

FDA's Agricultural Biotechnology Education and Outreach Initiative

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Thank you for this opportunity to comment on the educational and outreach initiative on agricultural biotechnology which the Food and Drug Administration (FDA) was tasked to carry out in the Consolidated Appropriations Act of 2017. Consumers Union is the policy and action division of the nonprofit Consumer Reports, the largest consumer organization in the United States, reaching more than 7 million consumers through its print and online publications, and engaged with more than 1.5 million consumer activists concerned about policy issues.¹

Consumers Union has long advocated for pre-market safety testing and labeling of GMO foods, as Consumer Reports' national surveys, year after year, have shown that an overwhelming percentage of consumers, upwards of 90%, say they want to know if the food they are buying has been genetically engineered.²

Specific Topics Consumers Would Find Useful

In calling this public meeting, FDA's notice indicates that its aim is to educate consumers with science-based information on environmental, nutritional, food safety, economic and humanitarian impacts of agricultural biotechnology.

These are all issues of interest to consumers. First, it is important to acknowledge that consumers have been bombarded with information on biotechnology, a good amount of which has been distorted in order to influence public opinion and the political debate about the technology and over the value of labeling genetically engineered foods. In part as a result, there is much public skepticism and distrust of what is said by almost anyone on this topic, including by scientists. It will be FDA's task to first assess what really qualifies as reputable

¹ Consumer Reports is an independent, nonprofit organization that works side by side with consumers to create a fairer, safer, and healthier world. As the world's largest independent product-testing organization, Consumer Reports uses its more than 50 labs, auto test center, and survey research center to rate thousands of products and services annually. Founded in 1936, Consumer Reports has over 7 million subscribers to its magazine, website, and other publications.

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<http://consumersunion.org/news/new-consumer-reports-poll-shows-consumer-demand-for-strong-federal-standards-for-genetically-engineered-food/>;
<https://www.consumerreports.org/media-room/press-releases/2008/11/consumer-reports-poll-two-thirds-of-americans-want-the-fda-to-inspect-domestic-and-foreign-food-supply/>

science-based information in these areas before communicating to the public. If FDA is to truly educate consumers, it must be rigorous in this assessment, and where issues are not “settled science,” or where misinformation has been widely distributed, FDA must address this directly. Here are just two examples where misinformation about GMOs has been widely disseminated by the media, one from the environmental area, and another from the economic impact area.

For consumers, one of the most important environmental issues is pesticide use. Time and again, in public debates over safety and labeling, it has been said that genetically engineered crops reduce pesticide use. This is a false statement. Adoption of genetically engineered varieties in two crops, corn and cotton, have reduced *insecticide* use.³ Insecticides are one type of pesticide. But herbicides are also pesticides, and in the years since herbicide-tolerant, genetically engineered varieties of corn, soy, canola and other crops have been introduced, the use of the herbicide glyphosate (also known as RoundUp) has increased more than 15 times over.⁴ Taking this into account, overall agricultural biotechnology has vastly *increased*, not reduced, pesticide use in the United States. It will be important for FDA to address this issue with a clear presentation of the scientific facts.

An economic issue that is of importance to the public is the oft-repeated promise that genetic engineering increases crop yields. This claim, too, is false. The National Academy of Sciences in its 2016 report on biotechnology⁵ dealt with this question directly. The report concluded that GE technology itself has not lead to significantly higher yields, noting that “there is no evidence from USDA data that they [GMO crops] have substantially increased the rate at which U.S. agriculture is increasing yields.”⁶ Again, it is important that FDA presents the data—in this case crop data—in a way that informs the public in a non-misleading manner.

The other topics on which FDA has been tasked with educating the public are almost as difficult and controversial. Food safety is clearly one. While there is no strong evidence that genetically engineered foods currently on the market pose widespread safety hazards, there have been many highly oversimplified claims about its safety. In fact, genetic engineering does carry risks. For this reason, FDA requests developers of new GE foods to ensure that there have been no changes in allergenicity, toxicity or nutrition, or other unexpected effects that could impact safety.⁷ FDA has an obligation to educate consumers on this point. On the flip side, there have been unsubstantiated claims that genetically engineered foods are responsible for everything

³ Benbrook, CM. 2012. Impacts of genetically engineered crops on pesticide use in the U.S. -- the first sixteen years. *Environmental Sciences Europe* 24:24 <https://doi.org/10.1186/2190-4715-24-24>

⁴ Benbrook, CM. 2016. Trends in glyphosate herbicide use in the United States and globally. *Environmental Sciences Europe* 28:3 <https://doi.org/10.1186/s12302-016-0070-0>

⁵ National Academies of Sciences, Engineering, and Medicine. 2016. *Genetically Engineered Crops: Experiences and Prospects*. Washington, DC: The National Academies Press. doi: 10.17226/23395

⁶ Pg. 14 in *Id.*

⁷ Food and Drug Administration (FDA). 1997. Consultation Procedures Under FDA's 1992 Statement of Policy--Foods Derived from New Plant Varieties. At: <https://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ucm096126.htm>

from accelerated aging to autism.⁸ These claims are also poorly documented, if at all. FDA must endeavor to present a balanced and science-based view of this issue.

In two other areas, it appears to us that there isn't much science-based information available. In the area of nutrition, which is always of great interest to consumers, we are aware of very few products of agricultural biotechnology currently on the market that have actually improved the nutrition of a food, nor have there been good studies of whether GE varieties may have inadvertently become less nutritious. An oft-cited example of a nutritional improvement is "golden rice," a genetically engineered rice variety that contains beta-carotene, which the body converts to vitamin A. Golden rice was developed in the laboratory but still, after more than a decade of work, has not been commercialized. Recent reports suggest it may never be commercialized, since in the process of engineering the changes needed to express beta carotene, additional and unexpected changes occurred that stunt growth and reduce yield⁹. It would be helpful if FDA could point to good scientific data in this area. And if consumers are to be well informed, it would also be extremely important for FDA to refrain from repeating speculative, theoretical, and self-promotional industry claims as to the potential of genetic engineering to improve the nutrition of food.

As to humanitarian impacts, we are aware of even less data. While industry has made widely repeated claims that biotechnology will feed the world's burgeoning population, these claims appear to us to be less fact-based and more public relations speculation. FDA should avoid repeating theoretical claims of future benefits, when there is no hard evidence to substantiate them.

How and Where Consumers Receive Information on Biotechnology

Polling data suggests that one of the biggest sources of information on food is family and friends—i.e. peers.¹⁰ Other obvious sources of information are traditional and social media. On the GMO issue in particular, trust of information sources has become a major concern. Consumers are smart, they do not want to be talked down to or told what conclusions they should make, and they want to make their purchasing choices based on substantiated scientific information.

How FDA Can Best Reach Consumers With Science-Based Information

⁸ <http://responsibletechnology.org/gmo-education/autism/>

⁹ Bollinedi H, S. GK, Prabhu KV, Singh NK, Mishra S, Khurana JP, et al. 2017. Molecular and functional characterization of GR2-R1 Event based backcross derived lines of Golden Rice in the genetic background of a mega rice variety Swarna. *PLoS One*, 12(1): doi:10.1371/journal.pone.0169600. At: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0169600>

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<http://www.foodinsight.org/press-releases/survey-nutrition-information-abounds-many-doubt-food-choices>

We believe that FDA has a challenge ahead of it in this task for three reasons: in a number of these areas, the science is hotly contested and not settled; in other areas, the science has been misrepresented; and in still other areas, there is little science at all. I say this as a representative of Consumer Reports, an evidence-based organization that uses science every day in its testing laboratories to inform consumers about the safety and efficacy of products and services--from which TV has the best sound system, to which dishwasher cleans the best, to which rice product contains the least arsenic, to which cars are the least likely to roll over.

Conclusion

Biotechnology is a contentious and concerning issue for consumers. One of FDA's most important tasks will be to strengthen its credibility with consumers through the information it chooses to disseminate. This will require taking a balanced approach, providing the public with scientific evidence, admitting where scientific data is conflicting, pointing out where controversial claims have been made that are not true, and excluding claims based on public relations.

Thank you for your time in soliciting comments from the public. We at Consumer Reports stand ready to assist FDA in any way possible to ensure that consumers are educated responsibly and factually about agricultural biotechnology.