

## Interview

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### **FAZ interview with Professor Dr. Dr. Andreas Hensel, president of the BfR**

**"Most people do not die from things they worry about"**

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In an interview with the *Frankfurter Allgemeine Zeitung*, the president of the BfR Professor Dr. Dr. Andreas Hensel talks about the discrepancy between the perception and the scientific assessment of health risks.

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Interview with a risk researcher

#### **"Most people do not die from things they worry about"**



*Germany's top risk researcher Andreas Hensel talks about the socially heated debate on glyphosate, people's unfounded fear of "chemicals" in food and explains why organic food is not healthier.*

**Mr. Hensel, the dispute over the controversial weedkiller glyphosate and its continued approval has been fierce. Originally, the approval would have expired on 15 December. Now the active substance has been re-approved for a further ten years. A success for science?**

Rather a tragedy. The discussion about glyphosate left the ground of science ten years ago. There are various reasons for this. The active substance glyphosate has become a symbol for the challenges of the so-called

industrial agriculture. Herbicides containing glyphosate are the best-selling herbicides worldwide. As plants have been genetically modified to become resistant to glyphosate, this active substance can be used against weeds in agriculture without the risk of damaging the actual crop, although this is not the case in Germany. Glyphosate is a projection screen for the conventional agriculture with its chemically synthesised active substances that some people no longer want.

### **Is the criticism justified?**

Glyphosate has been extensively studied. The leading assessment authorities worldwide have analysed more than 2000 studies. The current evaluation involved 90 experts from several EU member states. No concerns were identified after analysing relevant studies with a total of around 180,000 pages. In conclusion there was no argument against re-approval. If glyphosate had been banned due to public debate, we would need address how to scientifically assess plant protection products in the future.

### **So, glyphosate is comparatively harmless?**

Two thirds of Germans believe that pesticide residues in food are illegal. In addition, there is often a negative public opinion towards agriculture. For example, farmers are labelled poison sprayers if they drive off the farm with their plant protection equipment. What is not mentioned in this context is the intricate trade-off made by parliaments all around the world when establishing the legal framework for the use of plant protection products. This includes considerations regarding to food security and yield but also - and this is often forgotten - food safety. Omitting these factors opens up a different narrative. The question of which active substance might be more toxic does not actually arise.

### **Why not?**

In Germany, the authorisation of a plant protection product requires that the protection of human health is guaranteed when used as intended. The approval process for active substances used in plant protection products in Europe is one of the strictest procedures worldwide. Safety for humans and the environment are the central elements here. Approved active substances must not be genotoxic or carcinogenic, for example. The public debate about glyphosate was boring until the International Agency for Research on Cancer (IARC) labelled it "possibly carcinogenic".

### **Then the discussion gathered pace.**

The IARC's assessment, in its often-cited sweeping nature, is not in line with the assessments of the BfR, the European Food Safety Authority (EFSA) and, incidentally, with those of many other competent international assessment authorities. In 2022, the European Chemicals Agency ECHA carried out another risk assessment of glyphosate and found again that it does not fulfil the scientific criteria for classification as a carcinogen.

### **That came across differently in the media.**

What has been addressed in the media very one-sidedly is the independence of the scientists involved. The independence of the scientific authorities with whose results one did not agree was attacked selectively for the merit of short-term political success. Meanwhile nobody found it necessary to mention that one of the experts who served as an "invited specialist" in the IARC working group was also working for lobby groups as well as counsel for the plaintiffs' side of the glyphosate litigation and only revealed this afterwards when under legal pressure.

### **Do consumers have a false perception of dangers and risks?**

Most people do not die from the things they worry about most. In Germany, the fear of so-called chemicals in food is particularly high. Yet our food is safer than ever before. In our everyday lives, we are constantly coming into contact with potentially dangerous situations or substances. Despite this, there is not necessarily a risk to our health. There is no evidence in Germany that anyone has been poisoned by food containing pesticide residues. This is shown by the evaluations of the German poison information centres.

Nevertheless, the scaremongering narrative of toxic pesticide residues has been used regularly for decades. NGOs and other interest groups take certain foods - strawberries or mulled wine, for example - and use sophisticated analyses to find traces of pesticides. Everyone has the feeling that they are being insidiously poisoned. We then say, no, there is no scientific evidence for poisoning from exposure to such traces. This scaremongering is irresponsible.

### **Where does the discrepancy come from?**

Risks are considered less likely if they are supposedly controllable. When it comes to plant protection consumers perceive other players, such as politicians or industry, as deciding whether or not a certain active substance may be included in food. As people are unable to recognise these substances in food on their own this then creates distrust and opposition. In the opinion of many people, certain substances should not be present in food at all and should hence ideally be banned.

The arguments of scientific evaluation are often not accepted. For example, look at the use of fungicides. They are predominantly used in viticulture and permanent crops such as fruit production. Most people do not realise that. And wine drinkers often do not even want to know. They are afraid of the residue of a pesticide, but enjoy drinking 13 per cent ethanol, of which we know that it is potentially carcinogenic.

### **Organic farmers also use plant protection products. Are there differences? Are they really "less toxic"?**

It is often suggested organic farming uses so-called "natural" and therefore "non-toxic" pesticides. The generalised nature of this assumption should be questioned. After all, some of the agents are intended to fight the same pests. We assess all active substances using the same criteria, whether they are "natural" or "chemically synthesised". Toxicologically the distinction between "natural" and "chemically synthesised" makes little sense, as in both cases chemical effects have to be assessed and whether and when a substance has harmful effects on health. As Paracelsus said - the dose makes the poison.

### **It is often argued that organic products are healthier because they contain fewer pesticide residues.**

If you take two foods, one "organic" and one conventional, and analyse both chemically, you will not be able to determine which form of cultivation was used upon production. The value-giving component in organic farming is therefore not measurable, but the origin and form of cultivation are documented in a traceable manner and represent the more complex and therefore more expensive form of production. So, if the chemical-analytical qualities are the same, it is not healthier to eat organic. Yet the fact remains that it is good for your health to eat a balanced diet.

### **What role does your institute play in discussions like these?**

The BfR was founded after the BSE crisis as an independent statutory scientific institute. Our assessments are based on professionally recognised international criteria and inform politicians and the interested public. We live this independence and impartiality. Fortunately, we are currently rather having to deal with avoiding crises that are caused by misinterpretations of scientific results. Warnings about supposed dangers should be science-based and easily comprehensible. Otherwise, you quickly find yourself in a credibility crisis.

For example, during the coronavirus pandemic it was recommended not to drink draught beer as you might get infected. Such statements unsettle many people. That was a real problem for the breweries. There was no evidence for this in the scientific literature. Nevertheless, we immediately looked into it and did some research. The result was that commercially available detergents and manual glasswashers effectively remove coronaviruses from drinking glass in conjunction with the right temperatures. Our times are critically shaped by the issue of the politicisation of science.

### **So where are the real risks?**

The real health risks in our country today are those over which the consumer has a major influence, such as pathogenic germs in the kitchen. Notably you cannot see the microbes with the naked eye either. However, good kitchen hygiene is something that can be trained. Clean chopping boards and knives are essential for your own protection. Cross-contamination is the decisive factor. The devil is in the detail. To risk infection, it will for example be enough that you put a raw chicken thigh on the barbecue and subsequently touch a cooked sausage with the same hand.

### **Also, the debate on green genetic engineering is not yet off the table. Last week the EU Council initially failed to approve the deregulation of new breeding methods. What is your view on this?**

From a scientific point of view, a blanket rejection of genetically modified plants for safety reasons is not tenable. Changing genetic information does not necessarily constitute a health risk. Scientifically the idea of the genome as a static entity has long been discarded since the genetic material of all living beings is constantly changing. Natural radiation alone causes billions of genetic changes on a hectare of wheat and does so in a matter of just a few weeks.

We have to think of these changes in genetic information as highly dynamic. After all, the genome of each of us was split into two during conception and then reassembled. Concomitantly the cell has repair mechanisms which run in parallel. Incidentally the biggest challenge in the context of genome editing is the analysis. It is currently impossible to prove a point mutation being the result of genome editing. Such changes can arise any time by other means such as natural mutation.

**Yet there are calls for genetic engineering of food to be labelled. How is this supposed to work?**

If our society wants to produce and consume GMO-free food this requires monitoring. Also, the European Commission has proposed that organic farming should not be allowed to use such plants in the first place. This likewise has to be documented. However, it is currently not possible to analytically distinguish the corresponding products. That is why the question of "GMO-free" is difficult. The state could also not determine whether something has been produced and placed on the market illegally.

Outside Europe genetically modified plants and animals are already being marketed and are so in many countries without labelling. This raises the challenge of effective monitoring of imports from third countries. In any case, already hundreds of millions of euros have in Europe been spent on safety research. While billions of people and animals have already consumed and eaten genetically modified foods, we are currently not aware of a single case where this has led to adverse effects.

**From a scientific point of view, do you see opportunities in the gene scissors?**

We must continue to feed everyone in the future. Therefore, all options should be examined. Molecular breeding methods can make an important contribution to making agriculture more productive. The Julius Kühn-Institute for Cultivated Plants is researching varieties that require up to 60 per cent less pesticides. When relying on normal breeding this takes 10 to 20 years. This also applies to breeding of varieties to increase yields or resistance to salt and drought due to climate change. The new breeding techniques have the potential to achieve major advances in breeding in much shorter periods of time. You can either reject or approve this, but science is gathering experience worldwide. Nobody is waiting for Europe in this matter.