

## Results from the consultation with stakeholders and member states concerning BPD for coexistence of genetically modified maize and honey production

The consultation process took place on:

1. Advisory Group on the Food Chain and Animal and Plant Health on 26 April 2013;
2. Standing Committee on the Food Chain and Animal health (section genetically modified food and feed and environmental risk), on 26 April 2013;
3. Regulatory Committee 2001/18/EC on 14 of May 2013.

### Summary table

Contributor	Remarks	Response of TWG-Maize of ECoB	Follow up
AT	<p>After a brief summary of the factors influencing honeybees' foraging behaviour and attractiveness of different pollen sources, in the AT comments it is assumed that no conclusive evaluation of foraging distances is possible, in particular concerning maize, for which data is largely missing. Due to the lack of data, well-established foraging distances have to be taken into account in the final version of the BPD. In conclusion, the sentence on page 40 of the BPD draft "A rough estimation based on current knowledge of the flying distances covered by honeybees for maize pollen foraging could be in the range of a few hundred metres up to about 1 km." should be rephrased. It is reasonable to presume a mean foraging radius of 3 km (Seeley, 1995), allowing for adequate safety distances that acknowledge the potential distances reported in the literature, which may not be precluded concerning maize pollen foraging.</p>	<p>The conclusions of Seeley, 1995 for mean foraging radius of 3 km are not specific for maize pollen. The extensive review of honeybees foraging is presented in chapter 3.1 of the BPD. This chapter contains, in addition to the information presented by AT, qualitative and quantitative empirical data about the harvested maize pollen, that allows us roughly to produce a range of the flying distances covered by honeybees for collection of maize pollen of few hundred meters up to about 1 km. An important clarification is that the current knowledge does not allow establishment of a statistical relationship between pollen content in honey and distance of beehives to maize crops ( as is clearly stated in chapter 5 of BPD)</p>	Not needed
AT	<p>References in addition to the literature cited in the BPD: Höcherl N., Siede R., Illies I., Gätschenberger H. and</p>	<p>The reference: Pechhacker H. (2003) exists in the current draft of BPD.</p>	<p>Other 3 references will be properly linked and added to</p>

	<p>Tautz J. (2012) Evaluation of the nutritive value of maize for honey bees. <i>Journal of Insect Physiology</i> 58: 278–285.</p> <p>Pechhacker H. (2003) Mais als Bienentracht? <i>Mais</i> 4: 135-136.</p> <p>Seeley T.D. (1995) <i>The Wisdom of the Hive: The Social Physiology of Honey Bee Colonies</i>. Harvard University Press, Cambridge/Massachusetts.</p> <p>Wille H. and Wille M. (1984) Die Pollenversorgung des Bienenvolkes: Die wichtigsten Pollenarten, bewertet nach ihrem Eiweißgehalt und ihrer Häufigkeit im Pollensammelgut. <i>Schweiz. Bienen-Zeitung</i> 7/84: 353-362.</p>		literature cited in BPD.
EPBA	EPBA commented that among the different ways pollen can enter the honey the additional way through the storing of pollen from the previous season should be added and that pollen is not the only source of GMO contamination of honey.	In theory the stored pollen from previous season could be admixed in newly collected nectar by honeybees, but it happens at the time when honey is not harvested from the hive. Therefore this entry route is negligible in comparison to others, listed in chapter 3.2.1 of BPD.	In chapter 3.2.1. "Entry routes of pollen in honey" this possibility will be included, clearly indicating that it is minor, compared to other sources of admixture.
EPBA	It is common practice in several honey exporting countries to feed pollen substitute based on GM soybean meal. Honey labs are reporting honey testing positive for RR soy without the presence of soy pollen.	It is out of scope of this BPD. The current BPD covered only the presence of maize pollen in EU produced honey. BPD for soybean, with respect also to honey production is currently being examined by the TWG-Soybean.	Not needed
EPBA	EPBA pointed out that there seems to be a mixing of definitions of the percentages. Conclusion is based on % weight to weight (w/w). However, the definition used today in all GMO analysis of food including honey is the	The BPD presents results as follows: The legal labelling threshold is defined as percentage of total product (article 12(2) of Regulation (EC) 1829/2003), and because of that the conclusions	Not needed

	percentage of genome copies analysed and has nothing to do with weight or volume. In the laboratory analysis a different definition of percentages could be applied for honey, but the weight to weight approach fails to account for the nectar portion coming from crops that are not just a source of pollen.	(chapter 5) of BPD are based on % weight to weight (w/w). The PCR analysis of GM pollen in honey (chapter 4 of BPD) is expressed as number of DNA copies. The establishment of a factor for conversion of this result to weight % is challenging because pollen in honey comes from several species (as indicated in chapter 4 of BPD).  Nectar is not considered in this BPD because maize does not produce nectar.	
EPBA	In some countries morphological analyses of pollen are computerized, therefore it is possible to carry them out in an automated fashion	The automation of morphological analysis prevents subjective error of operator, but it has the same uncertainty defined by morphological variations of pollen grains.  This approach is adopted in limited number in laboratories and need more profess for wider recognition.	This possibility for advancement of morphological analysis will be indicated in BPD
EPBA	EPBA underlined that in some parts of Europe in late summer maize is the only pollen available to bees (e.g. research in Switzerland has shown maize as the dominant pollen source).	This information is repeated several times in BPD: chapter 3.1.3 and 3.1.4. In chapter 5 is clearly stated: Even though maize pollen could become an important feed source for honeybees in experimental situations or when beehives are located in the vicinity of large maize fields, its final presence in honey is rather rare and therefore is usually classified as minor pollen.	Not needed
EPBA	Whatever rules will be implemented should not be based on a single crop (maize), but should work for both nectar and non-nectar producing plants.	It out of scope of BPD. The scope of this BPD only applies to maize.	Not needed

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EPBA - European Professional Beekeepers Association