



# ***Promoting Diversity - Safeguarding Innovation Potential***

Theses on Agricultural Biotechnology

January 2003

## **I.     **Introductory Remarks****

- Panacea or "devilry"? In the public arena as well as in political discussions Agricultural biotechnology remains a controversial topic. For the most part, the wide diversity of opinion is the product of different values, ethical concerns, emotional aspects and uncertainty. Members of the supply chain have collaborated with employees in preparing the following paper summarizing the key facts and findings in a compact, easy-to-understand form.
- The following remarks are intended to serve as background information for shapers of opinion, decision-makers, journalists and interested consumers. This paper should provide them with an overview of current opportunities for the use of biotechnology, its limitations and the questions it raises.
- It should be understood at the outset that the signatory organizations oppose an across-the-board "Yes" or "No" to the use of biotechnology. Instead, they favor examining each case of the use of agricultural biotechnology individually and evaluating it on the basis of the intended solution. At the same time, however, it is important to recognize that agricultural biotechnology is a global fact of life. The question facing us as a society in Germany is how best to deal with this fact and to manage the use of "green biotechnology" in our country. We believe that this presentation of our shared position on the subject of coexistence is worthy of particular attention, as it describes the coexistence of all available production processes and thus allows freedom of choice.
- The key word is freedom of choice: This applies to consumers and the business community alike. It is crucial for consumers' freedom of choice that genetically modified products are appropriately labeled when they reach the supermarket shelf - then consumers can decide freely. However, there are limits to freedom of choice. Freedom of choice can be ensured only if labeling is practicable and subject to control. Moreover, it is always possible that unintentional and unavoidable traces of genetically modified organisms may be found in conventional products. Nor does the business community enjoy complete freedom of choice at the present time. Although it is virtually impossible to obtain conventional soybeans, an internationally traded product, for example, the European food industry is practically prohibited from producing genetically modified products.

## ***II. Agricultural biotechnology: consumer skepticism and international competition - five theses***

### ***1. Agricultural biotechnology - based on prior intensive research - is already being used in the production of agricultural raw materials and food in many parts of the world***

- Genetically modified crops have been successfully cultivated in many parts of the world for many years. In 2001 alone, such crops were grown on more than 52 million hectares of arable land worldwide. That is approximately three times the total area of land under cultivation in Germany. The cultivation of new varieties is by no means restricted to industrialized countries. More than one-fourth of the land used to grow these new varieties is in developing and threshold countries such as Argentina and China. Positive results have also been achieved in South Africa and Indonesia. Of the 5.5 million farmers who planted transgenic seed in 2001, more than two thirds were small-scale farmers growing genetically modified (so-called "Bt") cotton in China and South Africa.
- "Green biotechnology" has been a reality for some time in this country as well. According to the German Ministry of Consumer Protection, Food and Agriculture (BMVEL), an estimated 60 to 70 percent of all food in Germany is affected in one way or another by "green biotechnology." The effect of high import quotas for certain goods is evident in this context. The EU supplies only 35 per cent of its requirements for high-protein feed, for example, and must import the remaining 65 per cent – 40 million tons – from the U.S., Brazil, Argentina and other non-EU countries. Virtually without exception, these soy imports to the EU - which are also processed – as soybean oil, for example – in the production of food, contain a certain percentage of genetically modified plant material. Elimination of these imports would lead to a dramatic supply shortage and is therefore unrealistic. It is also true that certain food additives and enzymes are derived from genetically modification (whose biological composition is identical to that of conventionally produced ones, by the way).
- No one is seriously claiming that agricultural biotechnology is a "cure-all." One thing is certain, though: The use of "green biotechnology" in plant breeding offers agriculture a number of benefits. Currently, the most important benefits are still to be found in the development of disease- and pest-resistant crops. Today, agricultural biotechnology is already helping ensure sufficient food and feed crop supplies while making a contribution to

environmental protection as well; for the more resistant a plant is, the less need there is for pesticides and other resources.

- "Green biotechnology" contributes significantly to sustainability. In many parts of the world, including developing and threshold countries, it has the potential to promote safe and efficient agricultural production while ensuring an adequate supply of food. Thanks to the higher productivity of available farmland, for example, deforestation of wilderness areas can be reduced (examples of agricultural biotechnology projects devoted to meeting basic nutritional needs in the southern hemisphere can be found at [www.isaaa.org](http://www.isaaa.org)).
- In future, consumers will also benefit directly from agricultural biotechnology. The use of genetic engineering methods will make it possible to produce food containing especially favorable quantities of specific nutritional ingredients or – for example – fewer allergens.
- Agricultural biotechnology processes have been subject to continuous testing and improvement for more than 20 years. Since 1985, the European Union alone has invested roughly € 70 million in 81 safety research projects in this area. The most important fundamental insight gained in the course of ongoing research is that the use of agricultural biotechnology in compliance with existing regulations governing evaluation and approval poses no danger to human health or the environment and represents no additional or incalculable risks. The OECD has also pointed out repeatedly that the consequences of the use of agricultural biotechnology are substantially no different than those associated with conventional practices.
- Despite scientific evidence and the extensive cultivation of genetically modified crops abroad, Germans have tended to remain skeptical about the use of "green biotechnology" in food processing. However, a gradual shift in the trend is now becoming apparent. According to a recent Allensbach survey commissioned by the German government and published in June 2002, public acceptance of responsible use of "green biotechnology" is increasing in Germany. The findings of this representative survey indicate that 46% of the population favors using agricultural biotechnology to make crops resistant to pests and diseases. Over two-thirds of the respondents support the use of "green biotechnology" to develop crops capable of thriving in barren regions of the Third World. It is generally accepted, however, that the freedom of consumers – both abroad and in Germany – to choose between conventional products and products containing genetically modified organisms should be guaranteed to the extent that this is practical and possible.

## **2. Agricultural biotechnology contributes to preserving Germany's competitive strength as a business location**

- Life sciences - including biotechnology - represent key technologies for the future, and genetic engineering with plants is one of the most promising applications of biotechnology. Forecasts for the European biotechnology market provide reason for optimism. In order to fully exploit this market potential, it is important that Germany and the entire EU continue to exercise a strong influence on the development and application of this technology: Germany must remain an attractive location for the entire food supply chain. The supply chain begins with plant breeding and agricultural production and proceeds to food processing, marketing and trade – literally covering the spectrum from "farm to fork". The members of the supply chain must be given the opportunity to use agricultural biotechnology and market their products under equitable conditions.
- Equally important is the matter of jobs. Many people already work in agricultural biotechnology – at large, international companies as well as in small and medium-sized plant breeding operations. The objective must be to strengthen the competitiveness of these businesses by establishing an appropriate general framework and a firm and reliable legal basis. Only in this way can jobs be preserved and created in this sector of the economy.
- Germany and the EU form an integral part of the world trade system. For Germany or the EU to break away or isolate themselves from this flow of goods and commerce would be to sacrifice both competitiveness and prosperity, and thus this is not a realistic option. In the world trade system, the trade or import of specific goods can be banned if those goods are proven to pose a risk to health or if scientific evidence justifies suspicion of a risk to health, in which case the suspicion must be confirmed or refuted within a specified period of time. A partial, arbitrary ban on agricultural biotechnology would obviously run counter to these rules.

### **3. Agricultural biotechnology requires planning security and a reliable legal framework**

- The signals that come from political circles – whether in Berlin or Brussels – are mixed. On the one hand, research in biotechnology is not only desired but actively promoted (cf. section III, first paragraph). Yet it is extremely difficult and in many cases impossible to harvest the fruits of such research (as e.g. to launch products).
- Thus, for example, the de facto moratorium instituted by several EU Member States in 1998, which the EU Commission has repeatedly described as illegal, remains in force today. In a controversial interpretation of the law, the German government blocked the approval procedure for a genetically modified variety of maize in July 2002. Previously, in February 2000, the German government prevented the approval of a variety of Bt maize that had already been approved throughout Europe for use in Germany.
- The legal framework governing the use of agricultural biotechnology in Germany and the EU is comprehensive. However, a regulatory gap remains in the crucial area of thresholds. What is needed are general, binding and practical thresholds to be used in determining the level above which genetically modified organisms in seed, food and feed must be labeled. For both producers and traders, the legal uncertainty arising from the lack of such thresholds limits is obvious.
- Things cannot be allowed to go on in this way. All parties involved in the supply chain – researchers and scientists, plant breeders, farmers, food processors, retail and wholesale traders, trade unions and consumers – have the right to demand clear, reliable rules as a basis for planning security and an aid to orientation in developing expectations and plans. At present, many companies and farmers are operating in a situation of growing legal uncertainty and they are compelled to bear economic risks that pose a threat to their existence. The gap in the regulations described above casts doubts on the benefits of investments in research and development.

- Legislation must be based on the results of scientific research. In creating a legal framework, legislators can and must decide on the basis of objectively determined and verifiable facts. This creates transparency and promotes consumer acceptance. Moreover, existing laws must be applied consistently. Small and medium-sized enterprises are particularly dependent on a reliable legal framework, and they must be able to rely on public policymakers to provide it. Only when such a framework has been firmly established will they be prepared to invest and create additional jobs.
- Legal regulations applicable to agricultural biotechnology must be based on the conditions that exist in conventional agricultural and food production. Labeling rules must be consistent, justifiable, practical and generally comprehensible. Thus the proposals of the European Commission on the labeling of genetically modified food are regarded as a model, which will require further intensive discussion. This applies above all to questions of practicality and the amenability of the proposed systems to control.

**4. Consumer acceptance can be increased by ensuring freedom of choice and the coexistence of different agricultural practices.**

- Organic and conventional agricultural practices as well as practices, which rely on genetic engineering, should be able to exist and develop side by side in agriculture. The objective should be to ensure effective coexistence of all practices of cultivation, allowing them to work alongside and with one another. But this goal cannot be achieved without comprehensible regulations.
- Forcing the different agricultural practices to compete with one another would be a totally misguided approach. Instead, we should be looking at ways in which the different systems can complement each other. There would be no need to use environmentally questionable copper spraying solutions to combat foliar and tuber rot in organic potato farming, for example, if genetically modified varieties resistant to this fungal disease were available.
- Despite the many differences between the various methods, organic farming, integrated agriculture and agricultural biotechnology ultimately pursue much the same goals. They all seek to make agricultural production as safe as possible for the environment and to ensure maximum economy in the use of resources.
- Thresholds are indispensable for coexistence among the different farming methods. Pollen drift and insect pollination do not stop at field boundaries. Such processes cannot be prevented, and they affect genetically modified raw materials and products derived from them as well. Thus practical thresholds need to be defined.
- Thresholds should be viewed as independent of product safety. All genetically modified raw materials and foods produced from such materials have already passed through an evaluation and registration process, which ensures that they pose no health risks. The only way to meet the demand for GM-free food would be to develop a separate growing, processing and marketing chain for such products. This would lead in some cases to substantial price increases in the supply chain, and there would still be no absolute guarantee that all products are completely free of genetically modified ingredients.



- Consumer confidence is an essential prerequisite for the marketing of genetically modified food in Germany. Current consumer hesitancy with respect to some biotech products must be given due consideration, which means taking consumers' concerns seriously and creating as large a base of information as possible. The Internet portal [www.transgen.de](http://www.transgen.de), a neutral platform endorsed by the BMVEL and the business community, is a step in the right direction. Also worthy of mention is [www.biosicherheit.de](http://www.biosicherheit.de), an Internet database supported by the German Research Ministry (BMBF).
- Building on such independent initiatives, the time has now come for a broad-based information campaign developed on a firm foundation of scientific fact. Public policymakers, the scientific community, trade unions, business and consumers should join hands in supporting this campaign. Only then will it be possible to instill sufficient confidence among an increasing number of consumers.

***5. Research in biotechnology, including a cultivation program, must be actively promoted in order to ensure that Germany keeps pace with international developments***

- Extensive research on safety has been in progress since agricultural biotechnology methods were first used in plant breeding more than 15 years ago. And from the very start, policy has dictated that no genetically modified raw material will be marketed before it has been scientifically tested and approved as safe by regulatory authorities throughout Europe.
- Field trials are indispensable for testing new concepts and as a basis for further research on safety issues in Germany. The experience and assessments of other countries are important to us, but they are neither binding nor applicable in every case. New crop varieties, regardless of any possible genetic modification, must always be tested in the specific environment in which they are to be cultivated. Only in this way can testing produce reliable conclusions about how a variety will develop. However, urgently needed field trials have declined dramatically in number in recent years. Whereas applications for 23 field trials were submitted in 1999, this figure fell to only seven/eight in the years 2000/2001. The explanation: The number of field trials has declined due to excessive restrictions and/or the lack of a suitable framework of regulations and conditions. It is only a matter of time before research institutes and companies begin to leave Germany and relocate abroad. If this happens, important advances in knowledge also needed to strengthen consumer confidence will be achieved outside Germany. Such a trend runs counter to the interests of a modern, future-oriented, innovative business location and must be quickly and permanently reversed.

### **III. Outlook**

- At the behest of the heads of state and government of its Members States, the European Union has developed a biotechnology strategy. This strategy outlines Europe's approach to achieving the goal of becoming the strongest knowledge-based region in the world by the year 2010. That goal can be reached only by promoting green biotechnology in a manner that is both prudent and systematic. We cannot afford to lag behind other countries in the development of this technology, which holds great promise for the future.
- We in Germany must therefore gather much more practical experience in the cultivation of genetically modified crops than we have been able to acquire in the past. If we remain mired in purely theoretical discussions we will achieve no progress at all, and we will also run the risk of a continued drain of human resources, as scientists and technicians migrate from Germany to other countries.
- On the whole, scientific evidence and international experience in the large-scale cultivation of genetically modified crops appear to confirm that agricultural biotechnology is a valuable, beneficial method, which poses no additional, uncontrollable risks. The organizations listed below therefore advocate field trials and parallel monitoring. Only very specific local field trials can provide insights about the actual opportunities and limitations associated with a given project in this country.
- Dialogue with stakeholder groups on the use of "green biotechnology" must continue. One important topic in this ongoing dialogue is the prospect of achieving coexistence among different forms of farming and production operations in Europe. The discussion regarding "green biotechnology" initiated by the German Ministry of Consumer Protection, Food and Agriculture (BMVEL) has established a foundation for this process.

**This policy statement is supported by the following organizations:**

- BDP Bundesverband Deutscher Pflanzenzüchter e.V. (Federal Association of German Plant Breeders)
- BGA Bundesverband des Deutschen Groß- und Außenhandels e.V. (National Association of German Wholesalers and Import/Export Firms)
- BLL Bund für Lebensmittelrecht und Lebensmittelkunde e.V. (Federation of Food Law and Food Science)
- BVE Bundesverband der Deutschen Ernährungsindustrie e.V. (National Association for the German Food Industry)
- DBV Deutscher Bauernverband e.V. (German Farmers' Association)
- DIB Deutsche Industrievereinigung Biotechnologie (National Association for the Biotechnology Industry)
- DRV Deutscher Raiffeisenverband (German Raiffeisen Federation / Federation of German Cooperatives)
- DVT Deutscher Verband Tiernahrung (German Feed Association)
- IG BCE Industriegewerkschaft Bergbau, Chemie, Energie (National Union for the Mining, Chemicals and Energy Sectors)
- IVA Industrieverband Agrar e.V. (National Association for the German Crop Protection and Fertilizer Industry)
- VDOe Verband Dt. Oelmühlen e.V. (German Oil-Millers' Association)