

AHB SAG Minutes

Meeting Six of the Asian Honey Bee Scientific Advisory Group (AHB SAG)

Teleconference held on Thursday 12th July 2012

Attendees: Rod Turner PHA (Chair), Sam Malfroy PHA (Secretariat), Simon Barry CSIRO, Glynn Maynard DAFF, Trevor Weatherhead AHBIC and Boris Baer UWA (the following attendees joined the meeting as observers) Russell Gilmour DAFF Queensland and Anna Koetz DAFF Queensland.

Apologies: Sharon De Wet DAFF Queensland, Neil O'Brien DAFF Queensland, Denis Anderson Bees Down-under, Doug Somerville NSW DPI, Max Whitten FCAAA

Item 1: Welcome by the Chair

The Chair welcomed the Members of the Asian Honey Bee Scientific Advisory Group (AHB SAG) to the teleconference.

Item 2 & 3: Remote nest treatment summary and discussion

Biosecurity Queensland (BQ) provided a summary of the remote nest treatment report. The SAG stated that Fipronil bait stations used in remote nest treatment of AHB did not appear to be the 'silver bullet' that was originally thought it would be. However, the report demonstrated that Fipronil is effective in control of AHB nests and swarms, however, the relationship between the number of bees poisoned and the ultimate destruction of the nest still needed to be determined. The SAG stated that this relation is somewhere in the data, and more nests need to be treated to figure out this relation so that there could be some level of confidence from the number of bees foraging on a Fipronil bait station and the ultimate destruction of an AHB nest or swarm.

The SAG also raised some issues of concern they had with the remote nest treatment report. It was stated that some of the conclusions that were drawn in the report are not in line with what was the intended end-use of Fipronil remote nest treatment of AHB. These issues focused around statements about the value in continuing these trials and possible environmental impacts of Fipronil remote nest treatment of AHB.

The Chair stated that although Fipronil is used for a variety of reasons, the BQ researchers do need to gather the environmental and off-target impacts of these trials as well as how much of the Fipronil residue stays in the nest and where (i.e. nectar, honey, wax etc.). BQ stated that more residue work is being completed and that these results would be forthcoming in the next few weeks. The Chair stated that he will be having a meeting with the APVMA in the near future in regards to the Fipronil trials and what kind of data packages will be required for beekeepers to gain registration for Fipronil as an AHB control tool after the AHB T2M.

It was also discussed that although the trials are demonstrating the 'knock-down' effectiveness of Fipronil remote poisoning, the kill rate after 1st treatment is still quite low in comparison. The SAG proposed that BQ look at the permit that was supplied by

AHB SAG Minutes

the APVMA and for future trials, a half rate of the current Fipronil rate be used. This would determine whether a higher numbers of foragers, making more trips, with a lower concentration of Fipronil would be better to kill an AHB nest.

BQ raised some issues in regards to the time allocated to these trials and it was accepted amongst the SAG that the time allocated to this project was not being managed effectively. The possibility of catching AHB swarms and keeping them in hives was discussed. These hives could be observation hives (Perspex / glass on the side to see through) which would eliminate the time required to find the swarms / nests of AHB for the trial and this would also allow easy extraction of the nest and in estimating colony size in relation to Fipronil exposure. BQ stated that this could be a possibility considering the beekeeping industry in Cairns are collecting AHB swarms and managing the colonies in hives for research that is being funded out of the Honey bee industry contribution to the AHB T2M. Other aspects of the trial that could be included in future experiments were also discussed, including marking bees which fed on the feeding station, as well as an analysis of the stores in the nest.

The Chair thanked BQ for the report and stated that it provided a lot of useful information for this tool to be potentially used in the future. The Chair also stated that this report highlighted the importance of developing effective attractants for AHB which could make this tool more effective. The Chair requested that the SAG provide any comments on the remote nest treatment report to PHA (i.e. potential usefulness of observation hives) so that this can be circulated amongst the SAG and then provided to BQ for consideration.

Item 4: Bee trap efficacy

BQ explained the protocol of bee traps and discussed the report that was conducted to determine their efficacy.

The SAG stated that this report demonstrated the in-effectiveness of gel traps for surveillance of AHB when compared to other techniques, such as floral sweep netting. The SAG recommended that BQ no longer continue with the bee traps and instead re-focus their efforts in developing a proper floral sweep netting methodology to determine levels of confidence / absence of AHB in area. The SAG also stated that BQ should work closely with Dr David Guez who is conducting the AHB attractant research.

Item 5: Cairns port surveillance strategy and trial

BQ provided a summary of the combined DAFF Commonwealth and DAFF Queensland

The Chair requested that the words 'high intensity surveillance' be used instead of 'bee suppression zones' which in fact refers to a different method of surveillance and different actions. BQ agreed to change the wording. The Chair also requested that BQ look into getting local beekeepers to help with beelining any nests that are detected around the

AHB SAG Minutes

surveillance area, as this is proving to be a costly exercise for BQ staff. BQ agreed to follow this up out of session.

Dr Baer from the SAG raised the issue on whether there is a PCR test to determine whether Varroa can exhibit its unique micro-satellite on a honey bee forager (either AHB or EHB), even if the Varroa mite was not on that specific forager. There was some discussion regarding the plausibility of this technique and how long the lag time would be for Varroa presence to be recorded (i.e. if a bee had Varroa on it in PNG and then came to Australia on a vessel, but didn't have Varroa on it, would it still record the Varroa presence?). Dr Baer agreed to follow up about this out of session.

Item 6: Optimising early detection of new incursions of AHB

BQ stated that they had analysed biosecurity data and determined that the Cairns international terminal and the domestic terminal do not represent a significant risk pathway for a new *Apis cerana* incursion, however, the Cairns seaport does pose a significant risk of new *Apis cerana* detection.

BQ explained that they had formed a partnership with Australian Government – DAFF Biosecurity officers in the Cairns area to optimise early detection of any new incursions of AHB at the Cairns seaport. This partnership involved BQ analysing the risks of the different areas of the seaport and using existing data to map suitable floral resources around the port, which. This was used for fortnightly targeted sweep netting surveillance by DAFF Biosecurity Officers.

The SAG stated that BQ should continue with this work and document what was involved in setting up this surveillance strategy to optimise early detections of new incursions of AHB, as this could easily be applied in other major risk first call of port areas throughout Australia.

Item 7: Detection of *Apis cerana* DNA from bee eater pellets and trap liquor

BQ provided a summary of the study into extracting DNA from bee eater pellets and trap liquor. It was explained that AHB wings from the bee eater pellets have in the past been manually separated and diagnostics on the wings have been conducted manually using a microscope. However, this has proven hard when whole AHB wings are not present.

BQ explained that the aim of this experiment was to develop a quick PCR test for bee eater pellets to detect AHB wings. The experiment has been successful, but has still involved manual extraction of the wings from the bee eater pellets and then for these wings to be run through the PCR. BQ stated that there was too much genetic material / chemicals for a PCR to be run on entire bee eater pellets.

The SAG stated that considering manual extraction has to already occur (for manual diagnostics), if someone is trained in basic entomological diagnostics, then manual

AHB SAG Minutes

diagnostics would probably be faster and simpler. However, the SAG requested that BQ continue to look at ways in which the entire bee eater pellets could be run through a PCR to test for AHB. The SAG stated it is worth to continue with this research as bee eater pellets provide a fast and reliable mode of detection of AHB.

The SAG also stated that it is worth continuing with the DNA extraction from trap liquor experiments as this will prove effective in determining the presence of AHB in a region, even if none are physically observed by field staff.

Item 8: Study of microsatellite alleles in Asian honey bees

BQ provided a summary of the study of microsatellite alleles in the Asian honey bee population in Cairns, when compared to other populations of Asian honey bee in the region.

The Chair stated that although it is interesting in determining the population dynamics of the Cairns population, this information is in fact secondary to what is aiming to be achieved by the AHB T2M. It was discussed that any new interception that is detected will be the responsibility of DAFF Biosecurity and determining where it is from comes secondary to destroying and collecting information from the interception.

The port risk assessment which will be conducted by CSIRO, as well as the revised pathway analysis will be able to provide enough information to allow DAFF Commonwealth Biosecurity to determine the risks of both the Cairns population of AHB, as well as international risks.

BQ stated that funding to continue this research is limited and that funding would have to be redirected from other projects to continue this work. There was disagreement within the SAG regarding the usefulness of this research in determining different populations of AHB and this issue was decided to be resolved out of session through feedback from the SAG when all Members are able to comment.

Item 9: Summary and close of meeting

The Chair thanked BQ for their report and also thanked the SAG for attending the teleconference and closed the meeting.

The Chair requested that Members of the SAG send comments on the BQ reports directly to PHA so that these can be compiled and presented to the AHB TMG and BQ.