International Workshop

on the consequences of the ECJ judgement on GM pollen in honey for GM crop releases and cultivation in Germany and the EU

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WG1: Statement
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In order to ensure the freedom of choice for beekeepers to produce products with or without GMOs, it appears necessary that the measures of coexistence take into account the particularities of these farmers. Beekeepers may be professionals or hobbyists, and the consequences of a contamination of their products by GMOs may be of economic but also of social concern. Moreover, beekeepers may be fix and/or transhumant, able or not to move their apiary, and in any case unable to control where their bees forage since they work with semi-wild animals. The need for transhumance can be explained at different levels: demand by farmers for a service of pollination for their own crops, need for pollinators to ensure plant biodiversity, need for access to sufficient resources (mainly proteins) for the health of the colony, need for beekeepers to ensure their income by increasing and diversifying their production.

Keeping in mind these main features of the beekeeping practice, several points appear necessary to consider when dealing with coexistence of GMO cultivation/experimentation and beekeeping.

First, it has to be noticed that the consumers' demand clearly leans towards GMO-free products (European Commission (2010), Eurobarometer: Biotechnology Report, October 2010 http://ec.europa.eu/public_opinion/archives/ebs/ebs_341_en.pdf). Moreover, hive-products appear to be «natural» products for the consumer and the presence of GM products in these would break their quality image. In a context of freedom of choice, corollary to the use of GMOs, it is essential that beekeepers are able to choose to produce products without GMOs to satisfy the demand of the consumers. Thus, all hive-products that may be intended for human consumption have to be considered (pollen, honey, royal jelly and propolis).

Second, a fundamental difference should be kept in mind between GMOs authorized for pollen as or in food and non authorized GMOs. In the first case, the products containing more than the labelling threshold (0.9%) have to be labelled as « containing GMOs ». In the second case (experimental field releases and certain cultivated crops such as corn MON810), the products must not contain any GM product (or at a level below the detecting level of the method) since the pollen produced from these GMOs is illegal. As a consequence, in theory, each of these two cases would require a different consideration since the level of tolerance is different. However, for the beekeepers, the final consequence will be the same: a loss of income due to a loss of value of their products or of their compulsory destruction. Moreover, such distinction may appear to be difficult (if not impossible) to settle in practice and finally, the only way to ensure protection in both cases would be to consider the higher protective measures (zero-tolerance) for all GMO releases in the environment.

Third, in order to practically set relevant coexistence measures and avoid the contamination of hive-products by GMOs, both the biology of the bees and the biology of the plants have to be considered. The goal being to « take appropriate measures to avoid the unintended presence of GMOs in other products » (Art. 43 of Regulation 1829/2003 EC), distances between hives and GM fields must be established to allow beekeepers to produce products without GMOs. These distances have to be defined from the apiaries (fix or transhumant) and not from the new settling GM producer, in order to determine a security perimeter around each apiary, within which the
production of products free from GMOs can be ensured.

Foraging distances of bees are an elementary factor to take into account since they represent the distance to which bees can be exposed to GM crops, bring back GM products to the hive and thus contaminate hive-products. Scientific literature exists on foraging distances of bees, showing that bees may fly up to 10 km to find their resources, depending on the weather conditions and the abundance of profitable forage (e.g. Beekmann & Ratnieks, 2000; Pasquet et al., 2008). Because of the high variability of foraging activity depending on the place and the time, a sufficient margin of safety should be used to ensure that even the « worst case » is considered, resulting in a given area of protection around beehives, for example 10 km.

Pollination flow is a phenomenon likely to occur in openfields (Timmons et al., 1995) and may increase the area of dissemination of GM crops and increase spatially the potential exposure of bees to GM products and thus the probability of contamination of hive-products. Depending on the plant, this phenomenon may be more or less important and each case (each GMO) will have to be considered specifically on this point. Then, a security factor relative to pollen flow should be added to the security distances established around hives.

Finally, considering the GMO released (authorized or not in food), the foraging distances of bees and pollen flow of the GM crop, protected areas around beehives should be defined where beekeeping productions can be ensured either without GMOs, either under the threshold of 0,9%

But since biology is variable and depends on many uncontrollable factors, contamination may still happen despite broad protection measures. Coexistence measures thus may include compensation measures for beekeepers, clearly defined prior to the beginning of the release (experiment/cultivation), in case of insufficient protection of beekeepers in the field.

Once coexistence measures are established, a regular monitoring and control of efficiency of the measures applied will be necessary (hive-products analyses), in order to adapt these measures if needed (higher distances and compensation for aggrieved beekeepers because of the unexpected contamination).

In any case and to conclude, the costs induced by GMO cultivation or experiments (analysis of hive-products, compensation for loss of value or destruction of contaminated hive-products, etc…) should not be borne by farmers (beekeepers) producing without GMOs. The choice of some farmers to cultivate GMOs must in no way harm other productions, including beekeeping. It is only by starting from this point that consistent and fair decisions can be established.

References

