

Theorie in der Ökologie
Band 17



GM-Crop Cultivation – Ecological Effects on a Landscape Scale

Proceedings of the Third
GMLS Conference 2012 in Bremen



Broder Breckling
Richard Verhoeven
(eds.)

Foreword

Currently within the European Union, there are 47 genetically modified (GM) crops that have been approved. These consist of 27 maize varieties, 8 cotton, 7 soybean, 3 oilseed rape and 1 variety of each sugar beet and starch potato. The vast majority of these crops received approval only for import. Some of these are on the market as food and feed or as additives to them. Only two GM-plants, one maize variety and one potato, are authorised for cultivation in the EU so far.

Although genetically modified organisms (GMO) are widely rejected by consumers, producers and distributors in Europe, there are numerous GM events that have applied for EU market authorisation. There is an ongoing controversy in science and among regulators whether GM crops are safe and what the requirements are to demonstrate the absence of relevant risks in a trustworthy and reliable way. The undesirable and adverse effects on human health and the environment cannot be excluded. The established conventional agricultural economy as well as organic agriculture could be at risk.

On June 14-15, 2012, more than 60 experts from science and administration met in Bremen for the third conference on Implications of GM-Crop cultivation at Large Spatial Scales – GMLS III. They discussed a variety of topics on ecological questions and non-target effects, socio-economy and coexistence, methodological aspects and modelling, authorisation and regulation of GMO.

This volume compiles 28 contributions to the GMLS III conference from Argentina, Ghana, the United States and from eight European countries. Selected contributions are published in the series *Implications of Cultivation and Monitoring of Genetically Modified Organisms* of the SpringerOpen Journal *Environmental Science Europe* that refers to the GMLS conferences, but also has additional contributions. Both the conferences and the publication series attract a high degree of interest, evident from the high download numbers of the articles.

The editors gratefully acknowledge funding of the *Gekko Foundation* and the *Fondation Charles Léopold Mayer pour le Progrès de l'Homme*. Without their support, the conference would not have been possible.

Broder Breckling & Richard Verhoeven

Organising committee of the conference

Broder Breckling, University of Bremen, University of Vechta

Hartmut Meyer, ENSSER

Gunther Schmidt, University of Vechta

Winfried Schröder, University of Vechta

Christoph Then, Testbiotech

Richard Verhoeven, University of Bremen

Wiebke Züghart, Federal Agency for Nature Conservation



Participants of the GMLS III Conference in Bremen



Maike Schaefer

Vice-chairperson of the parliament-group of Bündnis90/Die Grünen Bremen
and speaker of environmental policy

**Dear Ladies and Gentlemen, dear guests,
welcome to Bremen and welcome to the GMLS Conference on Implications
of Genetically Modified Crop Cultivation at Large Spatial Scales.**

I am very proud that this international conference is taking place here in Bremen for the 3rd time.

The conference is held at the House of Science, which is located right in the historical city centre, near the Cathedral the Market Place with the House of Parliament, City Hall, and the Chamber of Trade and Commerce.

When I had a look at the conference program, I was honestly surprised not only by the many presenters from all over the world, but also by the wide range of the different and interesting aspects of GMO-assessment. The Conference attempts to bring together leading scientific expertise to assess impacts of genetically modified organisms in the context of agricultural applications. And I will comment the relevance of the conference topics from a scientific but also a political perspective.

Bremen's long experience in risk assessment

When we politicians talk these days about risk assessment in Bremen it is more about a financial risk assessment, being a poor federal country. So we can state, for the public institutions as well as the private sector: a good considered risk assessment is absolutely necessary.

And of course this applies also to genetically modified organisms, to chemicals and to other technical approaches. Having worked for many years as a scientist in general

ecology and ecotoxicology, I am well familiar with the requirements of environmental risk assessment. Compared to chemicals, GMO require a more comprehensive analysis. This includes not only a compositional analysis but also assessment of physiological performance, aspects of cultivation and ecological effects as changes in biodiversity. Monitoring is an additional task.

To make reasonable decisions, policy depends on an information basis that is well balanced. It is highly important, that not only the view of the decision makers is available. For a reasonable risk assessment, critical and independent research is indispensable. The public funding of scientific expertise that is not involved in a specific interest is a MUST for regulators if they want to be efficient.

And please allow me this statement – it would be even more helpful, if more scientists would spent at least some time of their carrier as politicians- because my experience over the last five years- since I am into politics- is, that we have a great lack of knowledge and environmental understanding within the group of decision makers. We have a great deal of relevant and helpful information published by scientists and researchers ... but when it comes to practical decisions in politics, we have a lack of experts there and a high number of non-experts, often more driven by the interests of their electors or of their party platform or lobbies, than by objective scientifically facts.

But I don't want to wallow in self-pity and pessimism. I will rather show you the optimistic sites:

GMO policy in Bremen

Let me inform you about some political decisions the Free Hanseatic City of Bremen has made. Bremen has decided that agricultural contractual partners of the city working on municipal areas are obliged to cultivate conventional varieties. Bremen also officially declared itself as a GMO-free district, which means that all farmers here committed themselves only to grow conventional crops, no GMO. In the general public, this policy has a considerable support.

As a politician, I have to emphasise, that in decision making on GMO, scientific information is highly important. Value-based consumer preferences and the protection of GMO free production are at least equally relevant. The value preference for food being as natural as possible has a very high priority in consumer decisions here in Germany. More and more people go for organic food.

I was actually contacted by the local bee-masters some months ago, who were eager to learn something about bees being at risk by GMO. I was really surprised and happy to see, that these men were seeking contact with politicians and researchers. And by chance only some weeks later, we had the judgement by the European Court that even the smallest traces of unapproved GMO found in honey, means that this honey may not

go into the shops. And that means all the concerned bee-masters have the right to bring their case to trial. In my eyes, this was a great success.

I expect that the conference results and its documentation will be appropriately considered on the scientific, on the public and on the administrative level. For this conference, the organising committee has brought together contributions from Europe and overseas which provide important new insight and experiences. So I expect a relevant impact in the discussion on GMO and the regulation of the involved risks.

I hope, that your stay in Bremen offers useful scientific information, that you make useful contacts, and it will bring further inspirations for your personal work.

Enjoy your stay in Bremen. Take some time to enjoy the highlights in the city and enjoy the conference.

Bremen, June, 15th 2012

Maike Schaefer