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Honeybee Breeding Programme

Whilst industry has a breeding programme in its infancy it is my belief that the costs of carrying this forward in anyway cannot be borne by industry + do the job properly

Progress measurements need to be made not only in honey production but also in areas such as hygenic activity, disease + pest resistance, general handleability (gentleness) hardiness in low protein environments. The latter combined in research to provide adequate protein levels in the harsh Australian Environment.

There is/was to bee breeding programmes in Australia. The first the Eastern States bee breeding programme allianced with the University of Western Sydney + supported by HBRDC. This programme was abandoned by the industry and has found its way into private hands and is being maintained by a this group head by Luriton Briggs from Glenrowan (0357662216)

The second programme was run by the western Australian Department of Primary Industries + HBRDC and like the former programme has passed into private hands headed by John Davies in W.A. These bees also currently have a stable home.

The reason for the two programes was that Western Australia has did + still has a disease free status for european foulbrood which in the eastern states requires the feeding of antibiotics (terimicyn?) to control.

The main focus of the programes at that time was on honey production but the world has changed + pests to the European honeybee has spread to almost every corner. Australia at this time to our knowledge enjoys a status free of the pests namely Varroa + tracial mites

Where to go in the future?

My personal belief is that bee breeding should be institutionalized.

This I believe would give bee breeding in this country continuity, a way of measuring the progress of the programe and the capacity to link with similar institutions around the world.

The bigest threat to the industry in this country's honey bee industry is both varroa + trachial mites. To me it makes sense to subject the breeding programes in Australia to these insects to guage the resistance capabilities of our bees. As you cannot bring them to Australia it stands to reason to subject these bees to the mites overseas. Through institutions being connected it would be possible to do this.

There are programes overseas both private + institutionalized presently breeding for resistance to these mites whoes expertise will sourly be needed in the event of an outbreak in Australia

Combined with this resistance are also some problems + so the costs of testing for things like the Africanized gene needs to be done through the quarantine process.

I would have a preference to test our own stock overseas rather than bring unknown quantities into this country. Again the expertise is not within the Apiarist's fatenity to test for these things and many others I might add + neither is the money.

I might also add that links btw major programe's overseas could certainally bring a wealth of knowledge to our industry outside just the bee breeding programes.

I believe the old quarantine facilities have recently been sold off. so new facilities would also need to be put in place to protect the industry in this country.

It should also be noted that the mites we are talking about are currently showing resistance to the chemicals being used to controll them. So long term the only way forward is to breed resistant bees.

Whilst it sounds simple, it is a long, dificult and costly task. The wider community benifit so great and the expertise within industry so as to preform the tesks so necessary basically non existant, these so necessary programes for the future of the industy need to be in the hands of the University System with some guidance from industry.

Pollination Services

Whilst much will be said to this enquirey about the greater community benifit of honey bees. ~~to the~~ ~~common~~ I wish to comment on current problems with the movement of bees ~~with~~ accross state boundries.

In 2005 I shifted bees to the south coast of N.S.W. on to a spotted gum honey flow. I obtained the necessary health certificate to shift bees back to Almonds in Victoria. (this crop is 100% reliant on honey bee pollination) In 2003 their had been an outbreak of small hive beetle in NSW around Sydney / Richmond, and later in Queensland due to bees being shifted to Queensland from this area. It was suspected that the pest came to Australia during the 2000 Olympics. Had bred for three years approx and after an inital response was deemed not possible to contain and therefore deemed to be endemic to Australia. This was agreed to by AHBIC. All states are members to this body through FCAAA so you would

expect that to be the end of the issue. Come conference in 2005 (June) there was a concerted push by individuals within the V.H.A. Included in this the D.P.I. Victoria to exclude all bees comming from the N.S.W. South Coast from entering Victoria. All the science available on the pest said that the pest would multiply in humid wet conditions, but would not do so for the most part inland because the window of opertunity to breed would not be available. Nobody wanted to accept the ~~ste~~ science. This science has since been proven correct as two years later we still do not have an issue in 2007 inland.

The position in Victoria was that I could not come to Victoria to the Almonds but Victorian beekeeps could after the almonds come to N.S.W and sit their bees beside mine to work a honey flow when you consider the pest can fly up to 18 klm's non stop at a time then their is major problem's in the logic of the industry leaders.

The position was :- I could not come to Victoria to work almonds

- Victorian beekeepers could come to NSW work honey flows next to me
- Victorian beekeepers go home uninhibited
- I was still not allowed to Victoria to work honey flows or other pollination crops
- Effectively I am bankrupt.

All this created a violation of free trade btw states

- three (3) beekeppers were targeted

with combined hive numbers of 4000 hives of bees out of 30,000 going to these crops at the Robinvale.

- all these bees received maximum bonuses for hive strength, good bees are needed to effectively preform the pollination sevice.

- DPI Victoria targeted 2 of the 3 beekeepers 1 Victorian based 1 NSW based the third NSW based but not persued.

- this occured even though health certificates had been issued to shift bees into Victoria

- An investigation was carried out 10 months later the investigation dropped.

So what happens if a Varroa incursion happens in Australia?

The ~~interesting~~ interesting thing about these incursions they are usually found 2/3 years after they occour and are established. ie small hive beetle as above

And as the beekeeping industry is migratory the ~~insects~~ insects could easily be transported N, S. E+ West within a short period of time.

This season alone I personally have been

- based in ~~Brok~~ Brocklesby N.S.W 20 klm's north of the Murray River near Albury.

- June shift bees from Bendigo (Vic) to Mildura (Vic) in readiness for almonds. (400 km's)

- July/August Shift bees to Robinvale (Vic) (100 kms)

- August/Sept Shift bees to Brocklesby (NSW) (400 kms) shift some bees from Robinvale to Shepparton (Vic) to apricot pollination.

- Sept. Shift bees out of apricots. to Brocklesby NSW (200 km's) Shift bees to nashi pollination in Shepparton (200 km's) Shift bees to blueberries Tumbarumba (NSW) (180 km's)

- October - Shift bees to Yellow gum Bendigo (Vic) (350 kms)
- November - Shift bees from Bendigo to Shepparton to Kiwifruit pollination (100 km's)
  - Shift bees to Whroulg to Kiwifruit (200 km's)
  - Shift bees back to Brocklesby from Kiwifruit shepparton (200 kms) whroulg (100 km) blueberries (150 kms)

December - Shift bees to the murray river onto River red gum (20 to 70 km's)
Shift bees to Yambo creek (200 kms)
Collumbo Creek (150 km's).

January - Shift bees to Lancfield onto messmate + manna Gum. 200/300 kms

Feburary - Shift bees to Mt Hotham (Vic) to swamp gum, black salley + candle barks. (200/250 km's)

March - Shift bees to Mallacoota (Vic) from Lancfield (Vic to (500 kms)

May - Shift bees from Lancfield to Eulo (sw Qld) to napunya. (1400 km's)
Shift bees from Mt Hotham to Eulo (1300 kms)
Shift bees from Mallacoota to Eulo (1500 km's)
Shift bees from Mallacoota to Brocklesby (600 km's)

July/August - Shift bees back to Robinvale (Vic) (1,100 kms) x 4 loads (1000 hives of bees) for almond pollinati

And I am one beekeeper. We all cross paths at some stage going to something different sometimes sitting bees close to each other or 1000's of km apart. How is it possible to keep anything that may affect us in a cage / state boundry's if all the oceans cannot protect us, as it only takes one swarm with Varroa / tracheal mites through the airports / sea ports and without very early

detection it is all over.
What do we do?
- Would the greato benifit be served by putting 10 km buffer's around all ports / airports.
- Placement of Sentinel hives / swarm catchers within the zones
- Continual monitering by beekeeping clubs / Associa - ion's with the support of DPI in all states and funded accordingly

- be ready for a widespread incursion so that the chemicals needed to treat the issue are available in sufficient amounts / quantities.

- DPI support both in the field + in education.

- above all do not close borders because take almonds for instance 80,000 in two years on one job in Robinvale. The bulk of these bees will come from NSW + Qld. they cannot be supplied within Victoria certainly not when it comes to quality of bees to do the job. so 50,000 cannot go to the job. Whats it lead to? Severely financially streched beekeepers and almond producers. It serves no purpose
The Murray River at Boundry Bend is 500m from N.S.W the closest almonds to N.S.W in this situation.
The way beekeeking is carried out in Australia (migratory) the inability to shift spells the death of the industry. We all share the same risks where ever we are based

- we either stop it at the place of incursion when it occurs or it is all over from this point ~~to~~ we have to deal with the issue of control not ~~eradi~~ eridacation.

- take N.Z for example when they found it (Varroa) it was endemic to one island, three years later it has traversed the sea btw the two islands + now endemic to the second. How did it get from one island to another? Wind, Birds, illegal importation? migrating drones it is considered the most likely a drones hive hop up to 30 km's and move and ~~are~~ are carriers of all pests + diseases. Mother nature designed the honeybee this way (migrating drones) to guarantee genetic viability and so perpetuate the species.

In NZ they have had exclusion zones to slow the spread of varroa and it has done this. But anyhoo who puts up this arguement to close borders to inhibit the migration of bees by the beekeeper. NZ beekeeping except for pollination is a "non migratory industry"

This industry is about survival of the fittest, with very tight financial constraints due to honey prices / pollination service returns and the costs associated with performing these services / honey production, we cannot survive with fanciful notions of restrictions of movements even if it may save some beekeepers from infection for a few month / years.

Always remember that it took, what one banana / apple / pear or whatever with small hive beetle larva undetected to have an endemic pest in our industry + truely unwanted and now we live with it, wherever we go.

Research

While I have talked about the need for beebreeding programes and how I feel they should be structured, there is in my eyes an area where much research needs to be done that can aied me and my collegues. In Australia we work many pollen deficent trees for honey production.

These trees include - Mugga Ironbark both summer and autumn flowering types, Yellow gum grey Ironbark an napunya.

Dr Doug Somerville compiled a book for bees skinney bees adressing in part this subject.

To feed bees on these crops due to a lack of pollen available for bees to collect of these species we provide the following mixture.

- two parts soyflower
- one part honey bee pollen collected in special tray
- mix with sugar syrup
- add tracimin for lycine + iso lucine fortification

Mix to a dough consistancy + feed approx 350 gm per hive every time you take honey off.

Does it work? It seems to. We have so scientific base to this. We do not know if we are under feeding / over feeding what elements are missing completely we actually fly in the dark or by the seat of our pants.

It is important to feed bees well to maintain colony strength to both provide both pollination services and honey production.

It is often said to eat healthy is to be healthy and quite frankly we have absoultly no idea what we

are doing in this area and we need some help and maybe Controll nosema disease to an extent ~~with~~ to prevent unexplained ~~colmen~~ colony collapse which is occuring in the U.S.A. + Europe. presently.

Skills Training / Education.

I am sitting down writing this in a hotel room in Joberg in South Africa. I am here to see a couple of beekeepers looking to come to Australia as skilled personel to participate in our industry. Firstly they wish to come to work for a beekeep and then later invest in the industry in their own right.

I guess if I make the decision to employ one of these people the fun will begin on the whats, whys, + when fors.

I cannot find anybody in Australia who is skilled and ~~with~~ wants to work in the industry nor somebod who wishes to train to become a beekeer.

It is a tough profession, you need to be skilled in so many areas :- Manipulation of hives of bees, queen bee breeding, truck driving, machine / plant operator, maintance engineer, forester - identifying trees flowering habits, accountant + office administrator + the list goes on.

I admit that the path as a first generation beekeeper with no grounding whatsoever has been difficult. Certainly with out the support from certain people namely. Paul Griffiths, Lavie Semmler + Linton Briggs from Wangerratta, Pat Roberts from Batemans Bay and to a lesser degree Kevin Eastburn Dubbo / N.T. I wouldent have made it.

and so mabey there needs to be a better way

How you go about this is difficult as firstly you need to collect the infomation of the right people

Secondly you need the right people to teach it.

At the end of the day you can teach people to go through a hive of bees, what a queen looks like, how to requeen a hive of bees, how to take honey off and how to load a truck, possibly even to find the occasional honey flow, extract honey + recognise different tree varieties. But at the end off the day & the most succesful beekeepers ~~has~~ have a gift as does a Picasso.

Markets

This is a very difficult area as we have a free market economy.

What this industry faces like many others is that for me to employ one (1) person in Australia it costs me a minimum of $A3600 a month, in China it is $150 US say $170 AUST a month.

Their honey is imported here and sold on the super market shelf at the same price as mine, so the packers + the supermarkets have a field day at our expence.

Prices in Australia range from as little as $1.30 AUST a kilo to $12-65 and sold from $4.25 to $6.25 per 500gram.

Also our peak body in their wisdom have decided that our industry does not have the right to marketing infomation so out of APHBIC

Comes no marketing information at all not for the Australian market not for the overseas markets.

It is painfully obvious to me that AHBIC is dominated by the packing sector under these circumstances. Even to the point that AHBIC is presently seeking a Minimum Residue level (MRL) for a chemical ~~banned~~ banned for use in this industry for 10 years. It was found in honey in Europe by a customer, cannot be sold their + they now want to pack it for the local supermarkt chains to get rid of the product. Because this substance ~~APB~~ PDB stays in wax combs for ten or more years how long does this go on for.

The same thing has occured in the past for an antibiotic used in Argentina for honey bees not for use + never has been in Australia so they set MRL's for the product. So why produce clean and Green product when you can use any product you like banned, illegal or what ever as you obey need to set an MRL

So personally I believe that the National Residue Survey should beef up their testing + broarden the range of thinks they are testing for.

There should be standards set for Australian honey and then all over seas product should have to attain these standards before they are allowed to be sold in Australia. And certainly if we are not allowed to use a product which contaminates honey + is banned produced in Aust or overseas it should never be sold here.

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Access to Native Forests.

What also needs to be addressed is access to all of our native forests. The industry has a policy document called, Honeybees in Concerved Forests of Australia that outlines the debate from a very logical perspective. In Victoria for one reason or another we have lost approx 60 sites in National Parks in the past ten years. This cannot be allowed to continue as the industry cannot survive without this access. At least 80% of all honey produced by me, is produced in or around these forests all eucklypt honey. Not only honey is produced but the nutritional value of pollen produced by some but not all species is so valuable in maintaining a healthy hive. So the greater community benefit is served by having good bees able to service pollination contracts on so many crops. Pollen is also collected of many species in these forests to feed back to bees on species that produce low protein pollen or no pollen that can be collected by bees. In this way it is possible to maintain good colony strength when they would normally suffer from dwindling due to poor or no protein. Badly effected hives this way quite often die out ~~then~~ or are severly effected and quite obviously of no use for either pollenation or honey production. If my use of the forests is curtailed in anyway it has or will have a severe effect on my ability to make a living.

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Thinks that may effect bees on Pollination crops

Fireblight could well be a major issue in honey contamination. An antibiotic is sprayed onto the flowering crop to protect the crop from fireblight. As honeybees are used to pollenate the species in question this will lead to honey being contamminated by the antibiotic in use. Whilst it may be argued that bees do not produce honey of these species in question, the bees walk all over the flowers & while collecting pollen at the same time pollinating the crop the store & eat the pollen and also walk all over the honey combs inside the hive. Their may also be an issue of bees ~~becoming~~ diseases such as Europend foul Brood or American foul brood becoming resistant to antibiotics when not fed in some sort of controlled environment. I do not know of any studies carried out in this area, but am aware of antibiotic resistance being of some concern in countries using antibiotics to control this disease.

To me the bigest problem would be antebiotic contamination in honey.

As I am writing this in South Africa and will not be home in Australia until the 9th of July 2007. I apologise for the presentation but under the circumstances it is the best I can do.

Michael Walter LEAHY