

**Summary Note of the Bee Health Advisory Forum
14th Meeting – 18 June 2015
Foss House, York**

Present:

Louise Mount (Chair)	Department for Environment, Food & Rural Affairs (Defra)
Kevin Beattie	
Belinda Phillipson	
Andy Wattam ☎	Animal & Plant Health Agency (APHA)
Marie Holmes	
Mike Brown	
Katherine Roberts	Food & Environment Research Agency (Fera)
Tim Lovett	British Beekeepers' Association (BBKA)
David Aston	
Margaret Ginman	Bee Farmers' Association (BFA)
Wally Shaw	Welsh Beekeepers' Association (WBKA)
Ivor Davis	National Diploma in Beekeeping (NDB)
Steve Sunderland	Scottish Government
Chris Hartfield ☎	National Farmers' Union
Jane Jones ☎	Welsh Government (WG)
Irene Allen ☎	
Jeri Wright	University of Newcastle
David Evans	University of Warwick

Apologies:

John Bowles	Welsh Beekeepers' Association
Mike McGuinness	Animal & Plant Health Agency
John Mellis	Bee Farmers' Association
Richard Watkins	Department for Environment, Food & Rural Affairs
James Smith	
Denise Burgh	Veterinary Medicines Directorate (VMD)
Ken Basterfield	National Diploma in Beekeeping
Dan Basterfield	International Bee Research Association (IBRA)

1. Welcome and introductions

The Chair welcomed everyone to the meeting. Introductions were given by each member of the Forum. The Chair also welcomed guest speakers Jeri Wright of Newcastle University and David Evans of Warwick University. Both were attending to present their findings to date from their Insect Pollinator Initiative (IPI) funded work.

2. Highlight report

Actions arising from the 13th meeting were discussed. All were complete.

Highlight report

The Chair invited comments on the report which had been circulated prior to the meeting.

Risk 2 – lack of progress with extending range of authorised medicines. It was queried whether Defra were still looking into authorised medicines. The work was ongoing and it was hoped there would be more to share in the future. It was suggested BHAF should place positive pressure to ensure medicines were being prioritised. The Forum acknowledged good IPM practices but felt there was still the requirement for medicines. At present there were 8 products available on the cascade system. VMD were invited to update the Forum at the next meeting on developments from their Bee Medicines Group meetings. Tim noted the Bee Medicines Group meetings were under commercial in confidence restraints but could share one practical development which was movement in data protection from 10 to 20 years.

It was queried whether bee farmers were using official import routes? Denise of VMD and a member were discussing. A suggestion was made that a member of the British Bee Veterinary Association (BBVA), a new a forum for discussion and continuing professional development for vets interested in the field, should be invited to become a member of BHAF. This suggestion was agreed by the Forum.

ACTION 1: Marie to invite a member of BBVA to attend future BHAF meetings.

Risk 4 – delay in commencement of 2015/16 education programmes. Marie updated the Forum that the contract process was on track. Defra procurement were satisfied the projects were distinct enough from each other to enable a single tender contract for this financial year. She advised that the funding process would change in future years and would switch to open competition via Bravo. Proposals were received from BFA and NDB. BBKA confirmed they would participate in the next round of funding as presently they were focusing time and resources into public understanding commitments whilst continuing with current elements of their training programme.

Risk 5 – risk to continuation of HBP and BHAF due to National Pollinator Strategy (NPS). Concern was expressed about the potential for the NPS to eclipse the HBP and BHAF. Marie confirmed they were separate and distinct plans held in separate cost centres, the Forum would continue regardless of HBP or NPS.

Issues

Issue 1 – Stakeholder aspirations exceeding budgetary constraints – Marie to add to comments section how it was felt science had been overshadowed, particularly with the disbandment of the SEAG working group.

Issue 2 – lack of research council funding when IPI initiative and other work were moved into practical beekeeping. Policy and practice notes should be emerging, a wider practice note was published but further information would follow.

Issue 3 – bumblebees imparting pathogens to honey bees. Louise updated the Forum that bee health policy would be looking at the bumble bee policy this financial year. It was noted it wasn't clear which way pathogens were moving i.e. HB to BB or BB to HB.

3. Update on EU Apiculture programme

The EU Commission had moved away from including Mandatory Registration systems for beekeepers in the latest draft Delegated Regulation. The new Regulations instead provide that Member States utilise 'reliable methods' for determining hive numbers. The first census figures were to be provided to the Commission in 2017 & 2018 for the 2019 submission of 2020-2022 programme. The new delegated Regulation was with the EU Council and should be finalised in the autumn of this year. Richard Watkins was attending a Commission workshop on the 18th June where Member States commented on the current draft Implementing Regulation; the UK line would be to support the proposals as the work identified in the Regulation would have benefits for UK Bee Health.

4. Update on Smartbees

Katherine Roberts presented an update on progress with SMARTBees, key points included:

- Recap on the project which was a collaborative project between 16 partners from universities, research institutions and companies across Europe. The aim was to work on solutions to prevent colony losses caused by the Varroa mite and viruses.
- NBU were involved in six packages;
 - Discovery of resistant traits and genes (work commenced)
 - Advance knowledge transfer to beekeepers
 - Field test traits to test local bee breeding (work commenced)
 - Dissemination through publications, organisations
 - Enhance resistance through dietary regime
 - Determine any future pathogen traits
- Discovery of resistant traits – Part of next generation project where sequencing would be completed in Germany and other member states would be analysed.
- Field testing traits – Use of knowledge gained in Germany's test apiaries and mating stations where they had a successful breeding programme for more positive traits such as aggression and honey production.
- In order for the project to work and be sustainable a requirement of the bee would need to be pleasant to keep and not have aggressive traits. There wouldn't be a pan-European bee to fit all countries and potentially no pan-UK bee as there was so much temperature

variance. A key element of the project was to empower and encourage beekeepers to rear queens.

5. IPI Project progress – Geraldine Wright

Geraldine Wright of Newcastle University presented an update on her IPI funded project 'Can bees meet their nutritional needs in the current UK landscape?' Key points included:

- The project had 3 main objectives:
 - To apply the Geometric Framework for nutrition to identify the nutritional optima of workers and larvae of honeybees and bumblebees
 - To identify how nutritional state influences learning, memory, and foraging behaviour in bees
 - To identify the nutritional quality of pollen and nectar from native, horticultural and agricultural plants in the UK
- Bees have a nutritional optimum 'intake target' the project restricted macronutrients and observed that each caste had different nutritional requirements. Diets were composed of sucrose and 10 essential amino acids.
- Initial findings observed:
 - Foragers need a diet based towards carbohydrates
 - The need for carbohydrates increased with age
 - Bees prioritise carbohydrate intake over protein
 - Bees have a narrow range of tolerance for protein in diet
 - The ratio of amino acids in proteins may affect protein regulation
 - Diets too high in protein/EAA cannot be regulated by adult workers and result in shorter lifespan
- The Nectar and Pollen database would be completed and posted online by June 2016.

The following questions were asked during discussions:

Q) Would the potential stressed state of the bees affect the outcome? Yes, it showed a difference as they went towards forager in a queen's absence rather than nurse with a queen. To work around this the researchers added queen pheromones and kept the temperature at 34 degrees.

Q) What was the scale of effects of bees preferring neonicotinoid food? Geraldine had a separate IPI project looking at effects of pesticides on bees with Chris Connelly.

6. IPI project progress – David Evans

David Evans of Warwick university presented his finding on his IPI funded project 'Unravelling the impact of the mite *Varroa destructor* on the interaction between the honeybee and its viruses' Key points included:

- Goals of the study included :
 - Analyse the influence of varroa on virus levels and diversity ⇒ Identify virus strains with increased transmission kinetics and pathogenicity ⇒ Enhanced diagnostics monitoring of virus infections, future anti-viral therapies
 - Assess the effect of varroa on the immune response of bees ⇒ Define the critical antiviral responses of honeybees ⇒ Influence import policies and strategies to boost honeybee health
 - Analyse genetic variation in bees and the influence on responses to varroa and viruses ⇒ Identify molecular markers associated with resistance to varroa and viruses ⇒ Informed breeding projects for varroa and virus resistance
- Experimental system and treatment groups – frame transfer experiment
- The role of varroa and virus diversity
- Dwv diversity in the hive
- Changes in host gene expression
- Current studies
 - DWV transmission by oral or parenteral routes
 - DWV tropism by oral or parenteral routes
 - Reverse genetic system for DWV
- Future studies – funded and to be funded
 - Biology and pathogenesis of DWV
 - Distribution and control of DWV
 - DWV tropism in varroa
 - Varroa treatment strategies and changes in the virus population

- The molecular virology, structure and function of DWV
- Biology and pathogenesis of DWV
- Distribution and control of DWV
- Controlling varroa and viruses – problems and solutions
- High tech solutions – particularly transgenic bees
- Low tech solutions – coordinated treatment and regular monitoring
- Summary:
 - DWV is near ubiquitous in UK honeybees (standard assays needed for comparisons)
 - Diverse recombinant forms of DWV and VDV-1-like viruses co-exist in adult bees (time to reclassify DWV and VDV-1?)
 - Majority of varroa-exposed pupae and symptomatic adult workers contain a near-clonal virulent, recombinant form DWV/?VDV-1 (transmission route critical for DWV virulence)

7. R&D long term strategy

Belinda Phillipson of Defra policy updated the Forum on present research priorities. Earlier in the year Belinda canvassed the Forum and received a variety of proposals back which she passed her thanks on for. These suggestions were put into a spreadsheet which highlighted duplicates such as husbandry techniques and review of the inspection programme.

The proposal was to look at research gaps and caution was extended to how Defra was an unprotected department. The Forum would like to strengthen links to EURL, EFSA and BFA/BBKA were forging future proofing links and welcomed opportunities for further partnership working.

AOB

It was queried what the latest news was on the Small hive beetle outbreak in Italy. Authorities had looked at 700 hives and no new cases were found, searches included orchards and apiaries. Genetic origins and arrival times were being considered. The outbreak represented the first eradication of intercepted SHB.