

## „Organic“ thresholds for GMO and pesticides?

During evaluation and discussions on revision of the European organic regulation special thresholds for organic products considering GMO and pesticides were presented as options or at least named for example in the public online consultation. Special „organic“ thresholds would have a strong negative socio-economic influence on the organic sector. Due to their ubiquitous prevalence and the risk of carryover for example in facilities for transport, packaging or cleaning special “organic” thresholds would be afflicted with practical difficulties. We will highlight some of them together with socio-economic effects (impact assessment).

### 1. GMO-threshold for organic products: impact assessment and practical difficulties

#### Impact assessment

The German umbrella organization “Bund Ökologische Lebensmittelwirtschaft” (BÖLW) published a report on the disadvantages of GMO and the costs of keeping GMO traces out of food products. Economic consequences for farmers, producers and traders were assessed.

Costs for protection of accidental GMO presence on farm-level depend on the plant. For example for potatoes they are estimated to be around 1.5 to 3.2% of product price, for rapeseed around 10 to 41%.

In food processing, costs can be divided into

- 1) once-only investments (separation of goods, implementation of quality assurance systems),
- 2) running costs (sampling, analyses, vocational training) and
- 3) costs in case of damage (withdrawal of products from the market, purchase of replacement, production stop, cleaning of facilities).

The economic damage for avoiding GMO traces for German and European food industry can only roughly be estimated to reach a multi-digit million number (without costs in case of damage). The burden is not distributed equally between the companies. Especially those who process or trade corn, soy and rice, according to our experience, are affected. At the processor-level high costs accumulate which can lead to strong distortion of competition. This applies especially for markets with a small margin of profits like the German food market.

The burden of high costs for protection of GMO-contamination is supported by a study of Friends of the Earth. (Quelle): „Contamination incidents make up a major part of the costs of GM crops. As of January 2011, there were more than 300 reported cases of contamination incidents worldwide.<sup>8</sup>

Some of these cases have resulted in major worldwide trade disruptions and have cost farmers, food processors and supermarkets billions of dollars, with many liability cases still pending.”

A special threshold only for organic products would lead to even higher costs, especially in case a contamination is detected. (see above).

#### Practical difficulties

Practical difficulties with a GMO-threshold lie in sampling and analysis which are not as easy and reliable as often assumed. An expanded measurement uncertainty can result in differing results. Especially GMO is usually not equally distributed in a batch, it usually appears in “clusters”. Several samples from one container can lead to diverging results – in the extreme from 100% GMO to not detectable. Analytical results therefore often rather give a snap shot than reliable information on a whole batch.

Accidental GMO-traces do actually occur and they occur more often: The European Alert System for Food and Feed (RASFF) shows a rapid growth of notifications on goods which contain non-authorized GMO.

#### Consequences

A separate, lower threshold (and labelling requirements) for organic does not solve the problem and would make organic production impossible at least in areas with GM growing. The risk of accidental presence of GMOs is the same for conventional and organic food. In order to ensure that organic products are GM free, the EU legislator would need to stop approving GM crops on European land or at least set up binding rules to protect GM free farming.

GMO crop producers must be fully liable in case of contamination, but also for prevention costs such as isolation distances, segregation along the food chain, sampling and analysis. All these measures must be based on the "polluter pays" principle. This cannot be reached by imposing a specific threshold for organic products.

## **2. Threshold for pesticides in organic products: impact assessment and practical difficulties**

### Impact assessment

Monitorings (f.e. by German authority CVUA, <http://oekomonitoring.cvuas.de/aktuelles.html>) over the last few years have shown, that the presence of pesticides residue is much lower in organic products than in conventional ones. If pesticide residues in organic products occur, they are in most cases accidental and unavoidable contaminations caused by conventional agriculture or environmental background contamination.

Like GMO traces pesticide residues may be found ubiquitously. Evidence was found in different studies:

- The German environmental organization “Bund für Umwelt- und Naturschutz Deutschland” (BUND) found evidence for environmental background pollution with glyphosate and its metabolite AMPA. It is based on findings of glyphosate and ampa in urin of 182 individuals from 18 european countries. (<http://www.bund.net/index.php?id=18026>)

- The German Federal Environmental Agency compared analytical results on pesticides from 2009 to 2011 (annual averages) in streaming water with the environmental quality standard. Sporadic exceedings were detected for 2,4-D, 4,4-DDT, sum of DDT, Bentazon, Dichlorprop, Diflufenican, Dimethoat, Diuron, Isoproturon, MCPA, Mecoprop, Monolinuron and Parathion-Ethyl. More often exceedings were found for the biocide TBT. The environmental quality norm considering the ceiling concentration was exceeded sporadically for Isoproturon and HCHs and more often for TBT. (reference: <http://www.umweltbundesamt-daten-zur-umwelt.de/umweltdaten/public/theme.do?nodeIdent=3170>)

- “Monitoring by the US Geological Survey (USGS) has revealed that glyphosate and its breakdown product Aminomethylphosphonic acid (known as AMPA) are frequently found in rainfall and rivers in the Mississippi Basin, where most GM crops tolerant to glyphosate are grown. <sup>1</sup>The USGS found glyphosate in more than 60% of air and rain sampled at three locations in Mississippi, Iowa and Indiana, with AMPA found in more than 50% of samples, at concentrations up to 9.1ng/cubic metre and 0.49ng/cubic metre respectively. [5] Researchers from the USGS estimate that about 1% of glyphosate sprayed in catchments ended up in surface waters in the four areas where monitoring was conducted in streams and rivers. Concentrations varied between different river systems that formed part of the monitoring programme. The highest median level of glyphosate detected was 5.7 µg/litre. [6] This level would not be allowed to enter public supply untreated under the EU Drinking Water Directive.” (reference: [gmwatch.org](http://www.gmwatch.org): It's official: Glyphosate used on GM crops found in US rivers, rainfall [http://www.gmwatch.org/index.php?option=com\\_content&view=article&id=13393](http://www.gmwatch.org/index.php?option=com_content&view=article&id=13393))

- Since January 2009 there has been an increasing of laboratory results showing Biphenyl in fresh herbs, spice herbs, herb teas, other similar infusions products, tea, mate tea and hops. Assessment of these analyses showed that 70% of the cases exceeded the maximum residue level of 0.01mg/kg (which holds for all food, also for conventional). Thorough investigation of the cases followed. The Scientific Advisory Board of the BNN assessed the findings and in brief got to the conclusion, that in all the analytical evidence concerning Biphenyl in herbs from organic agriculture to date there have been no indications that Biphenyl could have come from an active ingredient or aid in materials not permitted in the positive list in appendix II of (EC) No. 889/2008. There is equally no proof that the regulations for organic agriculture – in terms of general exclusion of non-permitted materials in the value added chain from producer to consumer -have not been followed. The cause is allocated to the general environmental pollution with Biphenyl related to natural (mineral oils and their products of

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<sup>1</sup> USGS press release, 29 August 2011. “Widely Used Herbicide Commonly Found in Rain and Streams in the Mississippi River Basin”

combustion) and technical sources (colours, preservatives, petrochemical industry). Taking into consideration Biphenyl findings only in isolation, the findings themselves do not allow in general the denial of labelling as organic quality (as defined in article 91 of (EC) No. 889/2008) (reference and further information: [http://www.n-bnn.de/sites/default/dateien/bilder/Downloads/PublicStatement\\_HerbsBiphenyl.pdf](http://www.n-bnn.de/sites/default/dateien/bilder/Downloads/PublicStatement_HerbsBiphenyl.pdf))

Above mentioned studies show strong evidence of ubiquitous prevalence of pesticides in the environment. Presumably, avoiding pesticide contamination causes extra-costs for companies in the organic food-chain which may be compared to the extra-costs for avoiding GMO (resulting from once-only investments, running costs and costs in case of damage).

So far, there has not been an estimation of the amount organic companies would have to spend on top. It should be taken into consideration though, that the use of pesticides is far more common in Europe than growing of GMO. Driftage might affect a higher percentage of organic agriculture. Dependent on the agricultural structure, extra-costs to shield against pesticides could rise as high that producing organic would be not economically possible.

#### Practical difficulties and consequences

Difficulties in sampling and analysis exist and are partly similar to the ones described for GMO (see above)

Organic products are defined through the processes by which they are produced and processed, e.g. by the non-use of chemical synthetic plant protection agents and mineral fertilisers. The legal regulations for organic agriculture also refer to the production processes and their inspection/certification. Organic products are therefore not defined as pesticide free and the organic regulations consequently do not contain maximum allowable residue limits. Organic agriculture cannot be completely shielded against deposition from surrounding conventional agriculture or environmental background pollution. Therefore, pesticide residues might be evidence of illegal use of substances not permitted in organic agriculture. But those residues might as well be tracked back to unavoidable or accidental contamination. A threshold would have to reliably differentiate between usage of pesticides and unavoidable or accidental contamination. Because of the multitude of pesticides, plants, combinations and application techniques, defining such a threshold might be difficult and would imply the risk of decertification of products although they had been produced and processed according to organic regulations. This as well would result in an amount of extra-costs not yet estimated.

**Case-by-case evaluation and investigation of pesticide findings in organic products still seems the most appropriate answer, preventing extra-costs and cutback of cultivation areas.**