



## SUMMARY REPORT

### *New Challenges for Bees: The Way Forward*

**30 September 2015  
European Parliament, Brussels**

Key decision-makers and stakeholders gathered from across Europe in Brussels on 30 September and 1 October for the 4th Edition of the European Bee Week hosted by **MEP Mariya Gabriel**, to ensure that bee health is put at the top of the agenda.

The meeting was opened by **Desislava Taneva, Minister of Agriculture and Food of the Republic of Bulgaria** who highlighted that beekeeping is very important to Bulgaria as honey represents 20% of all bio-products produced. Bee health was underlined as essential and it was further stated that it is important for all to realise the benefits of bees and how important they are for the beekeeping sector. It was outlined that Bulgaria has recently introduced their new programmes for rural development and called for the need to simplify direct payments. The importance of involving bees in agriculture was highlighted and ensuring that instruments exist in order to support policies that in term support bees. It was highlighted that one new measure important for Bulgaria is to regulate the use of honey in schools as young people need to understand the value of honey and where it comes from. It was also stressed that new instruments to support the bee sector is crucial such as new data and more specific data in order to work collaboratively and create transparency.

**Mariya Gabriel MEP and Chair of the “Apiculture & Bee Health” working group of the EP Intergroup on “Climate Change, Biodiversity, Sustainable Development”** welcomed the participants by highlighting the important tradition of the European Bee Week. The focus of the 2015 edition was to define challenges and perhaps lead the way for a new action plan to help beekeeping, pollination, and people working in this field to find support in the EU. The objectives of the conference were to take stock on bee health as well as to find collaborative models in order find solutions and synergies among all stakeholders. It was pointed out that the Beekeeping Forum was added this year in order to provide a platform for beekeepers to contribute to the debate and share their experiences. Beekeepers from four different countries participated and it was called upon MEPs to become ambassadors for bees to ensure that at next year’s edition all Member States are represented to share their own challenges and specificities. It was also called upon all stakeholders to mobilise and work together at all levels.

**Gaston Franco, former MEP and initiator of the European Bee Week in the European Parliament**, reiterated the need for every Member State to have an MEP act as an ambassador for bees in order to mobilise and work together at all levels. The continuation of the European Bee Week was praised already looking forward to the 5th edition to be held in 2016.



**Luis Carazo Jimenez, Head of Unit “Animal Products”, DG Agriculture and Rural Development, European Commission** outlined that the Common Agricultural Policy has always found a place for bees within its different tools, making it possible for Member States to decide on measures that support bees and beekeeping activities within the rural development programmes. It was emphasised that the uptake of measures has grown over time and is the best indicator of the increasing concern for national and regional authorities on the need to provide support to bees, bee farmers and the beekeeping industry. It was stated that apicultural programmes are applied in all Member States stressing that the uptake and efficient expenditure is remarkably high. It was underscored that the utilisation of the funds show that national and regional authorities take the implementation of such programmes seriously. It was pointed out that the apicultural programmes for 2014-2016 include some new measures with regards to varroa control, beehive invaders, market monitoring and enhancement of the quality of apiculture products in order to make the programmes more fit for purpose. The need for more assessment on the number of beehives was underscored stating that it will be taken into account in future financial allocation. It was stated that this assessment will provide a better tool to monitor and follow the development of bee populations in each Member State. It was concluded by informing that for the 2017-2019 programmes it has been proposed to introduce an element of transparency that informs citizens why and why not some measures have been taken by national authorities.

**Luc Bas, Director of the European Regional Office, International Union for Conservation of Nature**, stressed the struggle of bee health gaining the attention that it deserves highlighting the sense of urgency as pollination is the basis of everything. It was reiterated that all participants are friends of the bees, which unites all stakeholders here and provides opportunities for collaboration and where to accelerate the agenda. The importance of the European Red List of Bees was raised underlining that it has assessed all 2000 wild bee species in Europe, and that 9.2 % are threatened with extinction. It was stressed that the value of wild and domesticated pollination is worth 153 billion globally and 22 billion annually in the EU. Intensive farming, large-scale habitat loss, climate change, urban sprawl, and infrastructure were mentioned as some of the most pressing threats. It was stated that some smart steps have been taken in the last CAP reform stating that it is necessary in the next phase to provide evidence and outline the benefits of sustainable farming, which can overall lead to more ambitious steps in the future. It was underlined that harmful subsidies still exist and it was urged that Member States should use the flexibility to realise its opportunity to promote sustainable agriculture and improve the baseline quality of farm land for bees by extending the area required for biological focus areas. It was also argued as essential to continue to encourage arable farmers to promote more diverse and abundant mass flowering crops for bees within their farm landscape.

**The session entitled “Bees at a crossroads: State of play”** was chaired by **Alojz Peterle MEP** who stressed that when bees are at a crossroads, humans are at a crossroads with them.



**Dr. Dennis VanEngelsdorp, Honey Bee Lab, University of Maryland** outlined the current situation in the US where honey bee colonies have been monitored for the past nine years. It was stated that last year (2014-2015) resulted in a higher loss of bees in the summer than in the winter. It was highlighted that something is happening in the system where a constant rate of bees are being lost year round. With regards to beekeeping in the US it was pointed out that there is no concern of bees going extinct but that large commercial beekeepers will go extinct as they are not able to replace their losses at the rate they need to stay in business. The US bee industry relies on trucking colonies across the country to pollinate different crops. It was stated that studies show that migratory beekeepers lose fewer colonies than non-migratory beekeepers. It was pointed out that if there is a stress involved with moving the migratory beekeepers are able to overcome those stresses through management practices. It was underlined that there is no simple solution to what is killing the bees but a compilation of several solutions interacting. It was stated that parasites, pesticides and poor nutrition are the basic parts that either act on their own or in synergy to cause mortality. It was underscored that varroa mite is of great concern for honey bees. The Honey Bee Lab has been conducting a national honey bee disease survey where the mite levels are monitored and populations are randomly selected from across the country every year. It was explained that 78% of beekeepers through September and November have mite levels above a threshold that is believed that those colonies can survive. It was underlined that something is going on with mites pointing to the possibility of the viruses changing or the possibility of pesticides accelerating the mite. It was showed that 80% of bee breed samples taken have a detectable level of pesticides. The most commonly found products are the varroacides, which are the chemicals that beekeepers apply to the colonies in order to control varroa mite. It was pointed out that we know that those chemicals aren't good for bees but it is better than the alternative. Beekeepers are in a difficult situation as they need to treat varroa mite in order to keep their colonies alive with products that are hurting bees. It was stated that neonicotinoids that get a lot of attention in the media are not commonly found in samples. The reason for this was unknown but it was pointed out that it could be because they break down fast in sunlight. Further, it was emphasised that it is not just about finding a product but how much of it you find. With regards to hazard quotations it was underlined that only about 6% of samples have pesticide levels that are high enough to be thought to cause any damages to colonies at all. When varroa mite is examined with regards to hazard quotations it is found that those colonies that have between 10-25 mites per 100 have the highest pesticide load. It was underlined that a relationship is starting to be seen here and perhaps what is happening is that as bee colonies are exposed to pesticides it is killing the adult bee population but not the mite population. This means that there are higher levels of mites per bee in colonies and may be acting as land mines in the environment spreading mite loads across the landscape. It was stated that the Honey Bee Lab is starting to look at these mite loads as not always being a natural growth but because of invasion from collapsing colonies as an indirect effect from the concentration of the mites because of pesticide exposure. It was stressed that bees are dying due to a multitude of reasons and multiple strategies to solve these problems were advocated.



**Marianna Paolino, Policy Officer Pesticides and Biocides, DG SANTE, European Commission**, provided the state of play on plant production product legislation. It was underlined that the criteria for the approval of pesticides in EU legislation provide a specific reference for honeybees. It states that approval is only given when the intended use confirms that there is a negligible exposure to honeybees or no unacceptable acute or chronic effects on colony survival and development. It was also stressed that the effects on larvae and behaviour must be taken into account. In addition there is applicable since January 2014 for active substances new data requirements for bees, which calls for the effects on bees to be evaluated and assessed considering residues and metabolites in pollen, nectar and water, as well as dust drift for seed treatment. There was previously a main focus on acute oral and acute contact toxicity but this has now evolved to include chronic toxicity, effects on development and other life stages, and sub-lethal effects. It was stated that the new data requirement is constructed in a way that provides more flexible structures as well as for test guidelines to be updated more frequently on the basis of new scientific developments. In 2011 the European Commission asked the European Food Safety Authority to review the risk assessment scheme for plant protection of bees. EFSA provided an opinion on the science behind the development of a risk assessment for bees in 2012 and as a second step they prepared a guidance document on the risk assessment of plant protection products on bees. The terms of reference asked for a broader assessment not just covering honey bees but also bumblebees and solitary bees. This resulted in three separate risk assessment schemes as well as a separate scheme for water consumption and for metabolites. The new schemes take into account chronic risk for adults, risk to larvae, risk from guttation water, cumulative effects, as well as the consideration of risk from foraging plants in field margin and the adjacent crop and succeeding crops. It was also explained that the routes of exposure is more detailed accounting for the consumption of pollen, nectar, and water. It was pointed out that while the EFSA study was ongoing, new scientific information appeared, which triggered the review of the risk assessment of neonicotinoid insecticides. EFSA was therefore also requested to assess the risk assessment on the basis the information available at that time and found a high acute risk for some uses of pesticides containing imidacloprid, clothianidin, and thiamethoxam. Based on the EFSA Conclusions, the Commission proposed to significantly restrict the use of pesticides containing those 3 active substances. It was therefore decided that plant protection products and treated seeds will only remain available to professional users for crops not attractive to bees, in greenhouses, for winter cereals and post-flowering foliar application. In the specific legislation, the Commission indicated the commitment to initiate a review of any new scientific information within two years. In this framework, EFSA has just closed the call for data and will be starting the review.

**Vincent Dietemann, Agroscope, Swiss Bee Research Center** conveyed the challenges faced when dealing with honey bee diseases. It was stated that honey bees have been studied for quite a long time along with the diseases affected by them. It was underlined that varroa mite causes the most damage and is the global enemy number one. It was also pointed out that depending on the countries local phenomenon also occur. It was stressed that there are various situations where diseases cause problems for bees and uncertainty exist on how





to best deal with such situations. A short background was provided as to why problems of honey bee diseases exist. It was explained that before beekeeping, honey bees lived in tree cavities or in the ground, and since beekeeping started they live in very close proximity in hives. The fact that they are also moved around provide the perfect conditions for increased contamination and the risk of foreign diseases. It was also pointed out that varroa mite has already eradicated the great majority of wild honey bees in the US and EU. Every colony that exists is now thanks to beekeepers. It was stressed that history is repeating itself as the same phenomenon is starting in Italy with the small hive beetle and the consequences of its introduction in Europe are still unclear. Non managed bees were also touched upon stating that they are not used commercially so they are less studied and less knowledge is available. What is known is that they do have parasites and there is some indication that wild bees and honey bees exchange parasites or viruses and the effects of this are unknown. It was also underlined that there are no control methods or treatment for wild populations. It was underscored that it is important for beekeepers to control the disease in colonies not only for the spillovers but to keep the stocks for pollination. It was pointed out that a colony loss due to diseases and other factors can vary in space and time and these other factors might not be under direct control of the beekeeper. However the beekeeper can prevent and cure the diseases in the colonies through health checks and necessary treatments. It was stated that in order for this to be possible there are two major challenges that need to be tackled. Firstly, treatment and control methods need to be available. Secondly, once the knowledge is there it needs to be transferred to the beekeepers. With regards to the treatment and control methods there is no treatment for most honey bee diseases and in some cases there are treatments but we don't want to use them because of problems with resistance and contamination of bee products. With regards to varroa there are some alternative treatments but they are difficult to implement and provide room for mistakes with the conclusion that colonies are still lost. It was therefore stressed that more research is needed to develop better methods. There is a lot of research ongoing but the use of it is not clear at the moment. The need to better translate this into applications was stressed. There is a lot of investment in honeybee research diseases but it is disproportionately small compared to the importance of honey bee disease control. Several reasons were pointed out such as beekeeping being a small industry, which can't fund its own research and development and the fact that beekeeping is a small market, resulting in little interest for research and investment by companies meaning that research is mostly conducted by public institutions with very few funding sources for applied research. The need for long-term investment was stressed in order to apply the research into solutions for beekeepers. It was pointed out that the development of one control method takes a lot of work and time involving different disciplines and expertise and the current system in place makes it difficult to receive funding over the required period. The importance of reaching out to beekeepers and providing education on how to use treatments correctly was also stressed. It was concluded by stating that further challenges for honey bee research include assessing how many are lost, how many do we have, and how many are needed for sustaining functioning pollination services.

**Dr. Dennis VanEngelsdorp, Honey Bee Lab, University of Maryland** reiterated that the loss of colonies is a complex problem driven by multiple causes. It was outlined that with regards



to poor nutrition the supply of biodiversity might affect colony health. It was stated that the issue of pollination became clear in the US with the White House Report that was published earlier in the year. A big part of the report is to get millions of federal control land back into pastures that pollinators can thrive in. In the US and in the EU there is a drive to increase how many plants bees have to forage on. Historically, it was explained that the US has created a huge basic agricultural desert in the last places where there is good forage for bees. It was pointed out that problems have occurred as the traditional grounds where bees would go for the summers have disappeared. There is now a lot of investment and initiatives trying to get natural habitat back into the environment. It was stated that one thing that beekeepers can do about this is to apply artificial protein to their colonies. Several national initiatives were also pointed out such as the creation of the Honey Bee Health Coalition, which gathers all stakeholders to discuss how to help increase survivorship of honey bee colonies. Effort is also put towards getting more pollinator friendly habitat. However it was pointed out that there is a conflict between environmentalist and beekeepers in terms of what to plant for pollinators. Another initiative mentioned is the Million Pollinator Garden Challenge, which encourages citizens to grow a pollinator garden in their backyard. It was also underlined that the perfect green lawn that is often portrayed as picturesque is actually a disgusting sterile environment and does not help bees thrive. It was also highlighted that out of all the agricultural crops, the lawn uses more pesticides and water per acre. It was concluded by stressing that in order to look to the future and how to save biodiversity in general it must come from making meadows and not lawns.

**Vincent Dietemann, Agroscope, Swiss Bee Research Center** emphasised that part of understanding why bees are dying may be linked to nutrition as it is realised that green deserts are not healthy for bees. It was explained that wild bees can be specialist where their survival relies on only one plant species, but there are also a few generalist species that can survive using products from several plants species. It was stated that honey bees are generalists, which is why they are good for pollination. It was also pointed out that wild bees do not usually fly very far from the nest whereas honey bees have a large range. It was underlined that taking into consideration the kind of food honey bees need and the distance that they can fly to obtain it does have an impact on their environment requirements. It was highlighted that the nutritional needs of bees are almost unknown. It was explained that the best indicator available so far is observing what plants they are seen foraging on, but that it is insufficient since we do not know the impact of these sources on the individuals and colonies. The situation is slowly improving for honey bees with increased research on this topic and it was outlined why nutrition is important. Firstly, pollen is the only source of amino acids, vitamins and lipids, which will be mixed with honey to form the bee bread that they store and use as time goes by. It was explained that a forager collects 15mg per trip and an estimated 100 000 trips are needed to fulfil the production of 20kg per year from each colony. With regards to nectar it was stated as the only source of sugar, which fuels the metabolism, and provides the source of energy. In this case it was stated that a forager collects approximately 30mg per trip and 7 million trips are needed in order to fulfil the quota of 120 kg per year, per colony. It was pointed out as essential for a colony to have access to large amounts of flowers to cover its needs. It was highlighted that a



beekeeper can't necessarily compensate for any deficiency of food at least not before the harvest as there is always the possibility of whatever the beekeeper feeds the colony with ends up in the honey and may affect its purity and quality. Bees have an efficient recruiting system to optimally exploit food sources and they are also good at choosing the best food source. It was highlighted that these facts must be considered when wanting to improve their access to nutrition. The importance of quality was also mentioned. It was said that research has shown that the need for diverse food sources are pivotal as it will improve the immune system and better fight diseases. Challenges remain as it was emphasised that it is still unknown what the best food is as well as where to put the food. Two studies were highlighted that indicate that bees do not forage where they might be expected to. A study by Couvillon et al. (2014) found that bees chose natural reserves over agro-environment scheme plots. Pettis et al (2014) examined the effects of pesticides on bees and exposed them to a field treated with pesticides and one that was not. The study found that bees collected more from weeds and wild flowers than from the nearby experimental plots. The need to better understand their foraging ecology in order to better adjust environmental management and improve nutrition was therefore stressed. It was stressed that from the policy-making side it is important to plan agro-environmental schemes based on available and future data and allow for testing the efficiency of those already implemented, and if necessary to improve the cost to benefit ratio of these schemes.

**Alojz Peterle MEP** stressed that the issue of bee health is underestimated and that beekeeping is often described as a demanding and frustrating business for many beekeepers. To add to the debate on why bees are facing such problems it was underlined that it is because we underestimate the generally changed quality of the environment. The importance of bee's immunity system was stressed and that they have in fact been weakened. A reference was made to cancer as the situation is similar with varroa and parasites and the need to address the context in order to successfully deal with the problem. It was stated that the real strategic fight is related to the environment and how to change the paradigm in agriculture. It was stressed that agriculture should be reoriented back to biodiversity and further stressed the need for all stakeholders to collaborate and stand at the same front.

**The discussion with the audience** highlighted best practices among beekeepers with examples from the Champagne region in France where a lot of focus is put on the resource and where the concept of beekeeping farmland has been introduced. It was highlighted that farming needs call for more space but with beekeeping follows the bees can still be fed and the production can be sustained. It was stated that it would be useful to provide an assessment of successful practices as well as lessons learned from bad practices to identify the issues and find synergies and opportunities. It was said by **Dennis VanEngelsdorp** that studies are ongoing that compare the success of beekeepers who do well and those that don't. It was pointed out that the Honey Bee Lab is in its fifth year of conducting national surveys asking beekeepers about what they did or did not and are about to come out with best management practices. **Vincent Diemann** also added that the Swiss Bee Research



Center conducts surveys where beekeepers inform us about their losses and a data mining tool, which helps assess good and bad practices.

With regards to veterinary products used it was asked how this might come to affect farming as well as beekeeping. **Marianna Paolino** indicated that legislation on veterinary products is under re-evaluation. It was also underlined that the Commission is aware about the variability of veterinary products available in different Member States.

It was reiterated that the situation of pollinator health provides a complex situation with multiple causes leading to colony loss with research still ongoing, and the political point of only mentioning that agriculture is to blame does not take into account the broader picture. It was highlighted by **Alorz Peterle MEP** that there are indeed a lot of factors involved but with regards to agriculture and the chemicals used it has in his opinion not improved the quality of the environment and attention must be given to strategies that can re-establish biodiversity. It was further stressed that the complexity of the issue must be tackled by all stakeholders in cooperation.

With regards to the Commission Bee Guidance Document it was highlighted that most Member States have rejected the document and it was echoed that from a legal perspective this is a significant issue. It was said that regulators say it is unworkable and would make it impossible for any plant protection products to register as well as the use of organic farming. Further, it was underscored that the bee risk assessment parameters laid out in the document have been said to be non implementable at the moment. It was stated by **Marianna Paolino** that there is indeed a strong discussion with Member States on the guidance document, which has not yet been approved. It was highlighted that it however entails a political discussion and not a technical or scientific one. It was further said that the majority of forum where the document has been discussed the Member States have said it is implementable for honey bees but that there are still problems for bumble bees and solitary bees. It was underlined that since the document was published test methods and measures have been improved for bumblebees. It was also highlighted that the guidance document provides scientifically sound information as it is produced by EFSA and Member State experts. With regards to the guidance document and sulfoxaflor it was asked why the Commission allows the authorisation of products on the market that are not in aligned with the regulation protecting bees. **Marianna Paolino** replied that sulfoxaflor dossier was submitted before the entry into force of new data requirements and it is approved but also entails a specific requirement of confirmatory information to take into account new scientific knowledge. Further it was underlined that the EU is only responsible for the approval of substances and further evaluation and the placement on the market is up to Member States.

The question of political willingness was raised and the willingness to invest in products that will meet the requirements or not. With regards to **Dennis VanEngelsdorp** presentation it was asked as to why more varroa is found in stationary beekeepers than migratory beekeepers. It was explained by **Dennis VanEngelsdorp** that mites are measured by putting 300 young bees in alcohol and shaking them in order to get a ratio of mite to bee. This was stated as the best predictor of assessing the varroa mite population in that colony. It has been found that colonies with 10-25 mites per 100 have the highest hazard quotation. It was checked several times and it does not make any sense. It brings up a point that was





discussed earlier that scientists need to engage in dialogue with beekeepers and vice versa as it is often heard from beekeepers that mite levels are often higher in the population that was taken into the orchard compared to the ones that stayed behind. One possibility mentioned for this finding is that mites are affecting the immune system of the bees and the mites go on steroids and have more children. Another possibility is that pesticides kill adult bees but not the intended varroa mite. More experiments on this are needed but it was pointed out that it is the density of the mite population that is killing the populations.

The synergetic interaction between varroa and pesticides was also raised. It was pointed out that ongoing studies on the interaction between varroa and neonicotinoids are showing that there is no interaction on worker bees. Another thing that studies are showing is that where there was an affect the biggest affect was from varroa. It was therefore asked what the best way is to square the contradicting results. Pesticide regulation was also highlighted and it was pointed out that there is no need to worry about killing foraging bees as this is looked at under regulation. With regards to the contradicting results it was replied by **Dennis VanEngelsdorp** that he is approaching this from an epidemiological point of view meaning observational studies that are not causational. It was stressed that more hypothesis-driven studies are needed but what can be studied at the moment are correlations. It was mentioned that strong correlations can exist but the science must be conducted as one study on its own is not enough. It was stated as essential to consider what the conditions were when the specific data was produced. It was also highlighted that it is difficult to ignore beekeepers when they continuously repeat that mite levels increase when exposed to pesticides. It was underlined that if we hear it enough we have to figure out what is going on and listen to the data. It was reiterated by **Vincent Dietemann** that research capacity is limited and in order to tackle these issues more people doing science is needed as well as more investment in research.

It was pointed out that beekeeping provides pollination services estimated at 22 billion whereas the EU budget for bees is currently 33 million. It was highlighted that bees produce an immense amount of wealth and that it seems logical to increase the budget allocated to beekeeping in order to fight against diseases and plant more flowers.

All stakeholders further reiterated the importance of dialogue and the willingness to collaborate in order to effectively work together.

**Alorjz Peterle MEP** concluded the meeting by reiterating the importance of science and pointed out that there is a political factor involved in science as someone has to decide what will be studied and from what angle. It was also stated that the UN is in the process of discussing a world bee day, which would contribute to the awareness and importance of bees and the bee sector.

\*\*\*

Contact: Paolo Mattana (EBCD), Secretariat of the Intergroup, [paolo.mattana@ebcd.org](mailto:paolo.mattana@ebcd.org), +32 2 230 30 70