What if...

...something goes wrong with a genetically modified organism (GMO) ? Of course we (hopefully) only talk about GMOs, approved to be safe. But most substances, which later caused trouble and were banned, had been scientifically proven to be safe at one point. Errors are a fact of live and should be taken into account. When this occurs with a GMO, we will have to try to get it back and to eliminate it from products, fields and seed supply. There is no acceptable threshold for unsafe GMOs. Their approval will be revoked. Any level of contamination will be prohibited. If unlabelled contamination between 0,3 or 0,5% in seeds are accepted, no seeds of that species would be safe to plant - they could all be contaminated.

a hypothetical risk?

Not really: In the USA such a case has already happened. "Starlink" maize by Aventis (now Bayer) had to be recalled in 2000. The costs are estimated at more than 1 billion US $. "Starlink" is still not fully eliminated from US maize seeds. Even 3 years later contamination was found regularly. Fortunately, maize is relatively easy to control: hybrid seeds, no wild relatives, no seed survival in the soil. Imagine a Starklink case with oilseed rape in Europe.

Who's risk?

In such a case the GMO company would not pick up the bill, the seed industry would refuse any liability: It has all been legal. Consumers would not be amused. Processors and retailers would require purity guarantees. Insurances categorically refuse to cover such risks. Guess who is left? Remember how farmers last time had to go begging for government compensation of their damage and still lost consumer confidence?

No risk no fun?

True, there is no risk-free economy or environment. There is no progress without the willingness to take certain risks. But it might be a good idea to make sure, your customers, the public, insurances and the companies selling GMOs are willing to take these risks. Ask them about it.

magic numbers

Threshold levels are a complicated field of scientific speculation and strong industry lobbying. Ordinary people, like farmers, politicians and consumers rather have feelings about them being high or low, acceptable or not. In this context seeds have one unique property no other substance has: They replicate and multiply and can transfer their traits to others. Therefore final contamination can increase from an initial threshold level.

0,9

For food and feed labelling an arbitrary and political threshold of 0,9 % has been established. Anything containing 0,9 % or more GMOs must be labelled. This refers to the end product. However, would you buy supplies contaminated with or close to that threshold, if you wanted to make sure, you don't have to label your end product? Certainly food processors and retailers don't take that risk. In contracts with their suppliers purity levels well below 0,9 % are established for good reason.

0

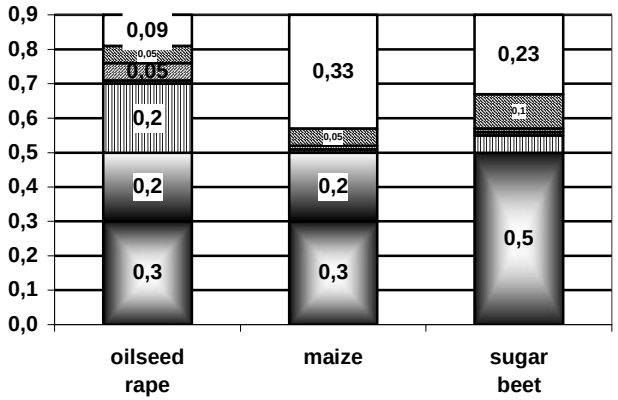
There is no absolute Zero in nature and live. Once released into the environment this is also true for GMOs. It is impossible to guarantee that not a single kernel of seed is GMO. You would have to test them all - and nothing would be left to plant. This is not a matter of technical detection levels in a given sample (they are extremely low), but a question of the statistical probability, that a sample is representative of the whole batch it is taken from.

0,1

Is doable: If 3000 kernels taken from a given seed-batch do not contain a GMO, then the batch will not contain more than 0,1% (with a 95,8% probability to be exact). Keeping seeds as pure as that is not an easy task. No GMOs must be grown in the vicinity and no contamination sources must occur in processing. But it's doable. Syngenta confirms they do it even in the US. In Austria this purity level is the legal requirement since 2002 and all seed suppliers conform to it. Seed companies have to test the purity level of their seeds anyway. Why should they be allowed to withhold this information from their customers?

science-fiction?

The graphic below shows official projections of average contamination levels of the harvest at a seed contamination level of 0,3 - 0,5 % and the remaining safety margin (white box on top). They are derived from the EU's Scientific Committee on Seeds opinion on threshold levels (table below). Members of the Committee have since admitted, that these figures no longer reflect the latest state of scientific knowledge. For instance 0,2% volunteers for rape seed are rather 0,4%. 0,01 % volunteers (bolters) for beet are unrealistic, 0,2% cross pollination in maize is extremely optimistic, contamination in harvest and transport will be substantially higher in every case it happens, even though it may be correct as a general average. The Committee cautiones: *"These figures are mean values and assume good agricultural practice including reasonable attempts to isolate crops and segregate products."* However, mean values and the type of "good agricultural practice" imagined by the scientists are different from the farm-reality.



Seed	0,3%	0,3%	0,5%
Cross pollination	0,2%	0,2%	0%
Volunteers	0,2%	0%	0,05%
Harvesting	0,01%	0,01%	0,01%
Transport	0,05%	0,01%	0,1%
Storage	0,05%	0,05%	0,01%
% achieved	0,81%	0,57%	0,67%

0,3

is not acceptable: Harvest will be contaminated above the accepted level regularly. This creates substantial, avoidable risks for farmers, no insurance willing to cover. Contamination of 0,3 triggers the need to test all products, even where no GM crops are planted. Quantitative GM analysis would be required (250-400 € per test). Special problems will occur for farm saved seeds.

Should farmers know what they plant?

This is what labelling requirements for the "adventitious and technically unavoidable presence of genetically modified seed in non-GM seed" are all about: Will seed companies have to indicate the level of GMO contamination in non-GM seeds or can they sneak in a little bit of GMOs without telling their customers?

The vast majority of consumers and farmers, retailers and food processors in Europe rather want to avoid GMOs in their food and their products. If a product contains more than 0,9 % of GMO (per ingredient) it must be labelled, reducing its price and saleability.

If GM seeds are planted in Europe, seed companies have to test their products for GM contamination anyway. Why then should they have the right to withhold this information from the farmers?

This has massive implications on the practical aspects of so called co-existence of GM and non-GM farming:

- If farmers cannot be sure their own seeds are clean, how can they defend themselves against GM contamination of their fields?
- Also, if some contamination must be assumed to occur in any seeds, this will require costly testing of all harvest, no matter if GMOs are planted in the region or not.
- Finally, saving seeds from their own harvest will become a risky business for farmers. No wonder, seed companies already suggest farmers better buy certified seeds from them every year.
- When looking at the safety-margin of 0,9 % of acceptable GM contamination as a cake, the question simply is: Who will get what slice of the cake? Any non-labelled contamination threshold of seeds will be at the expense of the farmers' safety-margin.

Seed companies claim, that purity can no longer be guaranteed. However, by delivering clean seeds - even from the USA - they actually disprove their own arguments. They also claim seed prices would increase. However, prices depend on what can be realised on the market. Who sells cheaper than he can and more expensive than achievable? The share of seed prices is a small fraction of total costs compared to the economic risks involved in GM contamination.

We are talking about labelling only. GM-contaminated seeds could still be sold. Farmers could take the risk, if they chose to.

Positions

The governments of Denmark, Austria, Luxembourg, Italy, Germany, Hungary all took a clear position to label GM contamination of seeds at the detection level. No member state so far has come forward officially in favour of contamination thresholds.

The European Parliament demanded labelling of seed contamination at the detection level in December 2003.

BEUC (EU Consumer Unions): *"no contamination for organic farming and the lowest achievable threshold for conventional farming."*

"Save our Seeds" (200.000 European citizens and over 350 organisations*): "at the detection level, which currently allows for reliable control and compliance at a threshold of 0.1% percent".*

The European Seed Association: " *thresholds need to be set at least at 1% and at even higher levels for some crops"*

Europa-Bio (GMO producers association): "*Maize - 1%, Soybeans - 1%, Sugar Beet - 1.5% , Open pollinated Oil Seed Rape - 2%, Hybrid Oil Seed Rape – 5%, Tomato – 1%"*

resources & contact

- Draft Commission decision establishing minimum thresholds for adventitious or technically unavoidable traces of genetically modified seeds in other products (Sept 2004, Mrs. Wallströms last proposal)
- First European Conference on Co-existence of genetically modified crops with conventional and organic crops (Nov 2003)
- EU Joint Research Centre: Scenarios for co-existence of genetically modified, conventional and organic crops in European agriculture (2002)
- Opinion of the Scientific Committee on Plants concerning the adventitious presence of GM seeds in conventional seeds (2001 / 2003)

You will find these and all available positions, official and scientific documents on the "Save our Seeds" web-site:

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How much GMO in our seeds?

The figures sound ridiculously low. However, an unlabelled presence of 0,3 % to 0,5 % of genetically modified seed in conventional and organic non-GM seed would have massive impacts on farmers in Europe.

- Who takes the risks and who reaps the benefits?
- What happens, if something goes wrong?
- How solid are the scientific calculations of the impact and what do they tell about the practice?
- What are the impacts on the feasibility and the costs of co-existence between GM and non-GM farming in the future?
- Should labelling thresholds allow seed companies to withhold information they have from the farmers, who buy their seeds?