

## 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

Berlin, December 13-14, 2011



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#### Detection of GMP pollen in honey

According to Regulation (EC) No 1829/2003, particular labelling requirements apply to food ingredients from authorised GMO in the EU. Therefore a honey is liable to labelling if it contains more than 0.9 % of pollen from GMO authorised as foodstuffs in relation to its total pollen content. Pollen from gm plants which are not, or only to a limited extent, authorised for food, must not, even in trace quantities, be present in honey.

The control of the percentage of gm pollen in relation to the total pollen content is a difficult analytical challenge, since it is not possible to differentiate between gm pollen and conventional pollen by a microscopic pollen analysis. With current quantitative real-time PCR methods the percentage of genetically modified DNA sequences of a GMO in relation to species-specific DNA can be determined.

For a molecular-biological analysis, DNA must be extracted from the pollen contained in the honey. However, honey is a difficult matrix for DNA extraction. A possible extraction method including a pollen accumulation step is available on the BVL homepage.

First, the yielded pollen is screened for the presence of genetically modified sequences by a combination of different element- and construct-specific methods. Ideally, positive findings are then specified by means of standardised and validated event-specific detection techniques. For unauthorised GMO and GMO which are only authorised for food to a limited extent, a qualitative PCR detection is sufficient, while GMO with a general authorisation for food have to be quantified. In order to be able to reliably quantify the percentage of GMO in relation to species-specific DNA, the DNA content of the target species must be sufficiently high. The DNA content depends on the quantity of pollen present in the honey as well as on the composition of the pollen, and varies greatly between different honeys. The sensitivity of a method may additionally be reduced, e.g. by inhibitory substances.

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