

We are less skeptical of genetic engineering than assumed

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We often hear that Swiss consumers want their agriculture to be free from genetic engineering. But consumer acceptance of genetically modified crops is likely to be higher than the media leads us to believe,

Angela Bearth says.

The ban on growing genetically modified crops in Switzerland is set to expire at the end of this year. Plans are in place to extend it for the fourth time, and modern genome editing will also remain prohibited under the extended moratorium. Consequently this tool, which holds great promise for plant cultivation, will continue to be regulated just as strictly as traditional genetic engineering. Those in favor of such strict regulation often argue that [consumers](#) reject genetically modified produce anyway. But this argument does not necessarily hold up under close examination.

Proponents of the moratorium often cite older studies, which focused on early methods of genetic engineering, or derive their results from unsuitable data. Many claims refer to an annual survey carried out by the Federal Statistical Office to back the argument of low [consumer acceptance](#), for example. In it, consumers share their views on the danger of genetic engineering to food production. According to the [survey results](#), genetically modified food is perceived as similarly hazardous as decreasing biodiversity, synthetic pesticides and climate change.

Our perception is context-dependent

We cannot conclude from an isolated question alone that consumers fundamentally reject genetic engineering. Detached from a technological context, the focus on dangers masks other aspects that may have an impact on acceptance. Risk research has shown that humans are willing to accept a limited degree of uncertainty when they can see a personal or societal benefit.

As a psychologist, I want to understand how people handle complex topics and make decisions. I study many topics from the natural sciences

and collaborate with other disciplines. People often underestimate the work that goes into a good questionnaire on the acceptance of existing or new technologies. As part of this, there are evidence-based principles that allow us to obtain valid, relevant answers.

Asking questions without influencing answers

The first principle is to phrase questions in a way that does not suggest specific answers. Asking about someone's perceptions of the risks of genetic engineering implies that there is risk involved. This encourages more extreme answers than, for example, a neutral question about somebody's personal opinion.

The second principle is that respondents must understand what they are commenting on. We know from psychology that people tend to resort to heuristic techniques, simple rules of thumb, when faced with an uncertain decision. Those who know little about a topic allow themselves to be guided by association. When asked whether they would prefer a normal or a genetically modified potato, most people will pick the "normal" potato, because the concept of genetic engineering gives them a vague sense of discomfort or they imagine a "Frankenstein potato" from the internet.

There is a lack of meaningful data

To make a valid assessment of Swiss attitudes towards genetic engineering, we need new social science data that does justice to the complexity of the issue. There has been enormous scientific and societal progress since the voting public accepted the anti-GMO initiative in 2005.

New genome editing techniques are much more precise than the genetic

engineering that took place in the 2000s. They have potential for breeding crop varieties that are resistant to disease and climate effects without introducing foreign DNA into the plant's genetic material. Meanwhile, the feared risks of genetically modified plants have not played out. Many researchers are now calling for case-by-case assessment of new varieties based not on their cultivation method but on their inherent properties.

In addition, a new generation of consumers is showing much greater openness towards innovative solutions in agriculture. I can imagine society being more open towards new technologies in the face of the urgent problems of our time, such as the use of pesticides, climate change and the extinction of species.

Starting the debate anew

In a study on the acceptance of various solutions for potato blight, we presented participants with four measures that protect potatoes or make them resistant: injection of synthetic fungicides, copper treatment, introduction of the genes of a wild variety of potato (genetic engineering) or modification of the genetic material of the cultivated potato (genome editing). The result: most people preferred genetic engineering.

Of course, we cannot conclude from this one study that the Swiss population broadly agrees with genetic engineering. But the results suggest that the question of the perception of [genetic engineering](#) is much more complex than the media would have us believe.

It is irresponsible and patronizing to flatly rule out the idea that consumers may be open towards well-researched technologies. When we ask people the right questions, we receive relevant answers.

More information: Rita Saleh et al, How chemophobia affects public acceptance of pesticide use and biotechnology in agriculture, *Food Quality and Preference* (2021). [DOI: 10.1016/j.foodqual.2021.104197](https://doi.org/10.1016/j.foodqual.2021.104197)

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