Answers Question 8: In your opinion, what are the risks of genetic engineering?

Dual-uses

Unapproved effects of GMOs on the environment. The risk in plant breeding is manageable and, above all, can be monitored. Traditional breeding of e.g. Grain under a UV lamp leads to significantly more (undirected) mutations, which have unforeseeable consequences. Crispr / Cas has shown that initially highly praised methods then later make further research necessary due to unwanted and undirected restrictions. Therefore one has to give science time to improve these things and not allow any external pressure (industry / politics). Genetic engineering in animal breeding and reproductive genetics (designer baby) pose significant ethical problems / challenges that should not be underestimated. A global regulation is absolutely necessary here to prevent an application outside the medical one.

Species displacement and, especially in agriculture, lead to increased monoculture. Science gets out of hand: transferring genetic engineering possibilities to human and animal reproduction; Keyword: designer babies

We are interfering with the nature of organisms that have all developed in interaction with other organisms / the environment. The consequences are often not in sight. Going back is usually not possible.

unwanted mutations effects on Human Health

- uncontrolled spread of genetically modified organisms - Horizontal gene transfer

uncontrollable effects on humans, animals, plants and the environment

Ethical problems like designer babies, where is the limit

Long-term damage to the environment or human health by changing the "ecosystem".

Possibly that it is an encroachment on nature and the consequences cannot always be foreseen. Dependencies on large pharmaceutical companies in the agricultural sector.

- E.g. eugenics, biological weapons, accidents that lead to lasting damage to the genetic make-up of humans, animals and plants - Especially in the area of microorganisms, as these are largely unnoticed, spread quickly and profoundly

That people just want designers to have babies and then there are no longer any different people

Uncontrolled use and insufficient research into long-term effects prior to use

Sometimes it is difficult to estimate how ecosystems will behave in the future. Human intervention in nature is "faster" (than old methods such as breeding) and very targeted; the influence on other organisms may only be foreseen much later

abuse

If the genome of organisms that will still reproduce is changed, the change will have consequences for all future generations. Foreseeing the consequences is difficult. Even if the change is positive for this individual and his offspring, it can shift the ecological balance mean and favor this species over others. Genetic diversity can be lost. Even if a trait tends to be seen as positive in the individual, it is

important for the species as a whole that there are different genes in the pool and different phenotypes.

in agriculture: changes in the seeds in the 'field trial' - the consequences cannot be assessed; the costs that farmers bear - even in poorer regions of the world - large corporations earn permanently

In agriculture in particular, genetic engineering can lead to species poverty or even more animal suffering. This could be minimized, for example, through sterile breeding. However, this in turn can lead to social problems in poor countries. In areas of medicine, ethical questions often play a major role. There are also risks in this area that need to be discussed.

Ethical implications of possible uses in humans.

Mass death of insects due to modified plants. Genetic engineering in humans can lead to reproduction becoming a kind of "shopping experience"

possible unknown negative effects

Plagues caused by resistance

In complex organisms, mainly ethical as well as that the use of modified organisms does not only take place under laboratory conditions / in the controlled industry, since an impact assessment in the event of release in / contact with ecosystems is probably not feasible / too imponderable.

No reliable studies of long-term, long-term and environmental consequences

Creeping displacement of existing varieties in agriculture. Harmful monocultures.

I feel the greatest risk in economic exploitation is that, as is so often the case, short-term gains over long-term consequences and this cannot be appropriately kept under control. I don't have a solid knowledge of specific examples.

An example I've heard of before would be Monsanto seeds. This may bring a higher yield in the short term, but the consequences for the farmers (dependence on Monsanto) as well as for nature and people (good lobbying and quick approval despite possibly insufficient independent testing) seem questionable to me. Even if research today shows that there are no risks associated with genetic engineering, this may look completely different in a few years' time, and who knows how great the damage might be

Too few long-term studies to be able to rule out previously undiscovered problems.

Designer babies, eugenics

In the wrong hands, genetic engineering can be used as leverage: a plant that has been genetically modified and whose seeds are sold at exorbitant prices. Or genetic changes to germ cells in order to generate the perfect embryo

Special plants are grown using genetic engineering that are not compatible with the ecosystem.

Side effects that are difficult to predict (e.g. the effect of changing a plant on other plants, animals and people)

In my opinion, genetic engineering must not exceed moral limits. Just because there is the possibility of changing the genetic make-up must not be exploited.

The abuse of technology (as with any other technology) Monopoly

Individual cases of the spread of altered genes that have not yet been adequately investigated in a controlled environment for their effect on the entire organism. Especially with interventions that take place without further processing or directly in nature and ecosystems, unforeseen consequences can arise if something is overlooked during the control.

I see the risks more in understanding genetic engineering. It is important to show people that genetic engineering is neither a devil's stuff nor a panacea. When used on / in humans, ethical questions arise, which, in my opinion, should not hinder the basic development and research of genetic engineering on / in humans.

Especially in agriculture - it leads to the extinction of natural species and "smaller" farmers may not be able to afford the genetically modified seeds. In addition, one should stick to the naturally occurring species

Sometimes only social risks, recognition in the population, etc.

I find genetically modified seeds difficult, which lead to crises in agriculture in many countries. There may be cases where small farmers who buy these seeds become dependent on large corporations, or small farmers who do not buy these seeds, but unfortunately with it be contacted, punished or blackmailed and thus lose their existence. Unfortunately, it is difficult to judge how helpful genetically engineered plants are that are resistant to diseases that cause other diseases.

Hello ? It's genetic change. That is not trivial per se

Risks of genetic engineering are above all social problems caused by patenting seeds, for example, or the formation of a monopoly by large farm chemistry and genetic engineering companies.

Possibly. consequences that are difficult to assess as soon as these are used on a large scale or on an industrial scale (e.g. for seeds).

no information

See above

I often see it as incorrectly argued. Think the risks are more than outweighed by the benefits

Transmission of antibiotic resistance

Long-term effects and changes cannot be estimated

Consequences for health. E.g. GM maize.

Monocultures in agriculture and generally simply the ignorance of the long-term consequences of genetically modified living beings.

Suffering of other living beings.

Direct: genetically modified plants or animals can displace natural species through advantages. Indirectly: See Monsanto very strong repression of farmers

Absolutely none

Difficult to regulate the use by people. Manipulation in retrospect usually not detectable. Sometimes uncontrollable effects on ecosystems where GMOs are used.

A not inconsiderable part of the population rejects genetic engineering because a rational risk assessment requires a minimum amount of knowledge that not every person would like to acquire or be able to do.

Ethical concerns in experiments with living things, mutations

Ethical issues that need to be checked beforehand. Otherwise I see advantages above all.

Pretty much anything that can be of use can also be harmful - finding good ways in between is a crazy task.

Exploitation of farmers by corporations like Monsanto. Adaptation of nature -> efficiency is reduced (both with regard to green genetic engineering) Negative consequences are often difficult to predict Not always easy to control

Monsanto; If the economy would like to use this technology without thinking about health and / or ecology (profit-oriented).

Problems: possible misuse of the human genome in order to create the "perfect human".

Liberated gmos can threaten biodiversity.

The morally justifiable line is difficult to draw in general, which leads or would lead to a discussion about the necessity of using genetic engineering in some, but not all, areas.

Consequences difficult to foresee

We cannot foresee all the consequences of our interventions.

That one cannot estimate the long-term effect.

Not always ethically justifiable

Social inequality from genetically engineered babies. Less taste in food

They are all experiments that do not always have to agree with the considerations. Just like drugs that are new on the market and then possibly toxic. That is why I think that genetic engineering should only be used when it is really urgent and when it comes to health.