going through the training sessions on how to check for Varroa and other pests," Ms Ullrich said.

"We conduct surveillance on our hives at frequent intervals every couple of months - and then send the information to the Department of Primary Industries about what we find.

"I've heard that Varroa was in New Zealand for years before it was first discovered, which made it too late for industry and government to try and eradicate the pest. I'd hate for that to happen here as we all need to understand the value of bees in both urban and rural communities, and protect them wherever we can."

Mr Malfroy said biosecurity is everyone's responsibility – government, agricultural industries and the community. This program is a perfect example of a partnership approach amongst all sectors to keep exotic pests, such as Varroa, out of Australia.

For details on the National Bee Pest Surveillance Program, visit nbpsp.planthealthaustralia.com.au

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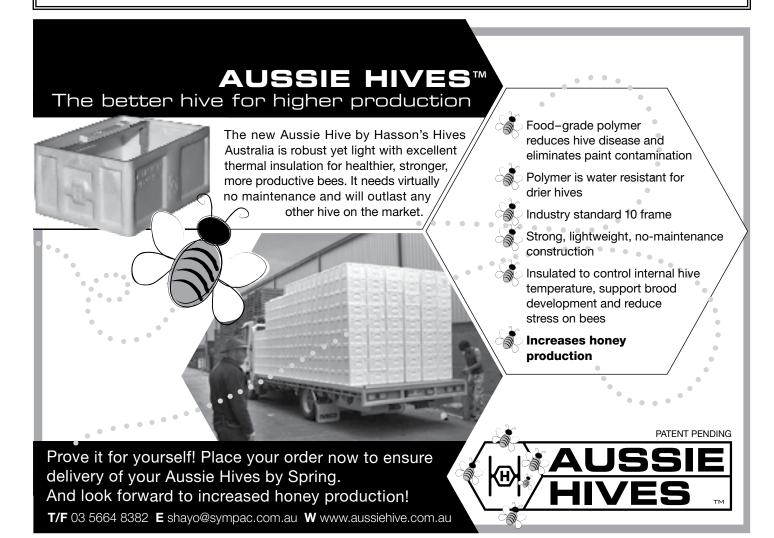


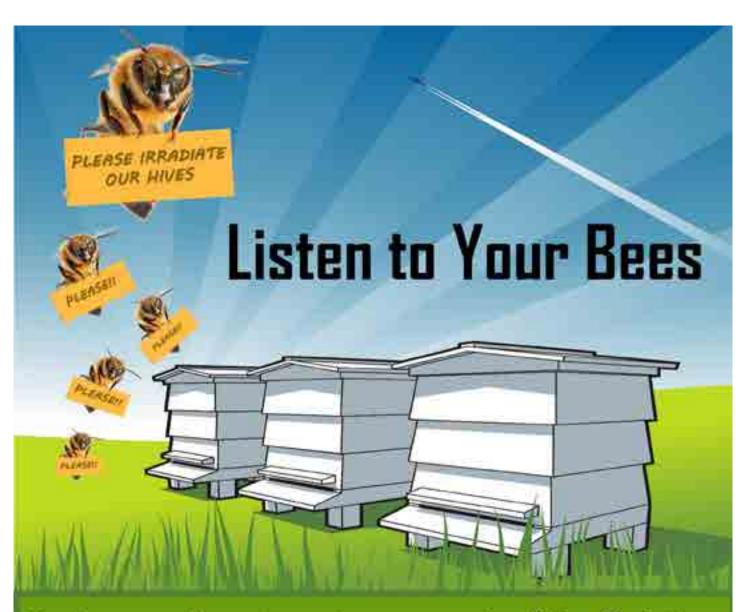
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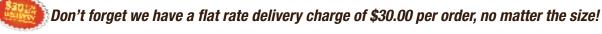






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# A TRIBUTE TO ELAINE ROGERS

Royal Agricultural Society (RAS)

Bruce White OAM Honey Judge & Honeyland Coordinator

Elaine Rogers has been the main contact for beekeepers wishing to exhibit honey and beeswax in the competitive section at the Sydney Royal Easter Show for the last 7 years. As well she has been involved in Wine, Dairy and Fine Foods, a very challenging job dealing with so many primary producers in New South Wales and other states.

Elaine has been a major driving force, well supported by the Royal Agriculture Society (RAS) councillors she has worked with over the years, to oversee and increase entries and new classes to Apiculture. This has resulted in the Sydney RAS hosting the National Honey Show.

In recent times Elaine has provided the editor of *Australia's Honeybee News* with articles and photos of the competitive classes at the National Honey Show.

Elaine organised two honey judging tutorials to help train future judges with one of the aims to provide judges in the Apiculture classes at country shows. So important to the promotion of honey.

Elaine was keen to keep Agriculture a major theme of the show so was instrumental in organising live bee demonstrations. As a result the Sydney Branch NSWAA built a Beezeebo that is now promoted as one of the show's attractions. She was also keen to have a bee beard, so the brave President of the Association at the time, Craig Klingner, did a sterling job assisted by Brian Woolfe. The Royal visitors to the Sydney RAS the Duke and Duchess of Cambridge in 2014 also stopped by the Beezeebo.

One of Elaine's major strengths was she that was always available to provide assistance, and I have on many occasions spoken to her after hours regarding the Honey Exhibits and the *Honeyland* Stand.

Elaine was extremely reliable at contacting exhibitors and solving problems. A good example was when the current Association President Neil Bingley asked me to find out the insurance liability when an out of control electric motor scooter ran into the Beezeebo and *Honeyland* at the last Easter Show. I contacted Elaine and the answer came back the same day.

Elaine was so well known for her love of bees at the RAS that when a thirsty swarm of bees set up a hive in the centre of a pallet of Crown Lager in the RAS loading dock the first thought was to kill them, someone quickly told Elaine and with her contacts she soon saved them from the Pest Destroyer.

It is to Elaine's credit the National Honey Show has run so smoothly as I know from experience every year new problems arose that Elaine has had to solve efficiently and quickly without getting flustered.

Elaine now has a new challenge as RAS Coordinator, Agricultural Competitions and Events. We wish her well in her new position.

Elaine's position at the RAS has been taken over by Fiona Masters who has a rural background and is looking forward to working with the beekeeping industry as the Coordinator, Wine, Dairy and Fine Food. Contact details: Phone: 02 9704 1199 Email: fmasters@rasnsw.com.au

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# SICK BEES

# Colony Collapse Revisited PART 18F2 SYNTHETIC PESTICIDES

by Randy Oliver - ScientificBeekeeping.com



OK, I hope that since explaining that bees have always had to deal with natural plant toxins, and more recently, with human pollution, that I can finally move on to attempting to answer the original question, "To what extent are manmade pesticides related to colony morbidity, mortality, or sudden collapse?"

#### **Synthetic Pesticides**

Not being a toxicologist, I had always assumed that synthetic pesticides were chemically and biologically in a different class than the natural allelochemicals found in nature. How wrong I was!

Synthetic insecticides are essentially nothing more than chemically "tweaked" forms of natural substances, generally modified to make them cheaper, more effective, more or less stable, less toxic to humans, more targeted toward specific pests, and recently, more environmentally friendly. For a good summary of this subject, read John Tierney's "Synthetic v. Natural Pesticides" [¹].

#### **Preadaptation**

There is nothing new about honey bee exposure to pesticides—bees had by necessity been forced to develop detoxification mechanisms for these classes of chemicals long before humans invented modern pesticides! Prior to that (and still today), bees were exposed to naturally-occurring organochlorides from many natural sources [²], organophosphates produced by cyanobacteria in surface waters [³], carbamates as a natural fermentation byproduct of beebread [⁴], nicotine (as in neonicotinoids) in a number of plant species [⁵], pyrethrins (derived from chrysanthemums) [⁶], insect growth regulators (self-produced hormones), and a host of alkaloids and other toxins in pollen and nectar.

A term used by toxicologists is *preadaptation*. Honey bees are, by necessity, preadapted to deal with the major classes of synthetic pesticides; the toxicology and metabolism of synthetic insecticides is no different than that for natural toxins (although the synthetics may have a greater degree of toxicity). And despite the widely-cited paucity of detoxification genes in the honey bee genome, Hardstone [7] determined that compared to insects in general, honey bees are not particularly sensitive to insecticides overall, nor even to specific classes of insecticides!

If it hasn't already occurred to you, think on this: there are any number of nectar/honeydew sources that bees concentrate into honey that may be acutely toxic to humans (rhododendron, mountain laurel, tutu, etc.), yet does not appear to affect the bees to any great extent. The toxins of those named plants (grayanotoxin and tutin) are poisonous to insects, yet bees are able to detoxify them better than humans can!

Cresswell [8] notes that some bees may be better preadapted to toxins than others. Remember that I mentioned earlier that tropical nectars tend to contain more alkaloids? Well, honey bees evolved in the tropics, and are apparently well preadapted to metabolize alkaloids, whereas bumblebees evolved in temperate regions in which there were fewer natural alkaloids in the nectars. It's possible that honeybees may be better preadapted to detoxify alkaloids (such as neonicotinoids) than are bumblebees.

Have you noticed yet that this is a complex subject? And that is one reason why I feel that the single-minded focus by some folk on any one particular class of insecticides may be misguided. Lest I sound critical of my fellow environmentalists, I suspect that many remain under the misassumption that *all* pesticides bioaccumulate or biomagnify as do the "Persistent Organic Pollutants" (DDT, chlordane, PCB's, etc) and heavy metals (mercury, lead). Gold [9] explains:

DDT is unusual with respect to bioconcentration, and because of its chlorine substituents it takes longer to degrade in nature than most chemicals; however, these are properties of relatively few synthetic chemicals. In addition, many thousands of chlorinated chemicals are produced in nature... Natural pesticides can also bioconcentrate if they are fat soluble. Potatoes, for example, naturally contain the fat-soluble neurotoxins solanine and chaconine, which can be detected in the bloodstream of all potato eaters.

Oh no—not only do French fries contain toxic acrylamide, but also additional neurotoxins that bioaccumulate in my body fat!

Reality check: our diet, as well as that of the bees, is chock full of natural plant toxins (many of which have been only recently been introduced into the human diet). The bee immune\* system does not differentiate between natural toxins, environmental pollutants, or synthetic pesticides. They must all be taken into consideration when we discuss "chemicals" and bees. Rather than focusing on this pesticide or that, what we beekeepers should be assessing is the total toxin load to which colonies in any particular setting are exposed.

Update 4/27/2013: It's been pointed out to me that I've used the term "immune" too loosely. I should have used the term "detoxification."

#### **Interactions Between Synthetic and Natural Toxins**

Bees in agricultural landscapes, as well as in urban and suburban areas, are exposed to a wide variety of manmade toxicants above the background level of natural toxins. Surprisingly, previous exposure to plant allelochemicals may help them to deal with manmade toxicants!

Després [10] found that eating certain natural toxins in a plant may then make an insect more resistant to certain synthetic pesticides. Armyworms fed cowpeas became more tolerant to organophosphates. And those fed xanthotoxin from corn displayed higher tolerance to a pyrethroid insecticide—and appeared to be able to pass that immunity on to their offspring! Don't you just love this stuff!

Biological note: we've barely investigated to what degree the exposure of the previous generation of bees to alleleochemicals or pesticides results in trans-generational epigenetic effects.

On the other hand, Després also found that:

By contrast, exposure to particular plant chemicals can repress the expression of detoxification enzymes involved in insecticide resistance...Finally, it cannot be excluded that an enzyme conferring resistance to a phytotoxin can enhance the toxicity of an insecticide and vice versa. The striking complexity of the repression—induction patterns and substrate specificities of detoxification enzymes has so far represented a major difficulty in the understanding of cross-resistance mechanisms.

"Striking complexity"—well put! Even the type of honey that bees are eating enters into the picture. A study by Mao [11] found that allelochemicals in honey may affect their ability to metabolize pesticides. The researchers also speculate that the practice of wintering bees on sugar syrup may compromise their ability to process environmental toxins!

I hope you are starting to understand why I couldn't just jump into answering the question as to whether pesticides cause CCD! There are a great many contributory variables when we start looking at toxicity, and we just don't yet know that much about a lot of them! But there is one thing that we do know—that there was a major change in honey bee exposure to toxicants starting (in this country) in the 1990's.

#### **Toxicological Eras in Honey Bee Evolution**

Let's imagine what honey bee exposure to toxins would look like from an evolutionary perspective (Table 1):

Pre agriculture era	Early agricultural era	Botanical extract era	Synthetic pesticide discovery era	Environmental consciousness era	Early varroa era	The future/ agroecological era
← 8000 B.C. (-50 million yrs)	8000 B.C1700 A.D. (~10,000 yrs)	1700-1940 (~200 yrs)	1940–1970 (~30 yrs)	1970–1990 (~20 yrs)	1990-present (~20 yrs)	future→
Honey bees, due to their foraging on a wide range of plant species, were exposed to a broad diversity of natural phytochemicals in nectar, pollen, and propolis. They evolved detoxification mechanisms to deal with them.	Farmers used crude inorganic pesticides such as sulfur, arsenic, fluoride, and copper (which often resulted in the poisoning of the soil, applicators, and consumers). These pesticides were a disaster to bees.	Farmers started to use tobacco extracts in the late 1600's, nicotine sulfate (1910), and then pyrethrum and rotenone (1800's).	The discovery of the insecticidal properties of the organochlorine DDT in 1939 led to its widespread use during WWII to control mosquitoes and lice, and later to agriculture. Organophosphates quickly followed, having their heyday in the 1950's. Pesticide use soared, and every sort of residue made it into bee hives.	Silent Spring was published in 1962 and kick started the environmental movement. The organochlorines fell out of favor, but were replaced by even more beetoxic organophosphates and carbamates. Finally, things started looking better for bees as EPA started cleaning up our pesticide insult to the environment.	For the first time, beekeepers began to deliberately infroduce pesticides into bee hives. The miticides fluvalinate, coumaphos, fenpyroximate, and 2,4-DMPF (from amitraz) soon contaminated beeswax in most apiaries. This was a huge step backward for the poor bees.	Agriculture is moving toward reduced risk pesticides, "biologicals," selective breeding, and integrated pest management. Nature will eventually force us to return to crop rotation. This will be a big win for the beest

Table 1. Note that honey bees had tens of millions of years to evolve detoxification mechanisms for plant allelochemicals and other natural toxins. They've had only an evolutionary eyeblink of about 70 years of dealing with added synthetic pesticides. But the biggest change has been in the past 20 years, as beekeepers inadvertently contaminated beeswax combs with miticide residues in their attempts to control parasitic mites.

#### The "Varroa Era"

After 50 million years of evolving effective detoxification mechanisms against natural chemicals, mankind has only recently (on the evolutionary scale) challenged the bee with additional doses of synthetic toxicants. But those exposures were normally inadvertent and only intermittent, allowing the colonies to recover.

The invasion of the parasitic mites ushered in a new era of toxicant exposure [12]. Beekeepers were largely unaware that the synthetic miticides that appeared to be their salvation would wind up contaminating their combs with unimaginably persistent residues. I've seen the analyses of many beekeepers' combs. The miticide residues reflect a history of any product that they'd put into their hives in the past decade!

And although there is a great hue and cry about the neonicotinoids of late, Frazier [13] (a must read) points out:

Indeed, if a relative hazard to honey bees is calculated as the product of mean residue times frequency detected divided by the  $LD_{50}$  the hazard due to pyrethroid residues is three-times greater than that of neonicotinoids detected in pollen samples.

The main pyrethroid in hives worldwide is tau-fluvalinate (Apistan, Mavrik), which accumulates in the combs, along with several other agricultural pyrethroids of additive toxicity. To make matters worse, the other common miticide residue, coumaphos (Checkmite+), then exhibits synergistic toxicity with those pyrethroids [14]. Surprisingly, both of these miticides are still sold in bee supply catalogs!

I've written at length about the synthetic miticides [15]. It's hard to find combs today that aren't contaminated with fluvalinate and coumaphos. Could this be a problem?

There was a significant reduction in adult bee longevity following exposure to 100 ppb of coumaphos in wax during the larval and pupal stages in worker honey bees. A 4-day reduction in summer bee lifespan was observed equaling 16 percent of the total lifespan of summer bees. Reduced adult longevity could impact honey production and or overwintering ability [ $^{16}$ ].

Their conclusion is an understatement! I've plugged a 10% reduction in worker longevity into my bee population model-the result is striking (Fig. 1)!

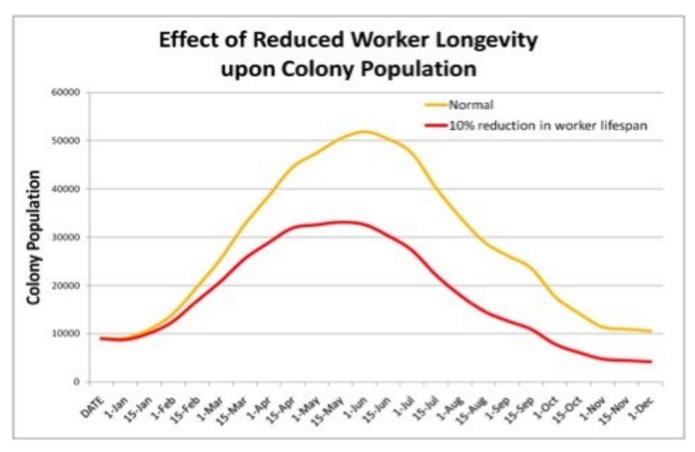


Figure 1. In this crude example, I reduced worker lifespan by 10% on the red plot, assuming a normal mean longevity in Feb-Oct of 35 days; and in Nov-Jan of 60 days. It is easy to see that even a slight reduction in worker longevity dramatically affects colony buildup and wintering ability!

Practical application: Miticide residues (or environmental pollutants) in the combs can affect both larval survival and worker longevity. It doesn't take much of a reduction in either to demonstrably affect colony buildup or winter survival! And this is before adding any agricultural pesticides!

Some miticide residues don't go away—they leach out of the wax and into the beebread for years! Add their negative impact on brood and adult bee survival to that of other environmental toxins and plant allelechemicals, and today's colonies may already be in toxicological trouble even before they are exposed to any additional pesticides.

Practical application: honey bees have suffered from a "triple whammy" due to the recent invasion of the parasitic mites:

- 1. The mites directly impact the health of bees by sucking their blood, and by suppressing their immune systems.
- 2. Varroa changed the entire virus dynamics in the bee population, especially by acting as a novel and effective vector of some viruses.
- 3. Bees in many operations now must deal with an elevated background exposure to the toxic beekeeper-applied miticides, 24/7, 365 days a year.
- 4. This background exposure may increase larval mortality, adult bee longevity, and bee immunological resistance to mites, viruses, and nosema [17].

Since the invention of fat-soluble synthetic insecticides, for the first time in their evolutionary history, bees must deal with constant exposure to toxins not only from outside, but also leaching back out of the combs! Johnson, et al [18] found:

Overall, pyrethroids and organophosphates dominated total wax and bee residues followed by fungicides, systemics, carbamates, and herbicides, whereas fungicides prevailed in pollen followed by organophosphates, systemics, pyrethroids, carbamates, and herbicides. Externally-derived, highly toxic pyrethroids were the most frequent and dominant class of insecticides samples... Beekeepers searching for the primary source of pesticides contaminating bee hives need only to look in a mirror.

Such constant exposure to these elevated levels of toxicants keeps the detoxification crew bailing all the time in order to keep the bee boat afloat! Boncristiani [19] suggests that:

Since honey bees are constantly exposed to different compounds in nature, the activation of detoxification pathways probably do not necessarily represent negative effect to the colony. However, overloading these detoxifying cascades by exposing bees to large quantities of pesticides, such as miticide application to colonies, potentially harms colonies by diminishing their ability to detoxify other natural or synthetic compounds.

Practical application: the key word here is "overload." Toxin overload can occur from a single pesticide or poisonous pollen, or can be the result of the sum of the additive effects and synergies from any number of plant allelochemicals, pollutants, and miticides.

Complicating things is that it's not just one mode of miticide toxicological action that the bees are forced to deal with—fluvalinate is a pyrethroid, coumaphos is an organophosphate, fenpyroximate is a pyrazole, amitraz is an amidine, and the essential oils have entirely different modes of action (Fig. 2).

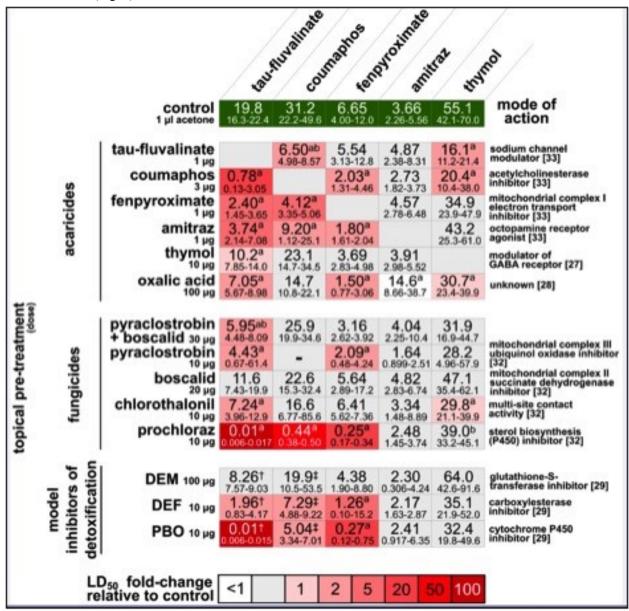


Figure 2. Synergism (amplification of toxicity beyond additive effects  $[^{20}]$ ) of common in-hive miticides with each other and with fungicides. From Johnson, et al (2013)  $[^{21}]$ .

#### Conclusion

Back to my leaky boat analogy, the colony has always been challenged by some baseline level of natural toxins, which require some degree of constant bailing. Since the Industrial Revolution, bees have also had to deal with manmade pollution. And in some localities and in some years, those toxins might prove to be too much to deal with, and sink the boat. This occurred long before the invention of synthetic pesticides, and will always be the case.

Once farmers started using insecticides (whether botanical or synthetic), they created "storms" of toxin exposure that would flood the boat, again sometimes overwhelming the hard-working detox/bailing crew [22].

Since the 1940's the crew has had to deal with the additional toxin/leaks due to the now ubiquitous synthetic insecticides. Each new residue constitutes one more leak in the boat. Not only that, but some classes of pesticides (including miticides and plant allelochemicals) may synergize, meaning that the leaks don't just add up, but suddenly start gushing dramatically!

And once beekeepers started pouring varroa treatments into their hives, an entirely new baseline of toxin/bailing became necessary. Every bee in the hive was now exposed from birth to death with background residues of miticides, sometimes at levels high enough to sterilize drones and kill developing queens.

Our original question was whether pesticides were responsible for CCD. I couldn't address that question immediately, since we first had to determine the background level of toxins to which colonies are exposed. Perhaps we can now can start to formulate an answer, from the perspective that today's honey bee colonies are first burdened with the need to first detoxify the vast array of toxic plant allelochemicals in their diet, as well as any environmental pollutants, plus the additional insult of the beekeeper-applied miticides—all

prior to their exposure to any additional agricultural pesticides! Only from that perspective can we realistically measure the impact of "pesticides." I'll continue next month...

#### Addendum: The Beekeepers' Responsibility

One of the sticking points in the beekeeper's arguments to the EPA against the misuse of agricultural pesticides is that the majority of commercial beekeepers are themselves guilty of exactly such illegal misapplication of pesticides themselves! This embarrassing fact is frequently brought up by both the EPA and state regulators, and severely weakens our legitimate arguments.

The problem stems from the fact that we have a regulatory system that makes it very expensive to bring legal mite treatments to market. The first major varroacide, Apistan, was much more expensive than MavrikÒ (the off-the-shelf agricultural formulation of the same active ingredient). Although many commercial beekeepers did the right thing and used the expensive strips, most became pesticide scofflaws, and used the illegal treatment to save a few dollars per hive. The same occurred with the next miticide, Checkmite+O, but in this case, a number of beekeepers inadvertently poisoned their hives by "off label" use of the cheaper agricultural product.

And then when mites (rapidly) became resistant to *that* treatment, the beekeeping industry essentially got "thrown to the wolves"—for a time there were simply <u>no</u> effective legal miticides available to commercial beekeepers, forcing them to break the law if they wanted to keep their bees alive! Most of them turned to homebrew treatments based upon various agricultural formulations of amitraz.

The EPA and state regulators generally recognized the fix that we were in, and turned a blind eye to the obvious packets and dabs of chemicals on the top bars, and to the "detects" of DMPF (the degradation residue from illegal amitraz use) in virtually every pesticide residue analysis of commercial combs. Eventually, EPA fired a warning shot across the bow of the beekeeping industry, setting a "zero tolerance level" for amitraz in honey, essentially threatening punitive enforcement action, but had the decency to not follow up.

The situation was resolved this March, when Arysta LifeScience was awarded conditional Section 3 registration of Apivar in the U.S. Such registration now sets a tolerance limit for amitraz in honey, giving commercial (and small-scale) beekeepers two options:

- 1. To do the right thing and use the registered product. Such support of the registrant will allow them to recoup the serious investment that it takes to get a needed product to our industry (the registration process for Apivar has already cost close to *a million dollars*, and will eventually be more than double that figure! (Even then, it's a gamble—for example, Hivastan lost), or
- 2. To continue to use cheaper off label homebrews, and then try to wriggle off the hook of potential enforcement action if amitraz residues are found in their honey by claiming that the residues came from the registered product (just in case you're not sure, this is patently dishonest).

Practical application: If we don't support the chemical companies when they invest serious money to bring a registered miticide to market (by "cheating" and using the same active ingredient of an agricultural product off label), they will simply abandon us as a market not worth serving in the future!

Keep in mind that Apivar is clearly a better way to use amitraz for mite control than homebrews of agricultural formulations, which contain adjuvants that are toxic to bees. I've spoken with Dr. Benoit Siefert of Véto-pharma about the fine points of amitraz and varroa. He explains that the most effective use of amitraz is to partially paralyze the mites, rather than to kill them outright. Such a sublethal effect prevents them from reproducing, which is why the strips must be left in for the full duration (42-56 days). The slow release of the small amount of amitraz keeps residues in the combs and honey to a minimum, and reduces the selective pressure for mites to develop resistance to the active ingredient.

# Practical application: Apivar is likely best applied at least two months *before* you put on honey supers, or the same day that you pull them off.

The flip side is that beekeepers NOW HAVE NO EXCUSE for using "off label" synthetic miticides in their hives. There are now (in addition to the unreliably effective Apistan) four other <u>legal</u> treatments for varroa—HopguardÒ, ApivarÒ, thymol (ApiguardÒ, Apilife VARÒ), and formic acid (MAQS). The latter three all are reliably efficacious at reducing mites to safe levels.

Unfortunately, as Johnson [23] points out:

The regulatory system governing the veterinary use of pesticides in bee hives in the USA may be perversely contributing to the problem. ... A change in the regulatory system needs to occur to make effective and safe veterinary pesticides available to beekeepers and to spur research into the effects of candidate compounds on honey bee health.

# Call to action: there is yet one more safe, natural, and effective miticide that needs to be registered—oxalic acid. I strongly feel that our industry should put pressure on the EPA to follow its registration in Canada.

The availability of a spectrum of legal treatments nowadays means that the only possible rationalization for not using registered miticides is that the illegal treatments are 'cheaper' than the legal treatments. If this is an argument for intentionally breaking the law, it simply doesn't hold water. Not surprisingly, it fails to sway the EPA, which, if it allowed all farmers to use the same argument, might as well throw its hands up in the air (what farmer wouldn't want to make his own rules and save money?)!

OK, it seems as though I have a predilection for saying the unpopular thing in public, but I'm going to stick my foot in it again! *The commercial beekeeping industry needs to start acting like responsible citizens.* So long as we keep blatantly using illegal mite treatments, our pleas to regulators to crack down on misuse of agricultural pesticides by farmers are gutted from the get go—if we want to talk the talk, we gotta walk the walk.

Johnson, et al, give us an appropriate scolding:

...beekeepers need to realize that honey bee pests and parasites are community problems, as well as individual problems, and that pesticide labels are crafted to protect the sustainability of pesticides. The use of unregistered products is a serious threat to the beekeeping community and should not occur.

(I am fully aware of the argument that we are not hurting anyone else with what we put into our hives, but that is a deplorably weak excuse when we are producing a food product! Honey's reputation as a pure and natural product stands to be tarnished by careless

beekeepers. I'm also aware that farmers have much more latitude in both choices of pest control products and in application methods. But I don't want to focus upon excuses—I want us to move forward. Since the off-label use of amitraz is rapidly leading to the development of resistant mites, now would be a good time to rethink the way we do things!)

Crying "Foul"

Commercial beekeepers reply with the argument that there is a lack of "affordable" registered miticides available to our industry. Somehow, I find that that argument falls flat, since I make my own living running a commercial beekeeping operation using only legal miticides (other than the aforementioned oxalic acid). I must compete for almond pollination and honey prices against those beekeepers who unfairly save money by using illegal treatments. That creates an un-level playing field, giving a competitive advantage to the lawbreakers. This is patently unfair, and I cry "foul"!

**Doing the Impossible** 

I often hear that it would be "impossible" to do without the illegal off-label treatments. The reality is that anything seems "impossible" until you just start doing it! Out of frustration, curiosity, and concern about the detrimental effects of residues, I tried managing my operation without synthetic miticides over a decade ago, and never felt the need to go back (I'd use amitraz in a heartbeat if I ever felt the need, but simply haven't). Since then we've tripled the size of our operation to around a thousand hives, take strong colonies to almonds each year, and have sold hundreds of nucs every spring-so much for "impossible"! I'm not suggesting that others give up on synthetics— amitraz is clearly an effective and safe varroacide—but just start using the new legal strips (or at least make the effort to get your local vet to write you a prescription for the off-label use of another amitraz product—this would at least make you "legal")! Our industry tells the EPA to make farmers do the right thing, even if it costs more, and then pass that cost on to the consumer. Our situation is no different.

CALL FOR ACTION: I call upon the leaders of our industry to set an example and do the right thing...once they do, our industry would no longer have anything to hide, and beekeepers could then start filing the adverse effects reports on pesticides that the EPA is begging for. And if we clean up our own act, we can then demand that farmers do the same!

Acknowledgments

As always, I'm indebted to Peter Borst for his assistance in research. And thanks to Jim and Maryann Frazier, Jerry Bromenshenk, Reed Johnson, Judy Wu, Marion Ellis, Roger Simonds, Diana Cox-Foster, Jennifer Berry, and others whom I'm sure I've neglected to mention, for their generosity in discussing these issues with me.

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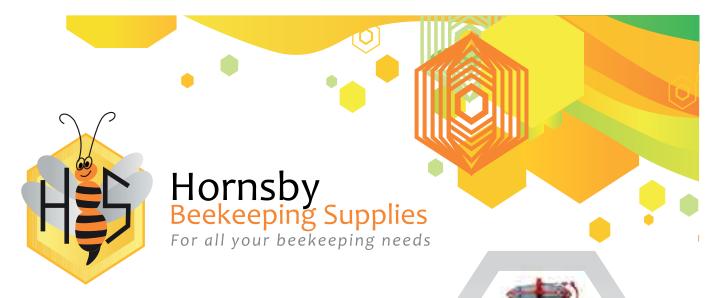
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These articles were originally published in the American Bee Journal. All of Randy's bee articles be found at: www.Scientificbeekeeping.com. If you find these articles of use. Randy appreciates donations to fund his efforts.



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### LETTER TO THE EDITOR

Dear Editor

Please find attached information and photos I have put together based on my recent beekeeping experience.





These photos are of the canola and dead bees which were in pupae stage which have been pulled from brood cells and have been thrown out. As you can see it is a beautiful crop of canola.

There are also Faba beans and Lupins on his farm that the bees were working.

While I was on the property taking off a load of honey, it was brought to my attention by the farmer that he would need to spray the canola crop for aphids. It was then that I asked the farmer what chemical he would be using to spray for aphids. He informed me that he would be using the chemical PIRIMOR a chemical that by label, if used correctly, is safe for honey bees. The chemicals label states that the chemical should be sprayed between dusk and dawn at a time when the bees are not out foraging amongst the canola.

Knowing this information I asked the farmer if the canola could be sprayed early in the morning or late in the afternoon when my bees would be less active. He said yes that would be ok. So I was shocked at MIDDAY when I saw the farmer spraying the canola crop with only a fence separating the sprayed crop and my load of bees. It was later, after I had spoken to the property owner that his son found me in the paddock and apologized for what had happened. The following day I noticed my bees had started to die. There were dead adult drones and young worker bees laying on the ground dying. This was due to the chemical being sprayed at the wrong time of the day. I made the decision to move my four loads of bees off the property, for fear of losing the entire load due to the spraying of this chemical.

As I am only able to move one load of bees at a time and also needing to find new properties to move them to, I returned the next day to start moving the last of the loads only to find the farmer again spraying the crop, this time at approximately 9.30am. I found this to be most frustrating as only the day before he had apologized for spraying the crop at the wrong time of the day, yet here he was again spraying mid-morning a clear defiance of what the label suggests.

I have been placing bees on this farm for 28 years coinciding with the farmer and his crop production without any issues. Until now. It has only been since the farmer's son has taken over the property that I have noticed an increase in the amount of chemicals they are using on their crops. In doing so they have killed off all the good predators that help control the aphids, such as lady beetles and hober flies. These predators use to be in abundance when his father was farming and using fewer chemicals.

I feel that the chemical companies and agronomists are working together and pushing the use of chemicals on farmers as the most effective form of insect control. I fear that if the farmers don't change their attitude towards chemicals, not only will the beekeepers continue to have problems but the farmers will also see an increase in chemical build up and a resistance to all pests in their crops.

Regards, *Mal Porter* 





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# The REVOLUTIONARY SOLUTION BLUEBEES Brood Box Bottom Board Explained

#### "Prevention is better than cure"

- Modern beekeepers use traditional practices and equipment playing very important roles in beekeeping farming techniques and subsequent results. The current traditional equipment and practices have catastrophic impact to both the honey production and to the vital protection of the healthy environmental sustainability of the honeybee habitat when interloping parasites invade beehives.
- The ideal environment in which SHBs breed requires food (honey), warmth (inside honeybee hive), humidity (honeybee hive water condensation) and the traditional brood box bottom board.
- Construction of the traditional brood box includes a solid bottom board, a normal entrance and generally two ventilation holes in the lid of the hive.
- Traditional brood box design with its plain bottom board suppresses ventilation thereby allowing condensation and humidity to increase to a level, which optimises the SHB breeding conditions.
- Traditional brood box bottom board definitely creates the right environment for SHB breeding.
- Traditional brood box bottom board allows substantial amassed quantities of debris and detritus where the SHB hide and diseases incubate more readily.
- Should any hives be pest-colonised to the degree as shown on YouTube (Search "Small Hive Beetle Infestation") there is very little ability to salvage these hives.
- The solution lies only with prevention.
- o Rather than trying to control the SHB after it has invaded honeybee colonies' hives which use the traditional brood box bottom board, a better solution is to discourage the SHB from colonising the beehive by radically changing the traditional beehive environment to the extent that SHB breeding simply becomes impossible. o The brood box bottom boards must remain clean at all times.
- The preventive solution already exists. When the brood box traditional bottom board is replaced by the Australian-made Bluebees Brood Box Bottom Board, airflow within the beehive is increased. The humidity and condensation within the beehive will thus dramatically decrease, making the environment inhospitable for the SHB to breed. As one of the prime requirements for the SHB's breeding is humidity the SHB can no longer successfully breed in this dry and clean environment. The SHB will relocate to a more suitable breeding environment, leaving the beehive with optimal ventilation and beetle-free.
- O The revolutionary Australian-made Bluebees Brood Box BottomBoardallows optimal airflow thereby dramatically reducing the humidity created by the natural condensation generated by all healthy honeybee colonies.
- The inside brood and super boxes become dry and remain dry because the right amount of air-flow is allowed to go through the entire beehive.

#### Advertorial

- Additionally, the Australian-made Bluebees Brood Box Bottom Board design allows and encourages the honeybees to eject any interloping pests including the dreaded Varroa Destructor along with any debris / detritus.
- Bees build wax burr on the mesh bottom boards (just like on plain bottom boards) which of course needs to be thoroughly cleaned regularly, otherwise the SHB will breed in the burrs.
- O Preventive action is the correct answer to control interloping pests. Healthy and strong honeybee colonies have their beehive environmental sustainability maintained due of the technical characteristics of the Australian-made Bluebees Brood Box Bottom Board. The Bluebees Brood Box Bottom Board empowers the honeybee colonies to adapt and learn to deal with any interloping pests efficiently.
- The need to use chemical applications to control pests is avoidable, because the honeybee colonies have now the means to efficiently manage the health and cleanliness of their beehive environment.

Beekeepers now have the *choice* between a dangerous polluting chemical applications or a totally safe mechanical application, with the Bluebees Bottom Board.

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- Empowers bees to hunt & eject interloping pests such as: SHB, Wax Moth & Varroa - (not yet in Australia), as well as debris from the hive



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#### BEEAWARE WEBSITE AND NEWSETTER

I have brought this to your attention before but if you have not looked at the BeeAware website then you must. See: http://beeaware.org.au/. Also there is a newsletter that you can subscribe to which gives updates on some of the latest news from the beekeeping sector from here and around the world.

#### **LEVY RETURNS**

I have been asked by several queen bee breeders about the queen levy return for 2014-15. The queen bee levy was set at zero on 1 August 2014 so you will need to submit a return for the one month ie July 2014. For most it will be nil. After that there will be no more returns.

#### EUREKA PRIZE FINALISTS

Dr Nadine Chapman and Professor Ben Oldroyd from the University of Sydney were finalists in the Australian Museum Rural Research and Development Corporation's Eureka Prize for Rural Innovation. Their nomination was in relation to their work on the fight against varroa mites. Whilst not the eventual winners, congratulations to Nadine and Ben on being finalists in such a prestigious award.

#### APP FOR PLANT RECOGNITION

The ABC Rural has a report on a researcher at Edith Cowan University developing an App for plant recognition using a single leaf. So far he has 30 plants in the database. Maybe something for the future for beekeepers. No need for honey flora books.

For more information See: http://www.abc.net.au/ news/2015-08-21/plant-recognitiontechnology/6715766

#### NORTHERN CANOLA GROWNOTE

The Grains Research and Development Corporation (GRDC) has issued a northern canola GrowNote. This is to help growers increase yields in canola in New South Wales and Queensland. For more information See: http:// getfarming.com.au/pages/farming/articles view.php?fld= 9200020150819165933&cId=4

#### WHY ARE QUEEN BEES AND WORKERS DIFFERENT

A newly published paper "A dietary phytochemical alters caste-associated gene expression in honey bees" Mao, Schuler, Berenbaum Sci. Adv. 1, e1 500795 (2015) shows that a phytochemical is responsible for making the worker See: http://advances.sciencemag.org/content/1/7/ e1500795.full-text.pdf

#### **CONSULTATION STARTS ON NEW** BIOSECURITY REGULATION

Public consultation has commenced for the draft Biosecurity (Biosecurity Import Risk Analyses) Regulation 2015.

The Australian Government through the Department of Agriculture has released the first draft regulation under the new Biosecurity Act 2015.

The release of the draft Biosecurity (Biosecurity Import Risk Analyses) Regulation 2015 (BIRA regulation) gives interested clients and stakeholders the opportunity to provide feedback on how biosecurity import risk analyses will be conducted when the new Act takes effect in June 2016.

The BIRA regulation sets out the key steps to the BIRA process. The BIRA regulation also includes specific timeframes, publications and consultation requirements, involvement of a scientific advisory group and the role of the Inspector-General of Biosecurity in the BIRA process.

The draft BIRA process under the new legislation was guided by the recommendations from the recently released examination of the import risk analysis (IRA) process report.

The exposure draft of the BIRA regulation has been published on the department's website for a three month consultation period and will close on 30 November 2015.

More information, or to make a submission, please visit: www.agriculture.gov.au/biosecuritylegislation or contact the Biosecurity Legislation implementation Section at newbiosecuritylegislation@agriculture.gov.au or call us on 1800 040 629.

#### **BEESWAX TO JAPAN**

Under the free trade agreement with Japan there is a gradual reduction of tariffs on honey and beeswax.

AHBIC has been advised by Austrade in Japan that in recent times there has been beeswax exported from Australia that did not take advantage of the reduction in tariff. The current tariff is 10.5% down from 12.8 % pre the free trade agreement. The tariff gradually reduces over the coming years until 1 April 2024 when it will be zero.

For more information of the Free Trade Agreement with Japan See http://dfat.gov.au/trade/agreements/jaepa/pages/ japan-australia-economic-partnership-greement.aspx

#### BIOSECURITY FARMER OF THE YEAR

Congratulations to Lindsay Bourke who was named the Biosecurity Farmer of the Year (Plants). As reported last month this was the fourth year that Lindsay has been a finalist. Truly an amazing record.

#### **AUSTRALIAN HONEY WINS AT APIMONDIA**

Lindsay Bourke entered his leatherwood honey into the honey competition at Apimondia in Korea last month and won. Congratulations to Lindsay.

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#### AGRICULTURAL EXPORT REGULATION REVIEW

There is a review of the agricultural export regulations for Australia. Details can be found at http://www.agriculture.gov.au/export/helps/export-regulation-review. AHBIC has been invited to a meeting and AHBIC will also be putting in a submission.

#### DRAFT POLICY REVIEW FOR IMPORTATION OF DRONE BEE SEMEN

Advice has been received from the Department of Agriculture that the draft policy review of The Importation of Drone Bee Semen is out for comment. It can be found at: http://www.agriculture.gov.au/biosecurity/riskanalysis/memos/ba2015-16

Comments are due in by 1 December, 2015.



Collecting semen from a drone bee



#### **ABARES SURVEY**

AHBIC has been in contact with ABARES re the survey that Minister Joyce put up money for. The actual survey questions have been decided and the survey will give us up to date information on our industry and where it is going.

The survey is due to commence early next year and will be a face to face survey. So if you are selected to be one of the selected participants, please help as much as you can so that we have accurate data on our industry.

#### **B-OUAL**

B-Qual met this month and Dr Nicholas Chantler from Tasmania has been appointed as a Director.

Following the AGM the Board is: Barry Pobke – Chairman Ian Zadow Wayne Fuller Dr Nicholas Chantler Trevor Weatherhead (Secretary) Tony Fuchs (Public Officer)

#### PASSING OF PETER MOLAN

Peter Molan passed away peacefully at his home on 16 September, 2015 aged 71 years.

Peter will be remembered for his great work in bringing manuka honey to the fore in New Zealand. Australia was able to identify that we also have jellybush honey as well as manuka both of which have the same properties.

#### **CATEGORISATION**

The categorisation process is underway for four of the exotic mites, *Varroa destructor*, *V. jacobsoni*, *Tropilaelaps clareae* and *T. mercedesae*. There is no outcome as yet.

#### **ALLERGIES**

I came across this PowerPoint on allergies which may be of interest to you. It was given in 2011 by a member of the group who is an anaesthetist. See http://www.stratfordbeekeepers.org.uk/Newsletters/AllergyAndAnaphylaxis.ppt

#### **EXPORTS AND IMPORTS**

For the financial year ended 30 June, 2015 Australia exported 4,189 tonnes of honey. The top five (5) destinations were China, Malaysia, Philippines, United Kingdom and Hong Kong.

During the same period Australia imported 8,813 tonnes of honey with the top five (5) countries being China, New Zealand, Argentina, Mexico and Brazil.

#### **BEECONNECTED**

Matthew Cossey, CEO of CropLife Australia has sent AHBIC a letter outlining the success so far of BeeConnected. I would hope that beekeepers are using this as it is a very useful tool in helping avoid accidental spraying of bees.

It is great to see the award BeeConnected has received and the fact that it is now to be launched in three countries and fiave different languages. AHBIC is pleased to have been a part of this program but, as I have said, it is there to be used.

"BeeConnected was launched one year ago on the 25th of September to enable easy and private communication between farmers and beekeepers, helping them to protect bees. In the year since its launch, BeeConnected has seen

significant user uptake, received positive reviews, won a prestigious international award, is being rolled out in three countries and, most importantly, is helping to keep Australia's honeybee colonies the healthiest in the world.

BeeConnected is an award-winning example of what the Australian plant science and agriculture industry, in partnership with the Honey Bee Industry, is doing to keep it this way.

Recently, BeeConnected, as part of CropLife Australia's Pollinator Protector Initiative, was awarded the Best Stewardship Programme at the prestigious international Agrow Awards in London.

Receiving this award is recognition of the global leadership in industry stewardship by CropLife's members and the significant support of our official supporters.

Australian farmers, contractors and beekeepers are using the application to communicate and collaborate with other users to ensure best-practice pollinator protection. Users receive real-time information about nearby beekeeper presence or crop protection application activity and are able to instantly message other users to help keep Australia's honeybees healthy while also maintaining their privacy, all from their smartphone device or computer. Without the promotion and support of the Australian Honey Bee Industry Council, the success of BeeConnected would not be possible.

After the success of BeeConnected in Australia, CropLife Australia is launching BeeConnected in countries in three continents, in five different languages, for a number of our international sister organisations and industry alliances. BeeConnected will soon be connecting farmers and beekeepers globally, helping to protect the health of honeybees around the world."

#### EL NINO AHEAD?

Weather Bureau issues Climate Outlook for September to November 2015

The outlook for the next three months indicates:

A wetter-than-average spring is more likely in western and central Australia.

Warmer nights likely for most of Australia, with warmer days are likely along the east coast and far southwest Western Australia.

Climate influences include El Niño in the Pacific and record warm sea surface temperatures in the Indian Ocean.

Updated each month, Climate Outlooks provide a key service for many Australian sectors that need to look at the months and season ahead for their planning, such as the resources, agriculture and rural sectors, as well as emergency services.

Climate Outlooks indicate likely temperature and rainfall trends over monthly or seasonal timescales, and are driven by large-scale shifts in the climate such as El Niño or La Niña events.

By contrast, weather forecasts are currently produced out to seven days, and are used in short-term planning.

For more information, or to watch or share the video visit www.bom.gov.au/climate/ahead/

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