AUSTRALIA'S

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Volume 6 Number 3
MAY - JUNE 2013

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Editor & Production: **Margaret Blunden PO Box 352 Leichhardt NSW 2040 - Phone: 02 9798 6240 Mobile: 0411 662 014 Fax: 02 9797 8061 Email: honeybee@accsoft.com.au**

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- To provide a means whereby the Apiarists of this State may be represented through a common organisation for the welfare of the Industry
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- Opportunity to meet other beekeepers and I & I representatives at meetings, workshops and field days.
- OAMPS Insurance Brokers Ltd (Special Beekeeper Policy): Justin Farrugia, Phone: 02 6933 6600 Email: justin.farrugia@oamps.com.au
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NSW Apiarists' Association Inc. Executive Council

Rob Michie, Mal Porter, Casey Cooper, Shona Blair, Neil Bingley, Kate McGilvray

PRESIDENT: Casey Cooper Darby's Road Tingha 2369 Ph: 02 6723 3551 Email: cooperbees@bigpond.com.au
VICE PRESIDENT: Rob Michie 127 Stirling Rd Moore Creek 2340 Ph: 02 6767 1066 Email: robraem@westnet.com.au
COUNCILLOR: Neil Bingley 101 Woodfield Rd Sutton 2620 Ph: 02 6230 3578 Email: beez101@bigpond.net.au
COUNCILLOR: Mal Porter 135 Eusdale Road Yetholme 2795 Ph: 02 6337 5383 Email: malP380@optusnet.com.au
COUNCILLOR: Dr Shona Blair 14a St. Marys St Camperdown 2050 Ph: 0422 977 520 Email: shonaeblair@gmail.com
SECRETARY/TREASURER: Kate McGilvray PO Box 833 Mudgee 2850 Ph: 02 6373 1435 Fax: 02 6373 1436
Email: info@nswaa.com.au Website: www.nswaa.com.au

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Executive Director: Trevor Weatherhead Ph: 07 5467 2265
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Federal President: Robert McDonald
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Ph: 03 5472 4973 Email: mcdonald.robert@y7mail.com

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)
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PRESIDENT'S REPORT

It is a real honour to take up the role of President of our Association and I'm looking forward to working with my fellow Executive members to help and promote our industry.

I am a member of the Northern Tablelands Branch and have been president for the past four years standing down this year I operate from Tingha, which is 30 km south east of Inverell. My father, Carl Cooper, and I operate a thousand hives for honey and splits for queen rearing, and we produce our own breeder queens using AI. We also do some pollination work.

I would like to take this opportunity to thank the two outgoing members of our Executive, Craig Klingner and Harold Saxvik. Sincere thanks to Craig for all of his hard work over the past seven years, during which time he held the role of Vice President and then President. Craig was unflagging in his commitment to the Association, while balancing his own busy business and all of the responsibilities of a young family. He continues to help the industry through his position as Chair of the AFB National Management Strategy. Special thanks also to Harold, who served for three years as President of Crop Pollinator Association and then for two years on the NSWAA Executive, including a year as Vice President. Harold worked tirelessly for our industry during his time in these roles, as well as maintaining a busy family business.

Malcolm Porter and Shona Blair have filled the two vacancies on the Executive. Malcolm is a third generation beekeeper, and he started in the industry after he left school when working part-time in the family honey business with his father and two brothers. Then in 1984 Malcolm and his wife, Debbie, started their own business and he has been a full time beekeeper ever since. Malcolm is also the President of the Central Tablelands Branch previously served on the State Executive from 2010 to 2011. Shona Blair is a scientist who has been investigating the prebiotic, wound healing and antimicrobial activity of Australian honey for over 15 years. In March 2013 she was appointed to the position of inaugural CEO of the Wheen Bee Foundation. Shona continues to do research into the medicinal activity of honey, as well as focusing on the complex challenges the Australian industry is facing, and on finding ways to alleviate the potential impact of these on honeybees, beekeepers and food security.

The Trade Show was a great success again, and seems to be growing each year, thanks to the hard work of Therese Kershaw. The Trade Show provides an excellent opportunity to find out about products and services that are available for our businesses and industry, and it running throughout the conference means that there is plenty of time to look around. Thank you to the ladies on the front desk, who worked tirelessly with registrations and our fund raising raffles.

Thanks also to the Southern Tablelands branch for cooking the barbeque on Wednesday night and for running the raffle to raise funds for the Clemson Memorial Fund, which helps to pay for overseas speakers. A thank you to Jack Shick, the biggest beekeeper on Lord Howe Island, for taking wonderful photos of the conference and sharing them with us.

Conference this year saw a great line-up of speakers, including numerous Australian experts and international visitors from South Africa, New Zealand and the USA (see the report on the presentations in this edition of *Honeybee News*). A special mention here to Doug Somerville who as responsible for the great line-up and who continues to work above and beyond the call of duty for our Association and industry.

Congratulation to Dr Michael Hornitzky, Chairman of RIRDC Honeybee Advisory Committee on being awarded the Association's Award of Excellence for his long term contribution to the Apiary Industy.

Our sponsors where essential in ensuring the success of the Conference, making it possible for us to have international speakers and show a profit that can enable the executive to carry out duties for the benefit of members. Thanks to A&O Forklift-Hummerbee, Brown's Bees, Capilano, Ecroyd Beekeeping Supplies, RIRDC, Santos, Weerona Apiaries and WFI and of course, thanks to the Southern and Northern Tablelands Branches.

This year the Association awarded life membership to two of our industry's loyal supporters. Congratulations to Margaret Blunden and Billy Weiss. Margaret started at the Australian Honey Board in 1984 and when it closed in 1992 was offered a position at the Australian Horticultural Corporation - honey section where she stayed until the industry set up AHBIC. She then commenced working for the NSWAA as secretary/treasurer from1996-2003 and has been editor of the *Honeybee News* since with part time work for AHBIC 2008-2012. Billy stood for the Executive at Glen Innes conference in 1998, became Vice President in 2000 and President in 2003 - a role he served for nine years. During this time Billy was also the FCAAA President. Billy's hard work and commitment to the industry make him extremely deserving of life membership. On behalf of the Association, congratulations and thank you once again to Margaret and Billy.

The 2014 Conference will be held in the Northern Tablelands, and we are currently looking at venue options. The Executive would like to host a one day workshop just before Conference. The purpose of the workshop will be to help set up a plan for the Association that will map out our major objectives and areas of focus moving into the future. We will be asking for two delegates from each Branch to participate and the Executive will also take part. More details on this will be provided in the next edition of *Honeybee News* and we will be contacting Branches over the coming months to request attendees and make arrangements.

Daniel Costa, from the Mid-north Coast Branch, is the recipient of the Association scholarship to attend the Marcus Oldham Rural Leadership Program this year. Congratulations Daniel and we look forward to hearing about your experience.

As I write this report the Executive is arranging a meeting with the appropriate authorities in Sydney to discuss continuing assess to Traveling Stock Routes/Forestry Corporation NSW/ National Parks.

I look forward to the year ahead, working with the Executive and industry to try and provide more security for those of us in the business of beekeeping.

Casey Cooper
President

2013 CONFERENCE RESOLUTIONS

Resolution 2013/1 - CARRIED unanimously
MOVED: B Weiss SECONDED: Mitchell Lucas
That the constitutional changes as previously advised and notified be accepted by the membership.

Resolution 2013/2 - CARRIED
MOVED: N Bingley SECONDED: H Saxvik
That this conference supports the continued endeavours by the state executive in consultation with forests NSW to formulate an acceptable beekeeping policy on forested lands.

Resolution 2013/4 - CARRIED
MOVED: B Weiss SECONDED: P Mann
That this conference give in principle support for
- *the establishment of an industry led bee biosecurity strategy with a major focus on AFB and*
- *in principle agreement to an increase in the honey levy to fund the biosecurity strategy*

Resolution 2013/5 - CARRIED
MOVED: R Michie SECONDED: C Cooper
That the Executive consider a one day planning workshop to be held the day before the 2014 conference to include representatives of all the branches of the Association covering the identity, scope and focus of the organisation

Resolution 2013/6 - CARRIED
MOVED: K Hudson SECONDED: G Lucas
That NSWAA request AHBIC to make enquiries regarding the stalled free trade negotiations between Australia and China

Resolution 2013/7 - CARRIED
MOVED: B Weiss SECONDED: T Brown
That NSWAA acquire samples of Chinese honey being imported to Australia and have them tested for antibiotics and other beekeeping chemicals used in the Chinese beekeeping industry.

Resolution 2013/8 - CARRIED
MOVED: G Manning SECONDED: D Cowling
That NSWAA request the DPI to offer 2 free AFB honey tests to members of the Association, as was offered to the Amateur Association.

NEW MEMBERS

A warm welcome to the following new members:

Michael James	Condon QLD
Trevor Jory	Bega
Michael Kenyon	Kangaroo Point
Ole Kroll	Mudgee
Andy Livingstone	Whiporie
Jonathon Lockwood	Vittoria
Philip McClelland	Belmont North
Mark Page	Taree
Gail Schuler	Yendon VIC

TOCAL - BEEKEEPING FIELD DAY

Date:	26 October 2013
Time:	8.45am to 3.30 pm
Where:	Tocal College, Paterson NSW
Organised by:	DPI, NSWAA Hunter Valley Branch & Hunter Valley Amateur Beekeeping Club

Patricia Heenan - Secretary/Treasurer
Hunter Valley Branch

CROP REPORT

Northern NSW
Limited rain during the last few months has seen the north of the state return to dry conditions once again.

Beekeepers that worked autumn stringy bark have bees in fair condition for winter honey flow.

Small patches of white box budded well with the warmer weather and have produced some honey though bees will need a good pollen source in early spring.

Yellow box budded well for next year with the dry, warm autumn and a considerable amount of trees are flowering now.

Channel country reported to be giving good honey and with fair rain recently should promote pollen plants for the spring.

Planting of canola has been limited due to the lack of autumn rain.

Casey Cooper

Central NSW
Since the beginning of the year conditions have been less than favourable.

The red stringy which was looking to possibly build bees for autumn and winter was a big letdown as it only had a light budding in some areas.

Yellow box which was looking to be a reasonable budding for this new honey season is flowering now in most places.

I have been talking to the farmer I go to for canola and he didn't start sewing canola until the 8 May which is late.

Most of us would have our bees ready now to go to the almonds at the end of July.

With some more rain over the winter months any trees that are carrying bud now may be beneficial in the warmer months. It may even be a weed year.

Mal Porter

AMERICAN FOULBROOD (AFB) – On-line notification

A quick and easy method to notify NSW Department of Primary Industries (NSW DPI) of a confirmed or suspected case of AFB is to use the online form. See web page http://www.dpi.nsw.gov.au/agriculture/livestock. Click on the 'on-line' and a notification form will appear on screen.

Enter the details as required, click on the submit button and your notification is in the system. You will receive a confirmation that the information was submitted successfully.

It is important to notify AFB to ensure that the necessary actions are taken to control or eradicate the outbreak, trace the source if possible, and take measures to prevent further spread of the disease. The collection of data on the suspected AFB hot spots allows government resources to be used more efficiently.

For further information about AFB notifications, contact Mick Rankmore, NSW DPI Regulatory Specialist Apiaries on office (02) 6741 8374, mobile 0402 078 963 or by email michael.rankmore@dpi.nsw/gov.au

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2013 NSWAA CONFERENCE PRESENTATIONS

The 2013 NSW Apiarists' Association 100th Annual Conference was a great success, and this was due in no small part to the exceptional line up of speakers. A number of the key themes are very briefly summarised below.

With the excellent presentations, growing trade show and the opportunity to meet with friends and colleagues to discuss problems and find solutions, the opportunities presented by attending NSW Apiarists' Association Annual Conference are priceless.

International speakers
Mike Allsopp (Senior Researcher and Head of Honeybee Research Section, Agriculture Research Council, South Africa) treated us to four presentations over the three days of conference. Mike's presentations on bees and beekeeping in South Africa were fascinating.

He talked about beekeeping practices in South Africa, which seem to be less hands-on and managed when compared to ours. This is at least partly due to the two main species of honey bees in South Africa being native to the region, and the fact that the populations in managed and wild hives often interchange. The two species are the African honey bee (*Apis mellifera scutellata*) and the Cape honey bee (*Apis mellifera capensis*). In terms of honey production the African bees produces less honey than their European counterparts, they also swarm and abscond more often.

It was fascinating to hear that the Cape bee can act as a parasite against the African bee. Normally these to populations are separated geographically, but when managed hives of the Cape bee were moved into the African bee habitat by beekeepers the incoming species had, and continues to have, a serious impact.

If a female worker Cape bee enters an African bee colony she is not attacked, partly due to her African queen bee-like pheromones. She can lay eggs, which are tended by the Africa bees because of the pheromones, and they will hatch as "clones" of herself, and these individuals will also go on to lay eggs. The Cape bee workers increase in number within the host colony, eventually leading to the death of the host colony. This happens because of the dwindling numbers of African honey bee workers that perform foraging duties, as the Cape bees don't do much foraging work, and the African queen dies so no worker Africans are replacing their sisters. When the colony dies, the Cape females will seek out a new host colony.

Due to the nature of the South African's bees and beekeeping, the threats we face seem to be much less of a problem. For example, even though *Varroa* has spread throughout Africa it is having a minimal impact, probably because the Cape and Africa bees are innately tolerant to *Varroa.* However, the South Africa beekeeper does face a number of challenges we do not, such as harassment or robbing of their hives by rhinos and badgers.

Mike left us with food for thought about the way we manage all livestock, and that perhaps we are "poodling" our bees too much. That is, in the process of breading high honey producing and calm bees perhaps we're also breading weaker strains with higher management overheads. One was left with the impression that bees, and beekeepers, are a little tougher in South Africa…

Another excellent overseas speaker was Dr Jeff Pettis (Research Leader, Bee Research Laboratory, US Department of Agriculture). Jeff gave a great overview of Colony Collapse Disorder (CCD) and the large number of colony losses being seen in the United States.

Although managed colonies of honey bees have been in decline in the US for quite some time, losses have reached new highs in the past several years, with around a third of the country's hives now being lost over the winters. It was initially thought that a specific parasites or disease played a key role in CCD, but no single pathogen has been shown to be consistently associated with it. Jeff has found that CCD colonies have heavier pathogen loads, but we still don't know if this is a cause or an effect of CCD.

It was also interesting to hear that the beekeepers who worked their bees in different ways were all as susceptible to colony losses. For example, beekeepers that moved their bees for almond pollination experienced similar losses to those who were working honey flows.

Jeff also spoke about bees being able to detect some pesticides residues in pollen they bring back to the hive. They try to isolate this pollen by sealing the cells with propolis so it isn't used as food for the hive.

Varroa continues to be a huge problem for the US beekeeping industry. It is association with other diseases, particularly viruses, and the mite is developing resistance to the treatments being used in hives, which is sometimes "helped along" by beekeepers using products incorrectly.

On the topic of importing Australian bees into the US, Jeff said the reason for the current ban was due to the unknown viral load of our bees, and the worry that the US has that our bees may have viruses theirs don't.

Just like elsewhere, bees in the US are subject to multiple pathogenic stresses, such as bacterial infections (like AFB), fungal infections (like chalk brood), viruses (like sacbrood virus) and other parasites (like *Varroa* and *Nosema*).

The overall theme from Jeff's presentations was that bee health is declining, but not for a simple, single reason. Rather there are complex interactions between pathogens, nutrition and pesticides.

We were also lucky to have had some New Zealanders at the conference to share some of their experiences and knowledge. A recurring theme throughout the Conference was how much "better" the NZ industry is doing when compared to the Australian one, particularly in terms of honey and pollination prices and access to foreign markets to sell their honey. However, the reasons for this are multifaceted and the NZ industry has done a great deal of work to improve their lot.

Byron Taylor (Apicultural Officer, AusreQuality NZ) gave a number of excellent presentations over the three days. He spoke about the implementation of the NZ AFB management strategy. The NZ system requires an annual inspection of all hives, by accredited beekeepers, and includes a policy of destroying infected material. Beekeeper education and auditing of beekeeper performance are also important parts of the program. To become accredited beekeepers must attend an AFB workshop and pass a competency test. Beekeepers who have not gone through this process must have an approved beekeeper inspect their hives once a year. The scheme is funded via a levy system and they have around 95% payment compliance. The scheme is not totally on track for the targets they set at the beginning, and this can be attributed to gaps in inspections, knowledge and education. However, it is certainly having a positive impact and they have their lowest levels of AFB in history.

Byron also spoke about the honey extraction plant audits that are run in NZ. These are important for producers who want to tap into local and/or international markets, as a number of the standards are different. The export market is larger than the

domestic, and it is continuing to grow. Most processors opted for the higher (and more costly) standard. On average the standard of plants improved, but many started from a good place. Overall the investment in the factories and equipment and better record keeping and compliance means that more producers are able to tap into lucrative foreign markets.

Peter Bray (Managing Director, Airborne Honey Limited NZ) presented on the marketing of NZ honey and on their industry, past and present. Over time the way the industry has been regulated and supported by government bodies has changed, and relying on external parties, such as the government and apiary inspectors purely funded by government, is no longer an option and so the industry has had to learn to look after itself to a large extent.

The statistics on the production and the export of honey in NZ were very interesting. While honey production has been pretty steady for years, the amount of honey exported from NZ has increased significantly. For example, in 2000 around 9,600 tonnes of honey were produced and 2,500 tonnes were exported, but in 2012 10,300 tonnes were produced and 7,700 tonnes were exported.

Peter spoke about the incredible usefulness of using the uniqueness of different floral honeys as a marketing tool, and as something to raise the profile and value of honey. He also said that the pioneering work of Professor Peter Molan on the activity of manuka honey had a very positive impact on the whole NZ honey industry (not just active manuka producers). Even though a great deal of Professor Molan's work focused on the usefulness of activity manuka honey as a wound dressing, it has left the general public with the impression that eating honey is good for them too.

Dr Karyne Rogers (Senior Scientist, National Isotope Centre, NZ) spoke about the uniqueness of manuka honey and the challenges NZ honey produces face in exporting honey. The international standards for honey are based on European flora-type honeys. However, honeys such as manuka can be pure and unadulterated, but can still "fail" some of the import tests, and they come back with a result suggesting that sugars have been added. While the reasons for this are now understood, NZ still faces the challenge of getting the international testers to understand the issues and apply the correct tests to these types of honey.

Although the NZ industry is apparently doing better than ours, it is clear that this hasn't just come about from luck or relying on external bodies for solutions, but rather required input from industry bodies and beekeepers. Quality assurance and auditing, taking advantage of unique floral sources, public education, good packaging and clever marketing are all issues being well addressed by many of the NZ producers who are doing well at the moment.

Local packers
As well as the international contingent there were also some excellent presentations from Australian scientists and key industry players. Karla Hudson (General Manager, Superbee) gave a very interesting presentation on the potential of the Asian market for Australian honey. Karla spoke about the challenges as well as the rewards of breaking into these markets. While China is a massive potential buyer for our honey, the difficulties of dealing with the bureaucracy and the fact that we don't have an appropriate trade agreement with them (unlike New Zealand) means we are missing an opportunity. Karla also made it clear that as a result of the huge diversity of Asian countries a one-size-fits all approach will not work when attempting to sell our honey in these markets.

Dr Ben McKee (CEO, Capilano) talked about the challenges the honey packing industry faces. He gave us an overview of the history of Capilano, and went on to discuss other topics such as the impact of supermarket "price wars" on honey prices. Ben also talked about the impact of changing regulations and trade agreements, for example some countries are no longer accepting honey if it has been stored in metal drums, which means there is a need for the packers to accept only honey that has been stored in appropriate food grade plastics.

Scientific stories
We had a wonderful retrospective from Dr Garry Levot (Principle Research Scientist, NSW DPI) on Apithor for the control of small hive beetle. Garry spoke about the development of Apithor. From determining the best pesticide to use, developing a housing that would attract the beetles but protect the bees, to licencing and appropriate application. It was a fantastic success story, and it's obvious that there was a great deal of work behind the success.

Dr John Roberts (Bee Scientist, CSIRO) gave a very interesting presentation on the project he is running looking at screening Asian bees in Queensland (around the Cairns region) for disease, and comparing them to diseases carried by honey bees from the same area. His preliminary results suggest that there is not much transfer of disease between the two different types of bees, which is heartening. He is also working on a national survey of our honey bees to look at what sorts of viruses and other parasites they are carrying as there are large gaps in our knowledge of this. Hopefully John's results will be useful tools in arguing against the bans some countries have against our bees.

Dr Shona Blair (CEO, Wheen Bee Foundation) spoke about the marketing potential of Australian honey, and on further research ideas to try and identify some more sources of active Australian *Leptospermum* (jelly bush) honey.

Nural Cokcetin (PhD Candidate, University of NSW) presented some of her very exciting findings on the positive effects of honey on our "good bugs". Nural has been investigating the impact of different Australian honeys on the growth of good bugs and bad bugs in our gut. She has found that different honeys have different effects on the gut bug population, and that many Australian honeys have a positive effect on the good bugs, while not increasing the number of bad bugs.

Some help from technology
We had a couple of interesting talks on the potential usefulness of technology to the industry. Ross Meggs (Managing Director, Faunatech Ausbat) spoke about a number of remote surveillance camera options that might be useful to beekeeper with security issues for their hive.

Jay Hughes was the 2012 recipient of the Marcus Oldham Scholarship. As part of his talk on this experience, Jay told us about learning to use social media tools such as facebook and twitter to communicate, educate and connect with the public. Jay obviously found his experience at the Marcus Oldham leadership course very helpful and it was great to hear that he has been able to apply much of what he learnt there.

Regulations
Regulations and laws important to our industry were discussed at the Conference. Detective Senior Constable Phil McCloskey (NSW Police) let the audience know that the police do take theft and/or damage to beehives seriously. It was obvious that he is very keen to help beekeepers experiencing any issues with criminal activity around their hives, and he said that he is always available to help beekeepers with this.

Glenn Locke (Senior Food Safety Officer, NSW Food Authority) talked about truth in labelling and the regulations around what we can and can't put on honey labels. He expanded on the differences between "made in Australia" and "product of Australia". Glenn also talked about the health claims a producer can and can't make. Understand this is important for anyone wishing to sell "active" honey. This is something that may become more relevant if more beekeepers or packers want to tap into some of the research being done on the health benefits of honey for their marketing.

Industry partners
Sam Malfroy (Project Officer, Plant Health Australia) gave an excellent presentation on our industry and Plant Health Australia (PHA). PHA is the national coordinator of government–

industry partnership for plant biosecurity in Australia, and our membership is clearly very beneficial for our industry. Sam is working on a number of projects including Asian honey bee transition to management, *Varroa* strategy and AFB future management. Greg Fraser (CEO and Executive Director, PHA) spoke about the industry biosecurity plan, which outlines key threats to the industry, risk mitigation plans, identification and categorisation of exotic pests and contingency plans.

Craig Klingner, our outgoing President, talked about national AFB control. RIRDC funded an AFB Future Management Workshop that was held in Canberra in March. Attended by industry, State Departments of Primary Industries and scientists, a consensus was reached that a national approach for the control of AFB should be developed. To this end an AFB steering committee consisting of Craig, Ian Zadow and Sam Malfroy will be working to address the a full range of biosecurity issues, including a national plan to control AFB.

We also had a thought provoking presentation from Greg Mills (General Manager, GoAhead Business Solutions). Greg spoke about the importance of industries and Associations like ours having well thought out and documented plans for their management and governance. He clearly understood our industry well, particularly the complex challenges we face. As an Association it would be very helpful for us to have a plan for what we are trying to achieve and how we want to do it. This includes deciding what we will be involved in and what we won't, what direction we should take and how we should allocate our resources. A plan like this would ensure that we are not just reacting to issues as they come up, without considering the long-term viability and usefulness of the Association.

Tim Burfitt (Manager Intensive Livestock Industry Development, NSW DPI) explained the recent changes to the NSW Department of Primary Industries and how these will impact on our industry. We were very lucky compared to many other industries in that we still have Tim, as well as Dr Doug Somerville (Technical Specialist (Honey Bees)), Nick Annand (Livestock Officer (Apiculture)) and Mick Rankmore (Regulatory Specialist (Apiaries)). However, it is clear that as an industry the days when we could rely on government to take responsibility for managing significant problems for us are over.

And last, but by no means least, the Conference started with reports from our supporting bodies, including Lindsay Bourke (AHBIC), Dr Michael Hornitzky (RIRDC Honeybee Program) and Dr Doug Somerville and Mick Rankmore (NSW DPI).

We must thank the sponsors who made it possible for us to have such a great line up: Brown's Bee's, Capilano and Weerona Apiaries. And special mention should go to Doug Somerville for his behind the scenes efforts in organising such a fantastic speakers program.

Shona Blair PhD

NICK'S NEWS
from DPI NSW

Nick Annand
Livestock Officer (Bees), NSW Department of Primary Industries, Bathurst
Ph: 02 6330 1210 Email: nicholas.annand@dpi.nsw.gov.au

NEONICOTINOIDS
WHAT IS HAPPENING IN AUSTRALIA?

The debate around neonicotinoid insecticides (neonics) and their level of impact on the health of bees/pollinators is a subject currently receiving a lot of publicity and discussion both here and around the world. The latest major action in relation to neonics has occurred in the European Union (EU). As a result of their possible impacts on pollinators, on the 1 December 2013 the EU will implement restrictions on the use of three neonicotinoid products - clothianidin, imidacloprid and thiamethoxam - in seed treatment, soil application (granules) and foliar treatment on plants and cereals (with the exception of winter cereals) that are attractive to bees. The restrictions for use will be for two years. As new information becomes available and at the latest within 2 years, the EU Commission will review the conditions of approval taking into account new scientific and technical developments. This is a major step the EU has taken and no doubt is being watched closely by many beekeepers and farmers around the world.

Is this reaction by the EU justified? Well that will depend largely on the individuals view point. I do encourage anybody entering the debate to thoroughly investigate all the science looking at the neonics before coming to any conclusions. This is a very large job but with sound knowledge wiser decisions can be made. However there are still gaps in the science and knowledge base. The difficultly with neonics, and probably also many other pesticides, is that sub lethal levels may well have direct or indirect affects on bees/pollinators that are difficult to identify and/or quantify.

Here in Australia no such banning of neonics has occurred but the issue of possible risks associated with these insecticides is definitely in the minds of beekeepers and the chemical regulators, the Australian Pesticides and Veterinary Medicines Authority (APVMA). In August 2012 the APVMA announced a review to look at the use of neonics in Australia to see if they have higher health implications for honey bees than other pesticides that have been used for many years. They also wanted to review the current data requirements for insecticide testing to make sure the data adequately addresses any potential affects of neonics on bees. Advice on the consistency of bee protection statements on pesticide labels was also sought.

As part of the review, a report by Chris Lee-Steere of the Australian Environment Agency P/L (AEA) titled **"Consideration of Testing Requirements and Label Statements – In relation to the impact of pesticides on the health of honey bees and other insect pollinators"** was published on the APVMA web site on the 28 March 2013. I have attempted to provide a summery covering the questions asked and the conclusions found. The full report can be found on the APVMA website.

The reports introduction asks whether:

a) the use of neonics in Australia is presenting more of a risk to bees/pollinators than other pesticides which have been in use for many years.
b) the current APVMA data requirements for testing of insecticides are adequate to address scientific concerns about subtle effects of neonics (and other pesticides) on honey bees/pollinators.

The APVMA requested AEA look at and advise whether the data requirements (as for b) above) are adequate taking into account the work being done internally in this area and to propose additional data requirements in the event that the current ones are inadequate. AEA was requested to also look over and review the consistency/inconsistency of wording regarding bee protection statements of Australian products and advise if changes need to be made to standardised statements.

Conclusions

Data Requirements - The report found there is a lack of harmonised guidelines for testing of pesticides on bees/pollinators. There has been a lot of international discussion over the past few years relating to data required to assess exposure and toxicity of pesticides to bees/pollinators with ongoing consideration at an international level for a common suite of test data requirements.

For Australia the current APVMA data requirements for testing insecticides are inadequate to properly consider possible routes and extent of exposure and potential adverse effects from pesticides (including neonics) on bees/pollinators.

Risk Assessment Methodology – The report found the risk assessment methodology currently used in Australia is inadequate. Internationally there have been recent developments in risk assessment methodology for bees/pollinators but for pesticides for Australia the bees/pollinators have only been a minor part of the overall environmental risk assessment. The additional international focus on this issue has resulted in much larger data sets that require longer evaluation times for pesticides becoming registered, placing additional strain on those providing the service.

Labelling - The review of bee protection statements on some of the Australian pesticide labels found a large range of signal headings (10) and warning statements (47), concluding that there are large inconsistencies in label statements between products, even between products with the same active constituents. The report hopes it provides the basis for developing a more harmonized bee protection labelling statements.

The report included 5 recommendations for the APVMA to consider in the overall review which have been summarised as follows:

- consider tests available and under development that will improve knowledge of the exposure and effects of pesticides on bees and other insect pollinators, and ensure these are reflected in relevant APVMA data guidelines
- establish appropriate Australian protection goals for insect pollinators and link data requirements and risk assessment methodology to these goals
- review the inconsistencies in bee protection statements found on Australian product labels
- convene a stakeholder workshop to look at the first three recommendations and issues
- evaluate the increasing amount of data already being submitted with pesticide applications in order to better understand additional studies being conducted on pesticide effects on pollinators.

APVMA Review
In relation to the APVMA review of neonics/pesticides impacts on bees and pollinators, they are continuing to examine the three European Food Safety Authority reports, recommendations of the independent expert report and evidence from the scientific literature.

APVMA are also seeking information from the manufacturers of imidacloprid (Bayer), thiamethoxam (Syngenta) and clothianidin (Sumitomo). As well as a large range of stakeholders including beekeepers, honeypackers and exporters.

From this the APVMA are hoping to release a draft report mid 2013 (so this should be close to being available when you read this article) and depending on the outcomes of the report there may be a number of regulatory options available to the APVMA.

Here's hoping the review process the APVMA is undertaking leads to informed and science based decisions in relation to the use of neonics and the risks they pose to bees/pollinators and the overall environment. It is good to see the APVMA take action on such issues when major concerns are raised.

Much of what is written here was taken from the APVMA web site, see address below. The web site also provides a comprehensive list of the scientific literature on this subject.
http://www.apvma.gov.au/news_media/chemicals/neonics.php

EU - BEES & PESTICIDES

Brussels, 29 April 2013 - European Commission to proceed with plan to better protect bees

Today, EU Member States did not reach a qualified majority – either in favour or against - in the Appeal Committee[1] which discussed a Commission proposal to restrict the use of 3 neonicotinoid insecticides.

Tonio Borg, Health and Consumer Commissioner, said: *"Although a majority of Member States now supports our proposal, the necessary qualified majority was not reached. The decision now lies with the Commission. Since our proposal is based on a number of risks to bee health identified by the European Food Safety Authority, the Commission will go ahead with its text in the coming weeks."* To conclude: *"I pledge to do my utmost to ensure that our bees, which are so vital to our ecosystem and contribute over €22 billion annually to European agriculture, are protected."*

15 Member States supported the restriction, 8 Member States voted against and 4 Member States abstained during the appeal committee vote.

Main elements of the proposal
The proposal restricts the use of 3 neonicotinoids (clothianidin, imidacloprid and thiametoxam) for seed treatment, soil application (granules) and foliar treatment on bee attractive plants and cereals.

In addition, the remaining authorised uses are available only to professionals. Exceptions will be limited to the possibility to treat bee-attractive crops in greenhouses, in open-air fields only after flowering. The restrictions will apply from 1 December 2013.

As soon as new information is available, and at the latest within 2 years, the Commission will **review the conditions of approval of the 3 neonicotinoids** to take into account relevant scientific and technical developments.

Next steps
In absence of an agreement between Member States, it is now for the Commission to decide on the adoption of the proposed restriction.

Background
Following the request of the European Commission, the European Food Safety Authority (EFSA) published, on 16 January, its scientific findings on the risks associated with the use of three pesticides, belonging to the neonicotinoid family, on bee health. On the basis of this opinion, the Commission tabled a proposal for discussion with Member States.

Experts representing the EU-27 met in the Standing Committee on the Food Chain and Animal Health on 15 March and failed to reach a qualified majority - either in favour or against – the proposal to restrict the use of three neonicotinoid. 13 Member States supported the restriction, 9 Member States voted against and 5 Member States abstained. The proposal was then referred to the appeal committee on 29 April.

For more information: http://ec.europa.eu/food/animal/liveanimals/bees/neonicotinoids_en.htm
EFSA's website: http://www.efsa.europa.eu/en/topics/topic/beehealth.htm?wtrl=01
Follow us on Twitter: @EU_Consumer

VIC BEEKEEPERS REACTION TO PESTICIDE DECISION

Urban beekeepers in Victoria are demanding retailer Bunnings Warehouse remove all products containing the pesticide neonicotinoids, following the European Union's decision to ban it a fortnight ago.

More than 16,000 people have signed an online petition calling on the hardware chain to pull popular Yates-brand pesticides off its shelves. One brand sold by Bunnings - Yates' Confidor Hose-On Lawn pesticide - carries the warning it ''will kill bees''.

Melbourne chairman of the Victorian Apiarists' Association, Bernie Heinze, said research linked neonicotinoids with colony collapse disorder in Europe. Mr Heinze, who keeps tens of thousands of European honey bees on his Mount Evelyn property, said he knew of a hive that was destroyed after it was sprayed with neonicotinoids. But he said more research was needed to identify how the chemicals affect Australian bees because unlike those in Europe, they have not been weakened by the varroa mite parasite.

''Neonicotinoids are very effective when sprayed because the whole plant becomes poisoned. The poison is picked up by bees through nectar and pollen, Mr Heinze said. ''It usually doesn't kill the bees directly, but the main problem is the poison is taken back to the hive and fed to the young.''

The petition against Bunnings says it wants to send a ''loud, clear message'' that the ''devastating toxin'' is damaging ecosystems. ''Major retailers don't care what type of pesticides they sell, only what type of pesticides their customers will buy,'' it reads.

Bunnings managing director, John Gillam, said he would wait for completion of a review of pesticides and pollination by the Australian Pesticide and Veterinary Medicines Authority. He said the company was working closely with Yates, its main pesticide supplier. ''Bunnings complies fully with all APVMA regulations and requirements and takes matters of product stewardship and safety very seriously,'' he said.

The Australian Honey Bee Industry Council will hold off on throwing support behind the campaign until the APVMA review is completed, its executive director, Trevor Weatherhead, said.

''In Australia we don't have the same problems of dying hives as they do in Europe, so we'll wait for the review. The results should be out in a couple of months' time,'' he said.

BATHURST SHOW SUCCESS

Our branch had a stand at this year's Royal Bathurst Show held on the 12, 13, 14 April 2013. On the Thursday before the Show started some of our branch members set up the stand and the live bee display. On the Show days our volunteers maned the stand and also helped out with the live bee demonstration. One of our members Carol Bolam, wife of Nick volunteered to do a live bee demonstration. It is good to see some women hop in and do a demonstration, as the public can see firsthand that beekeeping is not just a man's job, congratulations Carol. This was the first time for about twenty years that our branch has had a live bee display at the Show.

The branch had a small amount of honey for sale and displays of bee products. They also had a display of photos and material from the early days of beekeeping to the modern day. I asked around the honey packers for promotional material and Beechworth and Capilano helped out with sachets of honey DVD'S to play, show bags and literature to hand out to the public. Thank you so much to those two packers.

The honey for sale was donated by some of our members and was bottled by David and Tracey Parker and the labels supplied by Penders. The show ran over three days and just like the Sydney Royal we had a coordinator - Geoff Porter who filled this role very well as he has only been a part time beekeeper for four years.

Our efforts were duly rewarded with the branch winning first prize for the stand at the show.

One question most commonly asked by people at the show was how they could get a hive of bees to put in there garden and when asked why, they would say there are no bees to pollinate the garden.

I would like to thank all of our members and their partners for giving up their time to help out the branch at the show. On that point it should be noted how important all our branches are and to pull together and stay proactive for the survival of the bee industry. Our branch welcomes all new members and members to attend branch meetings and informal days if requested. To find out more about our branch and other branches go to the NSWAA web site for more information.

Mal Porter
President - Central Tablelands Branch

NOEL CHUCK RECEIVES AWARD!

At our meeting on Tuesday 16 April 2013 I presented Mr Noel Chuck with his OBE award (Over Bloomin' Eighty) on behalf of the Central Tablelands Branch.

Noel started his beekeeping when he was at school and on leaving school in 1947 he worked for two beekeepers in the Illawarra district for a time and then went to work for Shell Petroleum.

While working for Shell Noel also had 600 hives and after many years at Shell he took long service leave. While he was on long service he bought into a Produce Store where he thought he would have more time to work his bees. After his long service had finished he went back to Shell for a brief time and decided to work his bees as the Produce Store wasn't working so he sold his share and went beekeeping full time and has been keeping bees ever since.

Noel spent seven years on the Executive with two years as President of the Association. One thing he would change if he had his beekeeping life over would be to go to pallets sooner than he did. His favourite flow to work is Stringybark and one of Noel's sayings is "go to the mountains for bees, go west for honey and go to the coast to go broke."

Noel has a wealth of beekeeping knowledge and we are very privileged to have him attend our meetings and share his knowledge.

Wayne Hammond

APIMONDIA 2013 - Kiev, Ukraine *29 September - 4 October*

We are pleased and proud to invite you to cooperation and active participation in the XXXXIII International Apimondia Congress to be held in the capital of Ukraine, Kyiv, on 29 September – 4 October 2013. The Congress will be the greatest global beekeeping event in the history of the International Federation of Beekeeping Associations Apimondia.

The Congress in Ukraine provide opportunity for fruitful cooperation for the beekeeping sector professionals of different countries and professionals of related areas, namely horticulture, ecology, environmental protection, food quality control, development and manufacture of modern means of mechanization, latest equipment and packaging, etc.

As per moment the companies of Argentina, Armenia, Austria, Brazil, Bulgaria, Canada, China, Croatia, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, India, Italy, Kazakhstan, Lithuania, Mexico, Pakistan, Poland, Romania, Russian Federation, Serbia, Slovak Republic, South Korea, Spain, Sweden, Switzerland, Turkey, the UK, Ukraine, the USA have confirmed their participation in the International Exhibition ApiExpo 2013 to be held within the framework of the Congress.

The Congress is supported by the President of Ukraine Viktor Yanukovych.

The projects will be executed within the framework of the Congress as follows: the Scientific Program "Beyond the Hive: Beekeeping and Global Challenges", the Exhibition Program – the International Exhibition ApiExpo 2013, Social and Cultural Projects with participation of Ukrainian beekeeping experts, the World Beekeeping Awards, the Tourist Programs comprising of agricultural sector scientific and production facilities, beekeeping sites of Ukraine, educational institutions, interesting historical and cultural centres of our country.

Delegate Registration
Delegate Registration for the XXXXIII International Apicultural Congress is now open. You can register now as the Congress Delegate at prices lower than during the Congress holding. By registering as a Full Congress Delegate, you will have the opportunity to participate in all its programs, to learn about the scientific researches of the scientists from all over the world, to see modern technological innovations at ApiExpo 2013, to establish contacts with exporters and importers and enjoy communicating with like-minded people, to discover Ukraine and the Ukrainians. You can pay the fee of the Congress Delegate registration by a bank card directly on the website of the Congress, or by bank transfer.

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DOUG'S COLUMN

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

LONG LIVE THE QUEEN

In this article I will talk about what goes into producing a 'quality queen bee', report on the Wheen Foundation seminar held back in March, and ultimately ask the question: - "what is a fair price for a queen?"

Each year the DPI conducts a queen course, usually around March or April. We restrict the numbers to a maximum of 16 but only occasionally reach this number of participants. At the conclusion of each course the participants are split into smaller groups and asked to address the question of what are the critical or key points in producing a quality queen bee.

The following points are equally important and not in any specific order. In conclusion, to rear a quality queen bee requires attention to detail, a high beekeeping skill set and a degree of passion:

- Selection of breeders or what we have termed mother stock. This can be at a very basic level, i.e. select the best performing colonies in your apiary or it could be the purchasing of breeder queens from a recognised breeding scheme or group. Selection criteria should include: docility or gentle natured bees, superior honey production, reduced swarming behaviour, a demonstration of good hygienic behaviour, disease freedom, i.e. no visual symptoms of brood diseases which relate in part back to hygienic behaviour. Other minor selection points may also be included; colour could be added to this list.

- Selection of the male line or 'drone mother stock'. This is equality as important as the selection of the female line but often escapes the attention of many beekeepers.

- Are the environmental conditions ideal? In this point I include climatic and nutritional factors.

  Extremes in cold, heat or wet weather are not conducive conditions for bee flight or foraging activity. Winter months in the Southern areas of Australia are too cold to consider rearing queens. The wet season in Northern Australia during summer also makes it difficult to rear queens.

  Good nutrition is a vital component of rearing quality queen bees. A steady nectar flow will promote brood rearing which will promote pollen collection. This can be substituted by feeding sugar syrup to the colonies on a regular basis (at least weekly). If there is a lack of stored pollen or available pollen in the field, drone production ceases and in extreme circumstances drones are evicted.

  Pollen supplement is more problematic as the dietary requirements of bees are not fully understood. Some beekeepers have trapped and fed pollen back to breeder colonies but this is very labour intensive and pollen has a very limited shelf life before it deteriorates.

- The grafting age of the female larvae must be in the 12-36 hour bracket. If the larvae are a bit older say 36-48 hours the number of ovarioles that develop in the ovaries will be less. Most experienced queen breeders have this under control but it can be a trap for new players who may be tempted to graft the slightly larger grubs (larvae).

- Time of introducing ripe queen cells into mating nucleus colonies is usually not debated. This is normally 10 days after grafting but can be 11 days. This creates a tight time line no matter what the weather. What size of nucleus colony the cells are introduced into depends on what material you have, how many queens you are producing and to some degree if you are producing queens for yourself or for sale. Beekeepers producing queens for their own hives will normally use large full depth nucleus colonies, where as to facilitate catching queen's commercial queen breeders will often use smaller nucleus colonies. Either way these nucleus colonies should be free of brood disease symptoms, have access to adequate pollen and nectar and be populated by younger worker bees.

- The number of drone mother colonies will depend on the number of virgin queens that require the services of mature drones at any given time. Various estimates have been published but some where up to 10 drone mother colonies for every 100 mating nucleus colonies is acceptable. The drone mother colonies can also be placed up to 2km away from the mating nucleus colonies.

- The age of the queen when caught and caged to be shipped, posted or transported, from the available evidence, has a major bearing on the introduction success and subsequent performance of that queen. Queens caught out of nucleus colonies at 28 days performed better that queens caught at 14-21 days.

The Wheen Bee Foundation seminar held in March was mostly focused on the quality of the breeder queens available in Australia. Professor Ben Oldroyd from Sydney University started the proceedings with the case for stock improvement. What gains can we possibly expect from setting up a structured stock improvement programme? There is ample evidence in other livestock fields that support stock improvement due to the very positive gains that have been made. Ben outlined a basic breeding programme. Start with 100 colonies of honey bees, measure their productivity, docility etc and select the best 10 queens. Produce virgin queens from these 10 queens and inseminate (using AI) these queens with semen from drones from all the colonies. This helps stop in-breeding. The heritability for honey production is high (50%), thus a well conducted program should improve production at a rate of 10% per year. Meaningful results should be obvious in the first few years but will be more difficult over time. The 'Better Bees' program in WA from 1983-1991 produced an annual improvement of 3.1%, according to Rob Manning. Ben also quoted another program in Germany which had made gains of 0.54% per year. The difficulty is maintaining interest in a program when the gains were small, particularly if measuring variable data for honey production from year to year.

Many of the other presentations at the seminar outlined various past and present breeding schemes. The history of two Australian queen breeding schemes is worth repeating. In 1976 an advanced breeding school was held at Queensland Agricultural College. At the end, all participants were involved in a discussion on how the future of bee breeding might look like in Australia. All were in agreement that a national bee breeding programme would be highly desirable and that there was an immediate need to build a quarantine facility to enable the risk of introducing pests and diseases to be reduced with subsequent importation of queens. By 1983 a quarantine facility was operational and negotiations were well advanced for Hawkesbury Agricultural College to manage a bee breeding facility.

In 1986 the Honey Research Committee funded the Eastern States Bee Breeding Scheme. Initially 30 lines were established from 48 selected queen mothers. These lines were recruited from

around Australia, the USA and NZ. In 1987 a similar scheme was set up in WA because of the problems of EFB in the eastern states. Both these programmes ran until 1992 when the research committee providing the bulk of the funds decided that the research and development role of the projects had been fulfilled. Both programs where unable to survive without a flow of grant money and the stock was sold. A consortium of interested beekeepers including Gretchen Wheen acquired a representative of each line with the intention of maintaining the stock and continuing the breeding program. This group continued this exercise until 2006. Unfortunately, no field evaluation has been performed on this stock since then.

Other bee breeding schemes currently in play were discussed at the seminar but I was unclear what level of support they were receiving from the beekeeping industry. Some of the key points from all the talks, that I could deduce, were:

- Institutionalised bee breeding schemes are expensive and these organisations require someone to pay
- The detail of current schemes was hazy in relation to reporting production gains, methods used to determine improvements in stock etc
- There is no coordination between schemes
- Beekeepers are reluctant to pay for the real cost of producing breeder queens

So what is a fair price for a queen bee? In this case I refer to a breeder queen and not a production queen. Gretchen Wheen has an article published in the ABK in 2007 suggesting that if a breeder queen is 'done properly' the price could be as much as $5,000 in costs to produce thus paying $500 for a queen is a bargain. In 2004 John Rhodes stated that the cost of producing breeder queens is high but the returns to those who indulge in such activities are low. In 2006 the AHBIC stock improvement program agreed on a price of $500 for an AI queen, but over time this has been reduced to $250 for current members of the scheme.

The results from the auction on the day of the seminar provided some interesting figures. A total of 15 queens were offered, belonging to three distinct lines. The top price was $650 paid by Terry Brown. The lowest price was $300, with the average price of $415. The average for the Marla line was $430, for the Superior Australian line $360 and for the Steve Park line $455.

My take on the day can be summed up as follows:

1. Beekeepers find it hard to value a well bred, genetically superior queen
2. It is unlikely that there will ever be an institutionalised bee breeding scheme in Australia again, this model is too expensive.
3. Some degree of technical coordination and management between the current privately run bee breeding schemes would greatly improve the situation in Australia.
4. Education of beekeepers is vital if they are to understand the cost of producing genetically superior stock and there value.
5. The current $250 for breeder queens is not a fair price if it is to reflect the expertise and time that goes into producing it. If anything, the average auction price of $400 + per breeder queen is more realistic.
6. Without a realistic financial return for the effort that goes into producing breeder queens, the current and future programs will die.
7. All programs rely very heavily on a core group of enthusiastic individuals who are willing to do a lot of the work for the love of it. How do we support this enthusiasm?

I'll leave the final words to Gretchen Wheen, as quoted in the ABK over six years ago:

"*It's time beekeepers were honest about a fair price for quality stock, i.e. quality of queens, breeder or untested. DO THE SUMS: Expect quality, but be prepared to pay accordingly. Be realistic. A quality job is always respected and this goes not only for the queen breeding sector*.

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2013 CONFERENCE














MERIMBULA

Photographer: Jack Schick

DR JOHN RHODES RECEIVES THE GOODACRE MEMORIAL AWARD

The Goodacre Memorial Award was created to perpetuate the memory of the late Bill Goodacre. Bill provided 35 years of meritorious service to the beekeeping industry during his employ with the NSW Department of Agriculture. The award has historically been recognised as the peak national award bestowed upon individuals who have equally provided significant service to the Australian beekeeping industry.

Dr John Rhodes is a well deserving recipient of the Goodacre Memorial Award.

John has been in the beekeeping industry for all of his working life, including forty years of service in the Queensland and New South Wales Department of Primary Industries (DPI). In 1962 John, who already had some years of beekeeping experience, was employed by Qld DPI as a 'cadet' apiary officer. By 1976 John had risen through the ranks to become the Senior Apicultural Officer. He held this position in the Qld DPI up until 1991 when he took a redundancy.

During his time in Queensland John travelled extensively for the beekeeping industry. This included study trips to the United States of America, United Kingdom, Austria, Germany, New Zealand, Thailand and Papua New Guinea. He also travelled extensively within Australia particularly into Northern Queensland and the Torres Strait Islands.

Some of John's achievements while working for Qld DPI include:

- Rewriting the Queensland Apiaries Act and Regulations in 1979
- Instrumental in forming the Australian Queen Bee Breeders Association in 1985
- Part of the organising committee of the second Australian International Bee Congress held on the Gold Coast in 1988
- Developed a monitoring program for exotic bee diseases in 1986
- Involved in updating Qld DPI publication on Honey Flora in 1987
- Appointed convenor of the Australian Horticultural Corporation working party to develop the Exotic Disease in Honey Bee Bill and contingency manuals for the control of seven exotic honey bee diseases in 1987
- Writing the first Ausvet Plan for honey bees.
- Developed the Green Paper on the Apiaries Act for Qld in 1990.

John then headed out to try commercial queen breeding. This venture did not work out due to a number of reasons including a series of poor seasons but anyone who knows John would recognise he is no sales man or self promoter. Prior to joining NSW Agriculture, John was still involved with studies for the good of the industry, including a project for the Rural Industries Research and Development Corporation (RIRDC) in conjunction with the Qld DPI on the Floral Resources of Value to the Queensland Beekeeping Industry.

John joined the NSW DPI on the 1 April 1997 where he took up the position of Apiary Officer at Tamworth. John remained a Queenslander throughout his employment with NSW DPI travelling between Tamworth and his family in Queensland on the Sunshine Coast on a regular basis. John lost no time in successfully applying for and involving himself in a number of major research projects that eventually created quite significant international interest. John remained working at Tamworth until his retirement at the beginning of July 2008.

One of the most significant and notable of John's projects was his investigation into what influenced the quality of commercially produced queen bees. This is an issue that is of major concern to commercial beekeepers. Some of this research was conducted to a back ground of sceptics on the value of such work. Factors such as the age of the queen at introduction to a production hive and her early performance success, the period for which the queen is receptive to mating, the effect of disease levels on queen survival, the impact of the drone fertility and factors affecting drone fertility including age, genetics, nutrition and sperm number, volume and viability were examined. This work was ground breaking creating significant international interest and has resulted in positive changes to the industry.

His study on the age of the queen at introduction to a production hive and their survival was published in Apidologie in 2004. It was also published by RIRDC "*Successful introduction and performance of queen bees in a commercial apiary*".

Some commercial queen bee breeders now advertise that queen bees are sold at an older age reflecting the finding of John's work.

Other work John was heavily involved with while with NSW DPI included:

- The management of AFB disease
- Development of competency standards for the bee industry on queen bee rearing and artificial insemination
- Quality assurance standards for the Australian bee industry.

Over the 1999-2000 season John conducted a research project that demonstrated honey bee pollination was responsible for a 16% increase in cotton yields which at the time equated to an increase of $500 per hectare to the cotton grower. Flowering cotton crops are considered a threat to honey bees due to the use of harsh insecticides. However with the reduction in the use of insecticides, integrated pest management systems and the positive impact of the presence of honey bees demonstrated by John's research, it is feasible that cotton growers will hire bee hives to pollinate cotton crops in the not too distant future. As a result of John's research finding the University of Western Sydney took on a PhD student to investigate this field of study further. His research with cotton led John to initiate meetings between the cotton industry and beekeepers to find pathways for both parties to work together. A web page was developed with the Cotton Research Corporation to allow cotton growers to become better informed about insecticide use to minimise any harm to honey bees in the area.

Two Primefacts of immense value to both the beekeeping industry and farmers on the impact of pesticides on honey bees were researched over quite a considerable time by John. They are available on the NSW DPI website with the titles "*Pesticides a guide to their effects on honey bees*" and "*Pesticides – reducing damage to honey bees*". John became very interested in the management of small hive beetles and worked tirelessly on the approval for diatomaceous earth to be used to help control this major pest.

On top of all this John was involved with all the activities that one participates in as an extension officer for NSW DPI. Some of these included co-authoring the NSW DPI Agskills book on Beekeeping; the writing of information sheets on a range of topics (Primefacts); presentations at numerous field days, meetings and conferences; co-presenting departmental short courses in beekeeping; plus answering a multitude of mixed and varied enquiries over his 11 years while working in NSW not to mention his previous years in Qld.

In addition to John's always meticulous approach to each project that he undertook, the hallmark of John's work throughout his career has been his outstanding ability to convey to his audience, through the written word, the results of his research and other work. His command of descriptive language reveals the keen, analytical mind of a competent investigator, some what at odds with his quiet, intelligent demeanour.

Throughout John's career his academic achievements are notable graduating with a Bachelor of Science in Entomology from the University of Queensland in 1969. Always keen to further his knowledge and skills regarding bees he completed a Master of Science in Entomology at the same university in 1982 and when most are ready to relax and retire John's quest for knowledge continued completing his PhD in 2011, well after he had officially retired. The title of his thesis *Quality of commercially reared queen and drone honey bees in Eastern Australia*, summed up John's particular passion and dedication for this notable area of study.

Many of John's major achievements have been mentioned but this was only part of John's contribution to the Australian beekeeping industry. John was a very humble and quiet man who was never about selling himself or his achievements even though these were well worth publicising. Because he was so quiet he was affectionately nick named Rowdy by many beekeepers in the Tamworth region.

No. 16 May 2013
13/033

Australian Government
Rural Industries Research and Development Corporation

Honeybee R&D News

Chairman's Foreword

Michael Hornitzky, Chairman, RIRDC Honeybee Advisory Committee

The Honeybee Advisory Committee (HAC) encourages industry members to attend the Marcus Oldham College Rural Leadership course (for course details see http://www.marcusoldham.vic.edu.au/events/rural-leadership-2013). This course seeks to develop the skills and knowledge of participants to enable them to undertake a leadership role in industry. The closing date for applications to the College is 24th May. If you would like to apply for a scholarship from the Honeybee Program to cover the $2,500 course fee, please also send a copy of your application to RIRDC's Margie Heath. One scholarship each year is usually funded.

The Honeybee Program funded American Foulbrood (AFB) Future Management Workshop was held in Canberra on the 14th and 15th March. Attended by industry, State Departments of Primary Industries and scientists, a consensus was reached that a national approach for the control of AFB should be developed. To this end an AFB steering committee consisting of Craig Klinger (AHBIC), Ian Zadow (AHBIC) and Sam Malfroy (PHA) will be preparing a Honeybee and Pollination Biosecurity Business Plan which will address the full range of biosecurity issues including a national plan to control AFB.

On the 23rd March the Wheen Bee Foundation Seminar and Queen Bee Auction was held at the University of Western Sydney, Richmond. The event was held as a tribute to Gretchen Wheen and the theme of the day was *Honeybee Stock Improvement: The State of Play and Future Directions.* Bee breeding experts gave presentations on a range of topics including the case for stock improvement, the stock improvement programs in Western Australia, New Zealand and the program run by AHBIC as well as a history of the breeding stock held by the Wheen Bee Foundation. The presentations were followed by a panel discussion dealing with the stock improvement issue and queen bee auction. It became apparent that the best way to progress bee breeding in Australia is to develop a strategic direction of bee breeding for the Australian beekeeping industry. To facilitate this Ben Oldroyd is organizing a workshop in June, to be funded by the Honeybee Program, to develop a business plan to develop and promote stock improvement in Australia.

The *Value Adding to Honey* project is nearing completion. The primary objective of this project was to assist the Australian honey industry maximize its return on investment by sale of honeys on the basis of their highest-value properties. The next step to realize the potential of this work is a workshop to be held in August to discuss, with industry, how they can benefit from the project findings.

A recently completed report: *"A strategy to address concerns of countries that import Australian honeybees"* by Michael Clarke has been provided to AHBIC and Department of Agriculture Fisheries and Forestry. This project was funded by industry funds under the Asian Honeybee Transition to Management Program.

Full research proposals were requested for three projects for funding in 2013/2014 and were considered at the (HAC) meeting in Melbourne on the 12th April. Of these three projects two were recommended for funding:

Project 1: *"Upgrading knowledge on pathogens (particularly viruses) of Australian honeybees"* will be undertaken by John Roberts, CSIRO. The last survey of honeybee viruses in Australia was carried out in 1987. Since then virus detection techniques have improved and more viruses have been discovered. This project will fill a large gap of knowledge about honeybee pathogens in Australia which may help facilitate honeybee and bee product exports.

Current R&D Committee

Dr Michael Hornitzky (Chair)	(02) 4651 2729
Prof. Ben Oldroyd	(02) 9351 7501
Prof. Boris Baer	(08) 6488 4495
Ben Hooper	0407 820 474
Senior Research Manager	
Dr Dave Alden	(02) 6271 4128
Program Coordinator	
Margaret Heath	(02) 6271 4145

RIRDC Honeybee R&D News is the official newsletter of the Rural Industries Research and Development Corporation Honeybee Program
RIRDC · PO Box 4776, Kingston ACT 2604 · P 02 6271 4100 · F 02 6271 4199 · E rirdc@rirdc.gov.au · W www.rirdc.gov.au

Chairman's Foreword continued

Project 2: *"Production of videos on best practice for the beekeeping industry"* to be undertaken Philip McLellan and Bruce White to educate established and new beekeepers on a range of topics including "Construction and repair of beehives", 'Requeen a honeybee colony" and "Providing a bee pollination service".

Currently the HAC consists of four members and the Senior Research Manager. Three members have a primarily scientific background and one member has a primarily industry background. AHBIC has requested that an additional industry member be appointed. Those with an industry background interested in applying to be a member of the committee must apply by 31 July. An application form is available from, and must be submitted to, RIRDC's Margie Heath (02 6271 4145).

There is considerable concern about the impact of insecticides, especially the neonicotinoids, on bee health. Industry has requested that HAC support funding to determine any effects that neonicotinoids might have on honeybees foraging on plants that have been seed coated prior to planting. The APVMA is currently reviewing the scientific literature on this subject and the HAC is awaiting the outcome of this review before considering funding research in this area.

Other items included in this newsletter are:

1. Bee Friendly; and
2. Project Summary: Development of a pollen substitute meeting the nutritional needs of honey bees

New RIRDC Honeybee-related Publications

Bee Friendly: Planting Guide for European Honeybees and Australian Native Pollinators

Publication No: 12-014
Author: Mark Leech
Published: 15 Jan 2013
$60.00 (320 pages) or free download

The Australian honeybee industry provides essential benefits to agricultural, horticultural and urban environments through managed and incidental pollination services. Planting bee forage for honeybee nutrition offers major benefits to the industry and society. This planting guide for bee forage describes planting choices from the backyard to the bush, right across the nation, and will assist with increasing available bee food. Individuals, gardeners, municipalities, government land management authorities and farmers can make a difference. Partnerships and innovation in urban environments and broad-scale vegetation management will effect a positive difference. Perennial pastures for semi-arid lands, biofuel plantations, carbon farming, biodiverse planting and revisiting existing plantation development can all deliver significant regional benefits. This guide gives ideas and choices of species to bring about improved outcomes for honeybees and the Australian pollen - and nectar - using fauna, including mammals, insects and birds.

Project Summary: Development of a pollen substitute meeting the nutritional needs of honey bees

Publication No: 13-004
Author: Rob Manning, John Black
Published: 28 Feb 2013
Free download

Beekeepers are at the forefront of observing their bees in the environment and cues that affect them such as dearth periods between nectar flows which readily affects their main income from honey production, pollen production, queen bee production or pollination. Artificial supplements or substitutes for pollen are the only product that could help alleviate the reversal in bee population during periods of drought or constant wet weather and provide the solution (other than relocation) to the problem. Commercial beekeepers are interested in artificial feedstuffs for bees and that interest exists Australia-wide. The importance of strong colonies is critical for pollination and any improvement in colony population would cause a large and beneficial change because of honey bees' considerable worth to the Australian food industry via pollination.

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SICK BEES

PART 15

An Improved Method for Nosema Sampling

by Randy Oliver - ScientificBeekeeping.com

In the previous articles in this series I showed how to use a microscope to view nosema spores and discussed from what part of the hive to take bee samples, and how researchers are interpreting spore counts. But spore counts don't tell us what we really need to know!

Author's Note

I'm hoping that the reader is benefitting from my digestion and summarization of current (and past) nosema research. There is a tremendous amount of information out there (much of it conflicting or confusing), but I'm trying my best to condense and simplify it into terms meaningful to Joe Beekeeper. The frustrating thing, though, is that it is clearly apparent that we still have a great deal more to learn about these parasites before anyone can make definitive recommendations as far as best management practices!

So my apologies in advance for the length and depth of this article. But I'm going someplace different, and feel that it would benefit the reader to follow the history and thought process that led to the conclusions that I reach at the end.

Samples from Within the Hive

Most researchers take bee samples for nosema testing from under the lid, or from an outside comb, since such samples are generally easier to take and presumably more consistent as far as bee age structure. The expectation also is that such a sample would be most representative of the colony infection as a whole, as opposed to samples from the entrance, in which spore counts are often sky high, or samples of nurse bees, in which counts are generally minimal. The assumption, of course, is that a "peripheral" sample would contain mostly mid-aged and older bees.

In early November, I had the pleasure of being visited by Dr. Dewey Caron, so I used the opportunity to put the above hypothesis to the test. We had experienced rainy weather and cold nights the two previous days, so the bees had not foraged nor broken cluster during that time. We went out to the bee yard and took samples of bees from the outermost portion of the cluster, from honey frames in the upper hive body (the bees were in fairly tight cluster, so I doubt that there had been much bee movement in the past two days).

As I illustrated in Figure 6 of my previous article, it is a normally a relatively simple matter to determine the "age" of the bees in a sample by seeing how much pollen is in their guts—it is generally assumed that only young bees (nurses) consume pollen. So we froze the bees and then spread them on a grid and crushed them to squash out their gut contents. As you can see in Figure 1, to our great surprise, the vast majority of bees in the samples from the three hives that we tested had guts full of pollen!

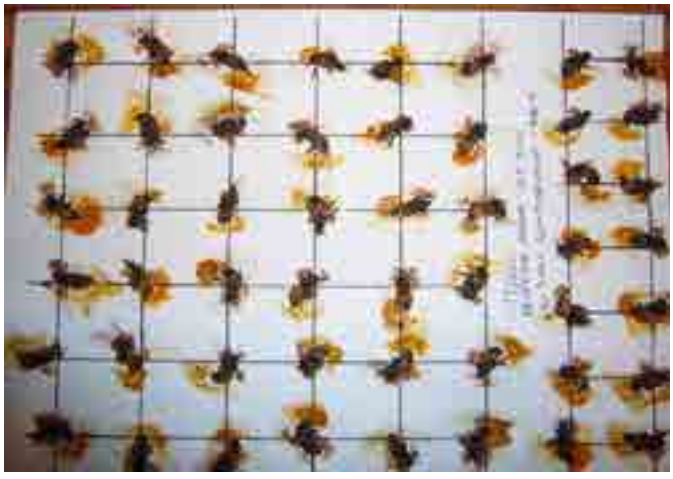

Figure 1. A sample of crushed bees from the periphery of the cluster (on an upper honey comb) after two days of confinement by cold weather in early November. Note that every single bee's gut was full of pollen (the orange stains), indicating that they were likely nurse bees, rather than older bees, and thus would be less likely to be infected by nosema.

We confirmed by microscopy that the orange coloration of the gut contents was indeed due to pollen grains. I have done similar squashes during summer, and again found substantial proportions of bees throughout the hive to have pollen in their guts, as opposed to bees in entrance samples, which rarely contain appreciable pollen. In the sample illustrated above, the extremely high proportion (100%) of bees containing pollen could possibly be due to the population turnover in November, when the forager bees fly off to die, leaving only young bees in the hive to winter (Mattila and Otis 2007). I have not yet confirmed this.

Practical application: So I'm not clear at this point whether these pollen-filled bees are chronologically old bees or not!

Another interesting finding that we made was that in a 50-bee subsample of one of the above samples, the spore count (which appeared to be N. ceranae), was about 100 spores in a field of view, indicating an infection level of about 20M. This high count in ostensibly young bees caught my attention, so I squashed individual bees one at a time—in the first six, only one of them contained an appreciable number of spores. Apparently, in the 50-bee sample, a few highly-infected bees skewed the spore count to that alarming level (Fig. 2). My point is that you should not allow any individual spore count to scare you!

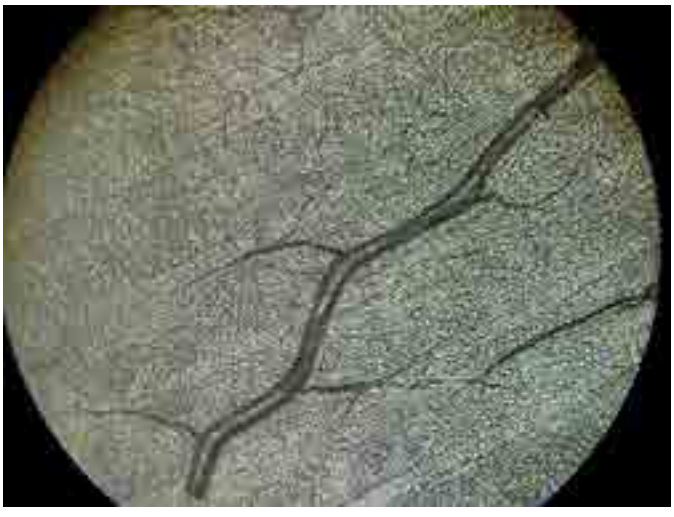

Figure 2. One highly-infected bee can really skew a spore count! This photo, taken at 400x, shows thousands of nosema spores packed into the Malpighian tubules (bee "kidneys"), which are running at an angle crossways. The treelike structure is a tracheal (breathing) tube. A bee infected to this degree could contain 500 million nosema spores!

Practical application: I would normally have been alarmed by a mean spore count of 20M in a sample of fifty young bees, but upon closer inspection, most of the bees in the subsample of 6 bees were not infected to any degree.

I have written extensively about varroa. Varroa is easy to monitor, and if one makes an effort to understand its well-documented biology and population dynamics, then it is a relatively straightforward

matter to make wise and effective management decisions for controlling its degree of damage to bee colonies. Unfortunately, we are nowhere near that state of confidence with N. ceranae. Worldwide data from actual field studies are so conflicting that no one can really make meaningful recommendations as to what level of infection, **based upon simple spore counts,** is economically tolerable. Add to that, there are potential down sides to treatment—first, fumagillin's expensive, it may have negative side effects upon bee health, may contaminate honey (and is not approved in many countries), and many beekeepers simply are adverse to adding one more danged treatment to their hives (Figure 3). I will discuss the above concerns, as well as the potential consequences (or lack thereof) of untreated nosema infection in later articles.

Practical application: I seriously question whether spore counts can be translated into meaningful treatment thresholds!

Figure 3. Let me warn you, that if you actually start sampling for nosema, it will give you much more to worry about! When we find high spore counts here at WishWeKnewWhatWeWereDoing Apiaries, my sons (Eric, on left, and Ian) and I worry about filling our almond pollination contracts.

Until recently, I pretty much blew off Nosema ceranae as not being much of an issue in my operation, despite finding spore counts in the millions or tens of millions, especially in spring. Our colonies have generally fared well, and I haven't noticed any strong correlation between colony strength and nosema counts. However, I'm a bit uneasy since spore counts have seemed to climb each year, and are higher this season than ever.

What most troubles me, though, is recent evidence that nosema is more of a problem in colony health and mortality than I have previously suspected—I will be covering this in subsequent articles in this series (I often am forced to choose which subject to cover first). So I'm in the same boat with the rest of you who are wondering how best to diagnose the degree of nosema infection in your operations, and whether treatment would be worthwhile.

Soundbite Science

We currently live in an age of information overload, largely due to the internet, with snippets of knowledge thrown at us faster then we can put them all together. This is a mixed blessing with scientific research, as sometimes quality is sacrificed in the race to be first to report some finding. Due to competition for limited funding, we are seeing a lot of "soundbite science" being published by grad students and post docs fighting to make a name for themselves, or faculty needing to "publish or perish."

But back in the day, the government subsidized the kind of painstaking, grinding, and detailed agricultural research seldom seen today. To see an example, download Dr. G.F. White's 1919 exhaustive 9-year study on nosema (Google Books "bulletin 780 nosema") undertaken after he discovered its presence in the U.S. —these guys with a government mandate were thorough! In this age of budget cutting and taxpayer support for giant agribusiness (less than 2% of USDA spending goes toward research these days), there is a strong case to be made for we beekeepers to encourage government funding of bee research.

Dr. White concluded:

"As a rule, colonies which in the spring of the year show less than 10 per cent of Nosema-infected bees gain in strength and the losses are not detected. This is often true also in cases where the infection is somewhat greater than 10 per cent. When the number of infected bees approaches 50 per cent the colonies become noticeably weakened and in many instances death takes place. When more than 50 per cent are infected they become weakened and usually die as a result of the infection. Generally speaking, therefore, it may be said that when a colony contains less than 10 per cent of Nosema-infected bees the prognosis is excellent; that when it contains more than 10 and less than 50 per cent the prognosis is unfavorable; and that when the number of Nosema-infected bees present approaches 100 per cent the prognosis is especially grave."

Pay attention: This prognosis is remarkably similar to that of Higes (2008)—that the tip point for colony health appears to occur when more than about 40% of the bees in the hive become infected (a 40% infection rate). The practical application is that spore counts may not be the best way to assess the impact of nosema infection upon colony health—it may be more important to determine the relative proportion of infected bees to healthy bees.

I will continue to return to Dr. White's findings in this series, as well as those by Dr. Mariano Higes and his collaborators in Spain, in which, by the way, there are about the same number of hives as in the entire contiguous US, in approximately 1/15th of the land area! What strikes me is the similarity in their conclusions, nearly a century apart, when they discovered, and then thoroughly investigated, nosema epidemiology and pathology in their respective countries!

Infection Rate

The proportion of infected bees in a hive is called the infection rate, and expressed as a percentage—if a quarter of the bees are infected, that would be a 25% infection rate. Remember, a colony of bees is a superorganism, with each individual bee somewhat akin to a single cell of your own body (of which millions die every day). A colony can easily handle the loss of a certain percentage of sick bees every day, especially if those bees are aged, and nosema infection is generally worse in the oldest bees (since aging allows more cycles of parasite reproduction within the bee).

Dr. White suggested that an average of about 10-15% infected bees in a hive is "normal." The rate in sick hives could go up to 100%! He found that the infection rate would often go to 70% in experimentally-inoculated hives.

So let's digest this. If only, say, 5 percent of the bees in a hive were actually infected (and only seriously infected during their last days of foraging life), the overall nosema infection would have little impact upon the colony, as they would be quickly replaced by the 1500-2000 new bees emerging each day. However, if 50 percent of the bees were infected, then that is entirely another matter! During the spring and summer, their shortened lifespan could seriously affect the population dynamics of the hive, reining back its normal population growth and ability to forage. And during the winter, when bees must live to a ripe old age in order for the cluster to survive until spring, a high nosema infection rate could lead to colony collapse. I will return to the details of this subject in an upcoming article.

Practical application: Nosema can be a serious problem during either winter or spring, should a high proportion of bees in the hive become infected. The infection rate is a more accurate measure of the seriousness of the infection than is a mean spore count, since a high spore count may merely reflect that one or a few highly-infected bees happened to be in the sample.

So why have we been focusing on spore counts, rather than infection rate? I just got off the phone with a large commercial queen producer who has closely tracked N. ceranae levels (and spent a large amount of money on treatments). He has nearly given up on looking at spore counts, since they simply did not appear to correlate to any significant degree with colony health and production. Ditto for my operation, and for much of the worldwide research. I feel that it is time for us to move beyond spore counts!

I'm not the only one who feels this way. Dr. Higes team's recently entreated: "There is an urgent need … to decide on the reliability of standard methods to establish the levels of infection, a measure that

will be necessary to standardize procedures to accurately, reliably and meaningfully quantify the degree of Nosema infection in honey bees" (Meana 2010). It's time for a paradigm shift of moving away from sample means, and to go back to looking at the actual percentage of infected individual bees.

So How Did We Get on the Wrong Track?
Good question! I've always wondered how the 10-bee sample size figure ever got engraved in stone. It appears that it evolved from a statement by Dr. White himself, who wrote that "Ten bees from a colony constitute a satisfactory sample as a rule."

So 10 bees became the typical sample size from the early 1900's until we found out that we had N. ceranae. At that point, I was misled by "discovery sampling" statistics (Oliver 2008), since I thought that I needed to "discover" whether I had nosema in my operation, and thus recommended taking samples of at least 50 bees. This number (or even 100) is commonly used by researchers these days, since it also helps to minimize the influence of any single highly-infected bee upon the mean spore count.

Unfortunately, many of us became seduced by the attractiveness of thinking that the number of spores counted in a hemacytometer actually reflected the seriousness of an N. ceranae infection in a hive. 50-bee samples are good for discovery, but in truth, once you've discovered that you have N. ceranae in your operation, they actually can be misleading. Here's the funny thing: Dr. White's 10-bee samples are actually a better assessment of the seriousness of a nosema infection! But when he recommended 10-bee samples, he wasn't talking about counting spores! What he actually recommended was:

"When a diagnosis of the disease is being made in practical apiculture, therefore, considerable caution should be observed. A colony showing only a small percentage of Nosema-infected bees and not other evidence of the disease is practically healthy. In reporting the presence of infection it would seem well to indicate in some way the amount of infection present. The percentage of infected bees among those examined might be given."

This is a major point! Nosema infection at the colony level is not about spore counts—rather, it is about the *percentage* of the bees that are infected!

So why the heck did most everyone go from determining the infection rate to counting spores? Well, several researchers found that, at least with Nosema apis, spore counts of a 10-bee sample roughly correlated with infection rate. Then some Canadian scientists (Fingler 1982) found that a 25-bee sample was an even more "reliable method of assessing the degree to which colonies are infected by nosema." But again, those researchers clearly understood that spore counts were merely crude proxies for the actual rate of infection. I doubt that beekeepers (or even many subsequent researchers) ever fully grasped that message.

So is a 10-bee sample enough? Look at it this way: since a single nosema-infected bee typically contains more than 10M spores (Forsgren 2010; Smart 2011), then having even one single infected bee in a 10-bee sample (indicating ≥ than a 10% infection rate) would put the mean spore count above 1M—the typical rule of thumb for treatment. So what's the chance of hitting at least one infected bee in a 10-bee sample.

In order to answer this question, we need to use probability theory, which was ironically, initially developed to help gamblers make better decisions in games of chance. As an aside, doesn't it seem funny that the ABF national convention is going to be in Las Vegas? I mean, commercial beekeepers already live their lives gambling their life savings on the weather, the price of honey, varroa treatments, and honey flows, and are going to be in Las Vegas just before the big roulette wheel stops spinning and tells them whether they'll hit the jackpot in the almonds the next month!

But I digress. Probability theory can be used to predict, for example, the chance of being dealt two aces in a hand of five cards (4/52 x 3/51 = 1/221, or less than half of one percent probability). Bee samples can be looked in a similar manner, since when you are squashing bee guts, nosema infections generally show as either positive (tons of spores) or negative (zero to a very few spores)—sort of a sick/not sick litmus test. So I did some homework with probability tables, and was able to answer my question about hitting 1 infected bee out of 10 (Figure 4).

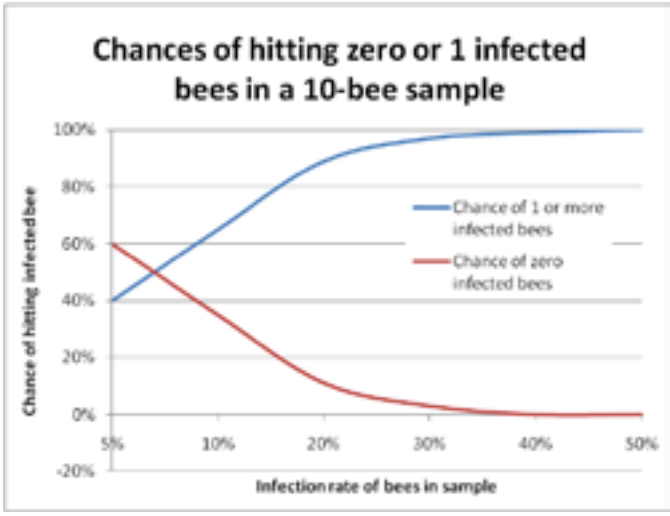

Figure 4. In this graph the bottom scale is the actual infection rate of the colony. The blue line plots the chance of hitting at least one infected bee in a sample of 10 bees. The red line indicates "negatives," in which you would not find a single infected bee. You can see that it's almost impossible to miss getting at least one infected bee in a 10-bee sample if the colony infection rate is over 30%.

So the 1M spore rule of thumb is very conservative, meaning that you certainly wouldn't miss a nosema infection, but also means that you'd often wind up feeding fumagillin to apiaries that in actuality were dealing just fine with relatively "safe" infection rates. In the case of N. ceranae, in which individual bee spore counts may exceed 100M, having even a single infected bee would result in a mean spore count of 10M, which might scare the pants off you, despite the substantial likelihood that the colony was only infected at a minimal rate!

A recent study by Traver and Fell (2011a) supports the above interpretation—they found that colonies that tested low for nosema DNA exhibited zero spores in 10-bee samples about a third of the time, whereas samples from colonies with "high-level" infections seldom were free of spores. So it appears to me that the good old 10-bee spore count works fairly well as a crude but conservative proxy for the actual infection rate, with spore counts stepping up sharply with each additional infected bee in the sample. However, it should not be interpreted as any sort of linear measure of the degree of infection. It worked, but it likely led to too many unnecessary treatments.

The problem with spore counts: spore counts from a pooled homogenate of many bees are more or less a measure of the reproductive success of nosema in a relatively few bees. The infection rate (percentage of bees actually infected) is a much better measure of the actual impact of nosema upon colony health.

How to Determine the Colony Infection Rate
OK, I hope that I've convinced you now that it's time to move away from counting spores—but that certainly doesn't mean that you should throw away that shiny new microscope that I earlier convinced you to buy!

You may have wondered why, when I was squashing bees in my kitchen with Dr. Caron, that I stopped after crushing only six bees. Well, in truth, squashing individual bees is time consuming, and my gut feeling was that I would have hit more than one infected bee in the sample should the actual infection rate have been high.

Of course, my readers should know that I'm not about publishing "gut feelings." So, being the curious sort of guy, I bit the bullet and plowed into an investigation to see whether I could come up with some sort of shortcut for determining a colony's infection rate without having to individually squash a whole bunch of bees. I spent some serious time working out the math (much to my long-suffering wife's dismay, such as when she groggily walked into the kitchen first thing in the morning, and was immediately barraged by me excitedly showing her the results of some probability calculations that I've been working on since before dawn).

My personal issues aside, what I found was that the problem with extrapolating from samples is that you want to avoid false negatives

(missing a serious infection; easy to do with samples of only a few bees), while at the same time not misdiagnosing false positives (erroneously concluding that a healthy hive is seriously infected—which is a problem with the mean (average) spore count from of a pooled bee sample).

Scientists just love hard, accurate figures out to the third decimal place, with 99% confidence levels. But in reality, there is rarely that kind of certainty when you're dealing with any data derived from bee samples! And there's a lot of elbow room when making management decisions. So first, let's perform a reality check. Suppose that you have a colony that is infected at the 40% rate, and that the infected bees are evenly distributed in the hive. And then suppose that you take a sample of 100 bees from that colony.

You'd expect that the sample would contain 40 infected bees (40 per 100 = 40%). And the average sample would indeed contain 40 bees. But no single sample is an average! Any single sample has only an 8% chance of containing exactly 40 infected bees!

That's fine, you say—all that I really care about is whether that sample contains at least 40 bees. The chance of that happening with a single sample of 100 bees is still only 54%! You would still get 46% false negatives. A 46% chance at losing a bet isn't bad if you're betting five bucks in Las Vegas. But it's pretty poor odds if you're risking your bee operation on it!

Motivational message: For the arithmetically-challenged among you whose eyes are starting to glaze over because I'm using three-syllable words and talking about math, please hang in there!

So What If I count the Number of Infected Bees Out of 10?
You'd sure think that this would make sense! After all, Dr. White recommended this method. But surprisingly, it's not that accurate. Let's look at the probabilities. Suppose that a colony is actually infected at the 40% rate, and that you took a perfectly representative sample of 10 bees. You'd still have only a 25% chance of finding exactly 4 infected bees (but a 67% chance of hitting between 3 and 5 bees). So counting the number of infected bees in a 10-bee sample will give you only a very rough assessment of the actual infection rate.

But here's a big surprise--counter intuitively, as the sample size goes down, your chances of missing that infection actually go down too! For that same 40% infected colony, here are the probabilities of underestimating the infection rate (Table 1):

Sample size	Probability of getting fewer than 40% infected bees in the sample
100	46% (46 times out of 100)
10	38%
5	34%

Table 1. Probabilities of underestimating the infection rate of a colony in which 40 out of 100 bees were actually infected, by sample size (number of bees in the sample), assuming a perfectly representative sample.

I'm hoping that you're catching my drift here—that we may be able to streamline the process of estimating the degree to which a colony is infected, by utilizing 5-bee samples.

An Assessment of Our Situation
So let's review where we stand with regard to nosema sampling methods and interpretation:

1. We want to avoid dangerous false negatives, since they might lead you to not treat a truly sick apiary.
2. However, you (and your bees) could live with false positives, since the worst that you'd do is to give unnecessary treatments.
3. But you're still a penny pinching beekeeper who doesn't want to waste money (or you don't want to use treatments for other reasons).
4. Sending a sample of 10 bees to the lab for a spore count has an unacceptably high rate of false positives—at least two-thirds of the time.
5. Spore counts of even 25-bee samples of either house or forager bees are still unreliable predictors of colony health (Meana 2010).
6. And even individually squashing 10 bees one at a time will underestimate a serious 40% infection rate over a third of the time!

So what to do? I'm not telling you all this merely to frustrate you—I and my sons live off the income from our bees, so I've got a vested interest in finding a way out of this quandary! Researchers worldwide are coming to the conclusion that simple spore counts generally have little correlation with observed colony health status. What you really need to know is one of two things—are your bees in the "safe" zone (under 20% infected) or in the danger zone (over 40% infected). And what you don't want to do is to spend all day squashing bees one at a time and viewing their guts under a scope. Are we all agreed on the above?

So I got out the probability tables, a pocket calculator, found a handy online binomial distribution calculator (http://stattrek.com/Tables/Binomial.aspx), and started playing with the numbers. I found that for our purposes of differentiating between a benign nosema prevalence and serious infection,that the sweet spot for sample sizes lies in the range of 5-10 bees (sort of a Goldilocks "not too many, but not too few"). See for yourself (Fig. 5):

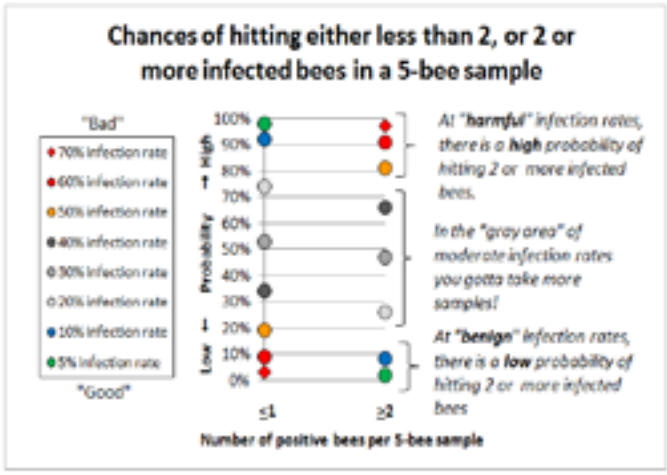

Figure 5. This graph is for 5-bee samples. Compare identical colored markers between the left column and the right column—the greater the vertical spread, the better the discrimination between infection rates. Note that at "benign" infection rates (green and blue dots) you'd nearly always hit either zero or 1 infected bee, but rarely 2 or more. At dangerous infection rates (red markers) the reverse holds true—you'd rarely hit zero infected bees (not shown), and seldom even 1, but nearly always at least 2 positive bees if the colony infection rate exceeded 60%. I will post this article to ScientificBeekeeping.com for handy reference.

One HUGE Assumption
All of these probabilities are contingent upon your taking a representative sample that reflects the overall infection rate of the hive. Would this be the case in real life?

Would 5-bee samples give consistent results? I didn't know, so l decided to put it to the test the day before I sent this article off to press!

Validation of the Method
The "boys" and I were treating colonies with an oxalic acid dribble in November (bees were still flying most days), so I took samples of bees from the weakest hives in each yard, and later processed subsamples of 5 bees at a time. Here are the results (Table 2):

Table 2. Results of bee samples from 10 weak colonies in the fall. I sub sampled each sample, 5 bees at a time, with each bee being individually squashed (total of 205 bees), and rated each bee as to whether it was positive for nosema spores or not. I stopped counting after two groups of 5 if I hadn't yet detected any nosema. Out of 31 pairs of 5-bee samples (the lower figures in column 2), in only 2 cases out of 31 would I have underestimated the actual colony infection rate (by not hitting either 2 positive bees in 5, or 3 in 10). Note how consistently the paired 10-bee samples reflected the overall infection rate

Colony number	Number of nosema-positive bees per 5-bee sample, and (below) per 10-bee sample (by subsequent pairs)	Overall infection rate of sampled bees	Notes
1	0/5, 0/5 0/10	0/10 = **0%**	Appeared to be free of nosema.
2	0/5, 0/5 0/10	0/10 = **0%**	Appeared to be free of nosema.
3	2/5, 1/5, 2/5, 1/5, 2/5, 4/5, 0/5 3/10, 3/10, 3/10, 3/10, 6/10, 4/10	12/35 = **34%**	Only 1 zero in the 5-bee samples. Note the consistency of the 10-bee samples.
4	0/5, 0/5 0/10	0/10 = **0%**	Appeared to be free of nosema.
5	3/5, 2/5, 1/5, 3/5, 1/5, 1/5 5/10, 3/10, 4/10, 4/10, 2/10	11/30 = **37%**	No zeroes. Only the last pair of 1/5's would have missed the infection.
6	4/5, 0/5, 3/5, 5/5, 2/5 4/10, 3/10,8/10,7/10	14/25 = **56%**	The 10-bee samples certainly picked up the infection! This colony had the most intensely infected bees, plus a serious amoeba infection.
7	0/5, 0/5 0/10	0/10 = **0%**	Appeared to be free of nosema.
8	0/5, 1/5, 0/5, 0/5, 1/5 1/10, 1/10/ 0/10, 1/10	2/25 = **<1%**	Very consistent results
9	3/5, 0/5, 3/5, 1/5, 0/5 3/10, 3/10, 4/10, 1/10	7/25 = **28%**	2 bees were only slightly infected. One 10-bee sample underestimated.
10	2/5, 2/5, 3/5, 0/5, 2/5 4/10, 5/10, 3/10, 2/10	9/25 = **36%**	2 bees were only slightly infected. The last 2/10 missed, but the 2/5 would have flagged the infection.

Practical application: I found the above reality check instructive, to say the least! In fact, I could say that I learned more about the degree of nosema infection in my operation in three hours of bee squashing than I'd learned in the last four years of counting spores! I doubt that I will ever do another spore count.

I love this method! For one, I learned that nosema was only associated with half of my weakest hives, so I can now sleep a bit better. On the other hand, half of those weak hives did have high nosema levels, so I need to address this (spot treatment?). I'm now eager to go sample some strong colonies. What is also apparent is that the method worked remarkably well! It's not perfect, but it appears that I'd rarely miss an infection if I processed two samples of 5 bees for each tested hive. And the method readily picked out the really sick hive! Clearly, this is only a preliminary test of the procedure, and needs to be repeated with a lot more hives, but the apparent accuracy of the method is very encouraging to me.

The only remaining problem is that most beekeepers will choke at the thought of how much time it would take them to squash and microscopically view 10 bees out of each sampled hive. And that leads us to:

Sequential Sampling

Think of this Quick Squash method as similar to doing an alcohol wash of 300 bees. If I only see 1 mite, no worries for a while, as mite populations take about a month to double. If I see more than 6 mites, I treat. In between, I make a note to check back soon. It's a similar case for nosema sampling (although it may take less time for the infection rate to double).

I'm immensely grateful to Dr. Jose Villa of the Baton Rouge Bee Lab for bringing to my attention that I was reinventing the wheel—this sort of decision making process based upon small sample sizes already has a fancy name: it's called "sequential sampling," and was develped for quality control inspections during World War II. Furthermore, Dr. Villa dug into the library and forwarded me existing "Decision Tables" for tracheal mite sampling produced by Tomasko (1993) and Frazier (2000). They exactly fit the bill for what I was crudely trying to work out!

Sequential sampling is all about the tradeoff between tedium (the number of bees that you need to squash and view) and confidence (the error rate which you are willing to accept). And it appears that for our purposes I estimated the minimum number of bees to sample right on the nose!

So here's the gist (backed by some complex math) for the following parameters. Given that you want to decide whether about 10% or fewer of the bees in the population are infected (the "tolerable" level), or if the rate is above the 30-40% range ("intolerable"), and are willing to allow an error rate of 20% for overestimating ("false positives"), but only a 10% limit for underestimating a serious infection (I'm intentionally avoiding most of the associated mathematical jargon). The cutoffs are:

Practical application: it appears that in order to make a decision whether to treat or not, that a couple of 5-bee samples should be adequate, interpreted as follows:

0 positive bees out of 5, or no more than 1 positive out of 10 indicates ≤ 10% infection

3 positive bees out of 5, or at least 4 positives out of 10 indicates ≥ 30% infection

Any number of positive bees lying between these cutoffs (e.g., 2 bees out of 5, or 3 out of 10) suggest an infection level that lies in the gray zone, but I doubt that going beyond a 10-bee sample is worth the effort—I'd just move on to the next sample.

So I've got us down to 10-bee samples. But even so, I must advise you that nosema infection appears to exist in "pockets" of bees in the hive, so any single small sample is inadequate for making an apiary-level decision (Botias 2011). It's obvious that what is needed is a quick method for processing samples of 10 bees at a time!

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

NSW DEPARTMENT OF PRIMARY INDUSTRIES BIOSECURITY COMPLIANCE APIARY - OPERATIONAL REPORT

FOR NSW APIARISTS' ASSOCIATION ANNUAL CONFERENCE - Merimbula 24 MAY 2013

Mr Craig Klinger, President of the NSW Apiarists' Association and members of the executive, I thank you for inviting me to present the Biosecurity Compliance Apiary Operational Report.

Biosecurity compliance structure within NSW Department of Primary Industries for apiaries
The Biosecurity Compliance services to beekeepers are provided through the Biosecurity Compliance Branch with Andrew Sanger as its Director. Andrew is responsible for the management of the Biosecurity Compliance Officers.

My position is Regulatory Specialist, Apiaries. I am responsible for coordinating services delivered to beekeepers via the Senior Inspectors who supervise the Biosecurity Compliance Officers.

There are four Senior Inspectors located at Richmond, Yanco, Coffs Harbour and Goulburn respectively. They have responsibilities for management of their staff and activities within their own zones.

New appointments under the Apiaries Act 1985
Kathy Goulding, Regulatory Officer, Wollongbar was appointed as an apiary inspector under the Apiaries Act 1985 on the 4 June 2012.

Mick Thompson, Regulatory Officer, Richmond was appointed as an apiary inspector under the Apiaries Act 1985 during March 2013.

Since the last conference two apiary inspectors have left the Department and they were Paul Anderson at Goulburn and Rick Jennings at Bega.

Biosecurity compliance officers
There are two units in the Biosecurity Compliance Branch – the Animal and Plant Regulatory Operations unit and the Cattle Tick unit. Animal and Plant Regulatory Officers are multi-skilled inspectors and have a variety of regulatory duties to perform, including animal health investigations, plant health investigations and market access services, bee duties (including bee health investigations, nuisance bee investigations, export certification) and emergency management activities.

NSW Primary Industries – Biosecurity NSW currently has 22 Compliance Officers within the Animal and Plant Regulatory Operations unit, of which 16 are gazetted apiary inspectors who regularly work with bees. Several other inspectors are gazetted but have been removed from active bee work due to having experienced allergic reactions to bee venom. See last page of this report for a current list of apiary inspectors.

Services provided by the regulatory program

- **export certification**

We conduct inspections of live bees on behalf of the Australian Quarantine and Inspection Service (AQIS).

Export destinations this season included Canada, Japan, Jordan and Libya

From June 2012 to April 2013, 10 inspections have been conducted which involved 15 hours of inspection time.

The Exporter is charged for this inspection service including any laboratory tests and freight charges for the submission of samples to the labs.

- **nuisance bee investigations**

We investigate written complaints about bees creating a public nuisance, a threat to public health or safety and bees interfering with the drying of fruit.

Some reports submitted referred to feral colonies or bees in wall cavities. These complaints do not constitute a nuisance bee complaint under the Apiaries Act. In relation to the Act, bees have to be hived and under some form of management.

A local beekeeper and/or a registered pest controller should be contacted if swarms and/or feral colonies are a problem.

Since June 2012 to April 2013 there have been a total of 17 written reports submitted. A decrease from the previous year.

Investigating nuisance bee complaints can be difficult due to language barriers and the emotional aspect both from the complainant and the beekeeper's sides.
The investigating inspector attempts to contact the beekeeper in all nuisance bee investigations as well as to speak with the neighbours.

Sometimes no-one is prepared to talk to the inspectors and accept responsibility for the beehives, or no contact details can be found for the hives under investigation. Sometimes the beekeepers are absent – e.g. overseas - for extended periods.

Where, after investigation of the complaint, we are satisfied that there is a danger to public health or safety, the Director General may issue prohibition orders even though the beekeeper hasn't been able to be contacted. However, this is the exception rather than the rule.

If a beekeeper has problems with the process as it applied in a particular case, the beekeeper can apply for an independent internal review, and then go to the Administrative Decisions Tribunal. The agency that may be able to mediate for both parties (complainant and the beekeeper) is the Community Justice Centre, phone 1800 990 777. Web site is www.cjc.nsw.gov.au. Both parties can contact them to discuss the mediation process.

- **issuing health certificates for interstate movement of apiary products and bees**

Since June 2012 to April 2013, 397 Health Certificates were issued, an increase from last period. For the same period, 22 Health Certificates have been received, a decrease from the last period.

Before an inspector issues a certificate the inspector must make due inquiry that they have no reason to doubt the accuracy of the beekeeper's declaration on the certificate. If it is necessary to confirm any information, the source apiary maybe inspected at the beekeeper's request and expense. Otherwise, certificates are normally issued free of charge. Inspectors will not sign blank certificates. Please do not wait until the last minute to request a certificate, as the inspector may not be available at short notice.

- **inspection of abandoned neglected or inadequately managed hives**

If you know of or become aware of any neglected, abandoned and/or diseased apiaries please contact me. Before an investigation is undertaken, a written 'Advice of Abandoned or Neglected Beehives' form is to be submitted. The form is available on the web site http://www.dpi.nsw.gov.au/agriculture/livestock/honey-bees or I can supply you with a form upon request.

Investigation of reported neglected apiaries is a more efficient way of using our limited resources and I encourage all beekeepers to report such sites to me for investigation.

From June 2012 to April 2013, 11 written advice reports had been received and investigated.

American Foulbrood (AFB) – On-line notification

A quick and easy method to notify NSW Department of Primary Industries (NSW DPI) of a confirmed or suspected case of AFB is to use the online form. See web page http://www.dpi.nsw.gov.au/agriculture/livestock. Click on the 'on-line' and a notification form will appear on screen.

Enter the details as required, click on the submit button and your notification is in the system. You will receive a confirmation that the information was submitted successfully.

It is important to notify AFB to ensure that the necessary actions are taken to control or eradicate the outbreak, trace the source if possible, and take measures to prevent further spread of the disease. The collection of data on the suspected AFB hot spots allows government resources to be used more efficiently.
Every new suspect or confirmed case is to be reported.

For further information about AFB notifications, contact Mick Rankmore, NSW DPI Regulatory Specialist Apiaries on office (02) 6741 8374, mobile 0402 078 963 or by email michael.rankmore@dpi.nsw/gov.au .

Contact with beekeepers with positive AFB lab reports
Some beekeepers who are competent in inspecting their own hives, in detecting AFB, who are willing to destroy or irradiate the infected hives and who do not seek compensation may not want an inspector to visit them.

However it is still important to obtain the location of the infected hives and the number of infected hives at those locations. In the event of a disease outbreak, beekeepers known to be at high risk are notified. Intelligence on the possible sources of the disease will be collected and collated for possible action to identify the source and to limit the potential for spread.

Letters and Factsheets have been posted to beekeepers that have never had a recorded history of AFB and other beekeepers that have not had a recorded history of AFB for an extended period of time. This is to provide an acknowledgement of the lab report notification and to provide information on what to do with regards to the eradication of the AFB from their apiaries. An 'American Foulbrood Traceback Beekeeper's Report' tracing form and an 'Advice of Abandoned or Neglected Beehives' form is also included.

AFB notification
From June 2012 to April 2013, 118 reports of AFB have been recorded. This represents 91 lab reports, 17 beekeeper notifications and 10 detections by Apiary Inspectors. This represents a total of 633 AFB hives.

AFB inspections
From June 2012 to April 2013 a total of 36 apiaries were visited representing a total of 1,244 hives. AFB was confirmed at 26 of these apiaries and 894 hives were inspected. 231 of those hives inspected were confirmed with AFB.

AFB tracing
Beekeepers are asked about the source of the infection and in some cases this has led to detections of AFB apiaries. In other cases there is no obvious source. Below are some examples of tracing.

1. Inverell. Advice from a commercial beekeeper about a suspected AFB infected apiary lead to the destruction by fire of the entire apiary and all associated hive material. Two commercial beekeepers that had hives within flight range of this apiary were advised.
2. A beekeeper stated that the most likely source was from a swarm he collected. The swarm may have originated from hives owned by another beekeeper that lives on the adjacent property. A letter and AFB Factsheets were posted to the other beekeeper with a request to inspect his hives for signs of AFB. An Advisory Officer contacted the first beekeeper and provided advice of AFB eradication.
3. A letter was posted to 7 registered beekeepers in the Port Macquarie Postcode advising them that AFB was reported in that area. They were advised to check all their hives for signs of AFB and report any suspected cases to NSW DPI.
4. 24 registered beekeepers in the 2470 postcode area sent a letter advising them of an AFB report and a request to inspect their hives and report any AFB cases to DPI
5. Likely source from hive purchased from another beekeeper.
6. Source not determined but thought to have originated from apiaries within the district owned by deceased beekeeper.
7. Source not determined.
8. Hive was a gift which may have been infected.
9. Likely source from second-hand hive material purchased in Queanbeyan in 1980
10. Likely source from captured swarms
11. Beekeeper suspects swarms as the source of the AFB
12. Beekeeper suspected positive source was from deceased beekeepers hives
13. Owner stated source unknown. May have been a feral colony.
14. Owner stated known AFB apiary as the source.

AFB figures
The percentage of beekeepers recorded with AFB for the period June 2012 to April 2013 was 1.9% of registered beekeepers (56 beekeepers from 3,000 registered beekeepers).

The percentage of infected hives recorded for the period June 2012 to April 2013 was 0.45% of registered hives (1,125 infected hives from 250,000 registered hives).

Beekeepers and registration
It is a legal requirement to be registered as a beekeeper with NSW Department of Primary Industries if you keep bees in NSW, unless you are exempt.

Notification of change of bee registration details

Please notify the clerical officers at Gloucester if you have changed any of your bee registration details, especially a change of mailing address. Contact details: NSW Department of Primary Industries, PO Box 108, Gloucester NSW 2422, Phone (02) 6558 1707.

Or you can use the Beekeeper registration change of details form. This form can be downloaded from the NSW Department of Primary Industries Honeybee web site.

Notification of sale or disposal of beehives –section 10(3)
Beekeepers are required to notify NSW Department of Primary Industries when they sell or dispose of their hives. This is usually achieved by the beekeeper submitting a Notice of sale or disposal of hives form. This form can be downloaded from the NSW Department of Primary Industries Honeybee website.

When these notifications are received the Clerical Officer at Gloucester notes the information on the Government Licensing System (GLS). If the notification indicates that the hives were disposed of to a person, the registration status of that person who received the hives is checked. If that person is not registered an Application to Register as a Beekeeper is posted to that person.

From June 2012 to April 2013, 45 notifications were received.

Responses to exotic disease or pest incursions
Such cases are investigated urgently, with the subsequent response directed by the Chief Veterinary Officer. Compliance officers are available to assist in the detection, control and eradication of exotic diseases and pests such as Varroa mite.

Suspected exotic pests or diseases can be reported by phoning the **Exotic Disease Hotline which is 1800 675 888.**

Breaches of the Apiaries Act
Written cautions
From June 2012 to April 2013 fifteen (15) official written cautions (warning letters) were sent to beekeepers. Breaches included failing to notify disease, keeping bees while unregistered, failing to identify brood boxes and introduce beehives into NSW without a health certificate**.**

Penalty infringement notices
From June 2012 to April 2013 no Penalty Notices were issued. At the time of writing this paper one beekeeper had been interviewed for failing to notify AFB and a penalty notice was considered due to the circumstances.

Prosecutions
No prosecutions have been undertaken under the Apiaries Act 1985 since the last conference.

Written Directions
From June 2012 to April 2013 thirty one (54) written directions were issued by apiary inspectors to beekeepers. The reasons why these were issued include the destruction or irradiation of AFB infected hive material, to display brood boxes with the beekeeper's registered number, to 'put in order' neglected apiary sites and to keep access to hives clear to allow apiary inspectors to inspect brood combs.

Disclosure of information from the registration system
The *Privacy and Personal Protection Act 1998* restricts the circumstance under which the information can be provided. All requests for release of information from the bee registration system go through me. The information may be released depending upon the circumstances. Please contact me if you require further information.

From June 2012 to April 2013, two written requests for information were received and involved the illegal placement of hives on State Forest sites and also on private land.

Stolen and or vandalized hives
Several Police Officers in the Rural Crime Units have received specific training in basic beekeeping and they are more receptive to beekeepers reporting stolen hives and/or equipment. If you do not report stolen or vandalised apiary material then the police can not do anything to help you. It is a good practice to inform the police of the dollar value of the stolen material. If you have any hive material stolen you should report it to the police. Ensure the police record your registered brand.

Since the last conference I was notified of the following:
15 beehives stolen from Lower Lewis Ponds Rd, Ophir, near Orange, NSW. They were stolen between 9am and 1pm on 22nd August 2012. They are fire branded S225, as are the frames. The theft has been reported to the police. A mixture of 8 and 10 frame hives, singles, doubles and triples.

If you come across hives with this registration number and suspect that they may be the stolen hives please contact the NSW Police, in particular the Rural Crime Investigators.

Report all stolen and/or vandalised hives to the NSW Police.

Honey Bee Biosecurity Management Group.
This is a Management level, cross-divisional committee that ensures that the Department's work on bees is coordinated and meeting departmental priorities, particularly for biosecurity. It includes representatives from Biosecurity, Research, Extension and Industry Development and Compliance.

Bee Industry Consultative Committee (BICC)
This committee is not currently active.

Operational plans
Operational Plans are operations where NSW Department of Primary Industries Regulatory Officers (apiary inspectors) conduct high profile compliance operations in an area.

The objectives of these operations are twofold
1. To provide advisory material to beekeepers on registration requirements and disease notification/eradication by holding an information meeting with interested beekeepers and
2. To investigate compliance with, and obtain evidence of breaches, of the provisions under section 6(1) – unregistered beekeepers, section 15 – unidentified brood boxes and section 22(1) – fail to notify AFB and take appropriate regulatory action where offences are detected

The major objective is to heighten future compliance

APIARY OPERATIONS

Mid North Coast Area – Woolgoolga and Valla – April/May 2013
Two apiary inspectors spent two days in the Woolgoolga and Valla areas. AFB was detected at varying sites owned by two different beekeepers**.** The owners were contacted and issued with written cautions for failing to notify AFB. Directions were also issued to the beekeepers to burn, bury or irradiate the infected material.

THE TAKE HOME MESSAGES FROM THESE OPERATIONS ARE

Beekeepers Must Take Responsibility For Their Own Disease Management

If Beekeepers Are Sick Or Injured And Or Are Getting On In Age Or For Any Other Reason They Can Not Manage Their Apiaries, They Should Seek Assistance Before A Major Disease Problem Occurs**.**

INDUSTRY CANNOT RELY ON THE GOVERNMENT TO MANAGE AFB

Further information about beekeepers' legal responsibilities can be obtained from NSW Department of Primary Industries website at http://www.dpi.nsw.gov.au/agriculture/livestock/honey-bees

Please contact Mick Rankmore on (02) 6741 8374 during business hours or mobile 0402 078 963 or by email michael.rankmore@dpi.nsw.gov.au. If you have any questions relating apiary compliance activities.

2013 SYDNEY ROYAL NATIONAL HONEY SHOW

The Sydney Royal Easter Show was abuzz with bees and all things honey this year including numerous producers awarded for their quality honey, demonstrations of live working hives and honey products tasted and tested by showgoers.

The Show, run by the Royal Agricultural Society of NSW (RAS) over 14 days, saw close to 900,000 people visit the largest display of agricultural excellence in the country.

The National Honey Show was once again an overwhelming success for Exhibitors.

In the non-commercial section, the Most Successful Exhibitor in Honey Classes (1 to 24) was awarded to Norman Adrian Webb & John Keith Godwin, and the Most Successful Exhibitor in Small Producers Classes (30 – 37) was also awarded to Norman Adrian Webb & John Keith Godwin for the second year running.

In the commercial section, Bartholomews Meadery (WA), Buzz Distributors Pty Ltd (SA), Capilano Honey Limited (Qld), Honey Delight (ACT), Malfroy's Gold (NSW) and Win's Creek Honey & Mead (NSW) were all awarded medals. These Exhibitors will now have the opportunity to display the prestigious Sydney Royal medal artwork on their products.

Bartholomews Meadery went on to take out the highest honour of the competition, winning The Phillip Carter Annual Trophy for Champion Commercial Exhibit. The Trophy commemorates the on-going service given to the National Honey Competition by Mr Carter, an honorary Member of Council at the RAS.

Congratulations to all of the Exhibitors and to view the results from the Sydney Royal National Honey Show please visit www.sydneyroyal.com.au/honey

As well as the National Honey Show, the Honeyland stand returned to the Show. Honey tastings were as in demand again with 50,000 spoons of liquid gold slurped down by the crowds which equates to Showgoers sampling over 129kg of honey during the 14 days.

Showgoers were also treated again to view the inside of a working hive with live bee demonstrations taking place at the popular Bee-Zeebo. Attracting large crowds, the daily demonstrations educated showgoers on how a beehive operates and the role the queen bee and her colony play, and gave an insight into the fascinating world of beekeeping.

The Sydney Royal Easter Show will take place from 10 -23 April next year. If you are interested in entering or would like more information on the National Honey Show please contact Elaine Rogers on 02 9704 1449 or email erogers@rasnsw.com.au

Elaine Rogers
Agricultural Competitions & Events Coordinator
Royal Agricultural Society of NSW

AUSTRALIAN HONEY BEE INDUSTRY COUNCIL
Executive Director: Trevor Weatherhead
Email: ahbic@honeybee.org.au Phone: 07 5467 2265
Mailing Address: PO Box 4253 Raceview QLD 4305
Website: www.honeybee.org.au

ANNUAL REPORT FOR 2012 - 2013

This past year has been a challenging one for the Australian Honey Bee Industry Council (AHBIC). The many issues covered are:

AFB workshop
In March, 2013 an AFB workshop was held in Canberra. Out of this came a "Proposal for a National Honey Bee and Pollination Industry Biosecurity Management Strategy". Seed funding for this is being sought from the Commonwealth Department of Agriculture, Fisheries and Forestry (DAFF).

From the workshop, the Steering Committee of Craig Klingner, Ian Zadow and Sam Malfroy have developed two motions which are being put to the various State beekeeping conference. I urge you to support these motions.

Asian bees
The Transition to Management Plan (T2M) finishes on 30 June 2013. There have been many phone hook-ups which AHBIC has been represented on. There are several research projects being carried out which have been funded by industry from the Honey Bee Contingency Fund and the Federal Council or Australian Apiarists' Associations (FCAAA).

Post Entry Quarantine Station
The Federal Government made a decision to have a new quarantine station in Melbourne which will account for all imports into Australia. No amount of discussion could change their mind. AHBIC has been attending meetings and having discussions to make sure that the new premises will be able to suit the needs of our queen bee importers.

Varroa preparedness
AHBIC has been represented on this Committee by Peter McDonald. The work of the Committee ends on 30 June 2013.

Biosecurity
AHBIC has been a part of the preparation of the Biosecurity Manual and the Industry Biosecurity Plan. The Biosecurity Manual has been mailed to all registered beekeepers in Australia through funding by FCAAA and the Wheen Bee Foundation.

The categorisation process of the Emergency Plan Pest Response Deed (EPPRD) has still to take place. This will commence in the New Year.

The National Bee Surveillance Program is due to commence on 1 July 2013. This is being half funded by industry from the Honey Bee Contingency Fund. The other half is from Horticulture Australia Limited (HAL).

Food Safety
Our Food Safety Committee has been dealing with several issues. These include:

- GMOs in honey for the EU
- PAs in honey
- Labelling and composition of imported honey
- A standard for the antibacterial activity in honey

Levy collection costs
DAFF have advised industry that the levy collection costs will be greatly increased this coming year and in coming years. This is something that will need to be addressed.

APVMA pollinator review
There has been much publicity regarding neonicotinoids and their effect on bees. The Australian Pesticides and Veterinary Medicines Authority (APVMA) are conducting a review on pollinators and pesticides. The outcome of this is being awaited by the Honey Advisory Committee (HAC) of the Rural Industries and Research Development Corporation (RIRDC) before they action our motion from the last AHBIC AGM.

Exports of live bees
The market to Canada is still in place but they are reviewing the situation considering what will happen when the T2M plan finishes. AHBIC is fighting to keep this market open.

The US market is still closed to Australian live bees. The US has indicated they will await the results of the pathogen survey in Australia and see what happens after the T2M plan ceases. Again AHBIC is active in trying to have this market reopened.

Executive Director
In December, AHBIC terminated the services of Stephen Ware as Executive Director and Trevor Weatherhead has been appointed to the role until the AGM in July. This position will need to be considered at the AGM

AGM
I will be standing down as Chairman of AHBIC at this AGM. This means that there will be a vacancy for the Chairman. Eduard Planken resigned as Deputy Chairman and this position will need to be filled at the upcoming AGM. The term of two (2) of the executive, Ian Zadow and Rod Pavy finish at this AGM and they are eligible for re-election. Trevor Weatherhead was appointed to the Executive at the last AGM for a two (2) year period. If he continues in the role of Executive Director, then he will resign and there will be a vacancy to fill for one (1) year.

Memberships
AHBIC is a member of Animal Health Australia (AHA), Plant Health Australia (PHA) and Apimondia.

National Honey Bee Day
This year only Western Australia, Victoria and Queensland took on the national honey bee day. There was indication from several other States that they may participate next year.

Lindsay Bourke
Chairman

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Apimondia Congress Package, Ukraine
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TOUR LEADER:
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Bruce has worked in the bee industry for over 40 years in Australia with extensive international experience including involvement in many Apimondia conferences.

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Could you please help me to find some articles or any information of wax moths which decimated Australian hives in the 1880s?

I'm researching this topic for a colleague who is writing a piece of fiction placed in Australia in the late 1880s and my beekeeping friends here in the UK are not able to help.

If somebody can help I'd be happy to send them a copy of the Monk and the Honeybee DVD our company produced about the life's work of Brother Adam, the bee breeder.

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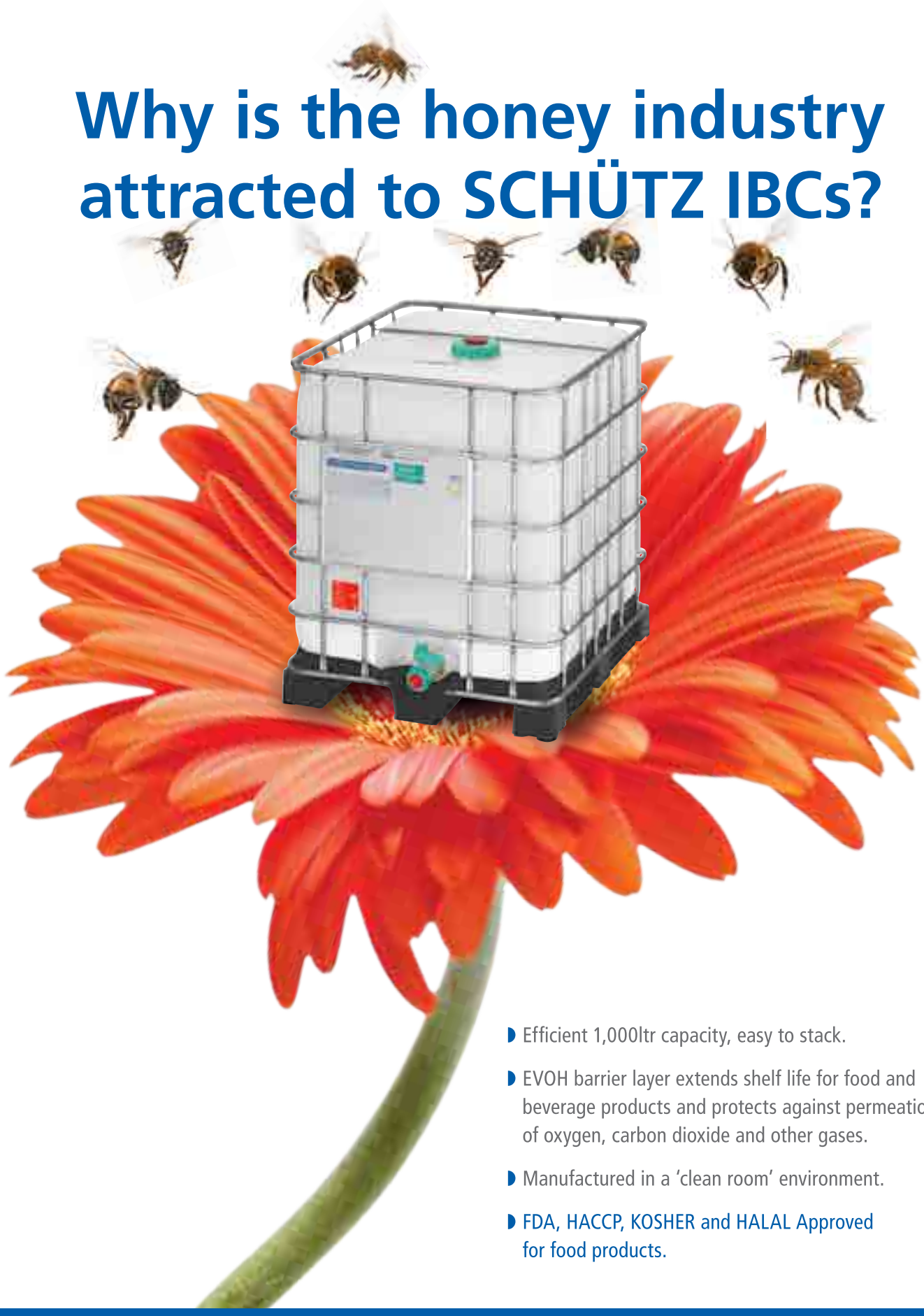

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