

November 17, 2017
Ms. Juanita Yates
Center for Food Safety and Applied Nutrition
% Dockets Management Staff (HFA-305)
Food and Drug Administration
5630 Fishers Lane, Rm 1061
Rockville, MD 20852



Dear Ms. Yates,

Biology Fortified, Inc. is an independent nonprofit organization founded and run by scientists, and supported by the public. Our mission is to enhance public discussion of biotechnology and other issues in food and agriculture through science-based resources and outreach. We have considerable experience in informal public education on biotechnology, agriculture, and food. We are pleased to see Congress supporting an education and outreach initiative on biotechnology through the Food and Drug Administration, and are happy to help inform this process from our experiences. Here, we respond to the three questions posed in docket FDA-2017-N-5991-0001.

1) What are the specific topics, questions, or other information that consumers would find most useful, and why?

In general, consumers are not well-informed about the extent to which biotechnology is used in food and agriculture, the regulatory scrutiny that products of biotechnology undergo, and the safety of products produced with biotechnology. The FDA can play a pivotal role in helping the American public understand these aspects of the technology.

The most useful information for consumers would be general information about the technology and the regulatory process. The FDA should work with EPA and USDA to share information about the entire coordinated framework, from the perspective of the technology and the regulatory process, not specific products. Share information from well-respected sources, such as the National Academy of Sciences reports on "Future Biotechnology Products and Opportunities to Enhance Capabilities of the Biotechnology Regulatory System" and on "Genetically Engineered Crops: Experiences and Prospects".

The FDA has a critical role in safeguarding the health of the public. In that role, the FDA should clarify any nutritional claims made by developers, including making the nutritional equivalence of biotechnology-derived foods clear where applicable. The role of the FDA should not be to focus on specific products where there is no substantial difference between them and foods produced without biotechnology, but to clarify how the FDA determines this aspect of foods during the regulatory process. However, the FDA should provide specific product information about those products with altered nutritional properties so consumers know how that will impact them, positively or negatively. It is important for the FDA to provide this information independently of

the companies that produce and market them, and to clarify any nutritional claims made by developers.

The most useful information for consumers would be general information about the technology and the regulatory process, not specific products. However, FDA should provide specific product information about those products with altered nutritional properties so consumers know how that will impact them, positively or negatively. FDA should work with EPA and USDA to share information about the entire coordinated framework, again from the perspective of the technology and the regulatory process, not specific products.

The safety of products produced through the use of biotechnology is also a critically important issue for the public. A 2016 Pew Research Survey on public and scientists' perspectives on biotechnology showed a 51-point gap between the public and the scientific community on the issue of safety. There is scientific consensus on the safety of genetically engineered crops currently on the market, yet the survey indicated that the public perceived greater disagreement among scientists than there actually was. The survey also indicated a low level of awareness of the issue and knowledge of the subject. We have observed similar trends in our experience, and have devoted significant efforts to understanding and communicating the safety of these foods. By making the FDA's role in determining the safety of the products of biotechnology more familiar to the public, the FDA can help increase public awareness.

Information that would not be useful would be specific rebuttals to every claim made about these foods. There is so much misinformation that such debunking can quickly become a waste of resources, and can have a backfire effect by elevating those claims. That said, common misconceptions might be clarified in a Q&A style, or other documentation that is secondary to the primary information sources. People are increasingly interested in learning about farm impacts, and working with the USDA, you can provide general information about the farming context in which they are grown.

2) Currently, how and from where do consumers most often receive information on this subject?

The 2016 Pew survey showed that there is a lot of work to be done. Understanding of biotechnology is lower than other subjects including evolution. Simply do a web search of popular terms like "GMO", "biotechnology", and "genetic engineering" and you'll see that the information in the top search results are provided by people and organizations who are 100% opposed to the technology and provide information that is not accurate. Many of them are funded by competing industries or NGOs who gain monetarily by alarming the public. Other sites are the developers themselves, and a handful of independent organizations such our own.

Consider also the different types of media that people use. There is little mainstream media coverage, and when there is coverage it tends to be about sensational topics that do not communicate much nuance or have little educational value. There are some documentary films that cover the topic, but tend to be inaccurate, with one notable exception being *Food Evolution*, released this year. TV shows like the Dr. OZ Show have covered the topic, but have been

misleading and sidelined expert scientists who were invited onto the show, in favor of sensational and inaccurate claims.

Social media is a dominant means by which people hear about news, especially for the topic of biotechnology. What you do see on social media is sensational, and often paired with other misinformation such as anti-vaccination propaganda, and conspiratorial claims such as chemtrails. They have demonstrable negative impacts, especially for low income populations. Many of the organizations that are active on social media advise people to change their diets without adequate evidence or medical credentials and are a risk to public health.

Despite these disturbing trends, research shows that the vast majority of the American public is not very polarized about biotechnology. Most are still open-minded, and there is much progress that can be made. There is huge potential for providing factual information to the public about biotechnology, and relating it to issues that we care about.

3) How can FDA (in coordination with USDA) best reach consumers with science-based educational information on this subject?

As shown in the 2016 Pew Research study, there is more public confusion about biotechnology than any other science topic today. Effective communication on this topic is a daunting task. Despite the difficulties, there are many scientists, farmers, and other professionals who have been communicating about biotechnology for years and know the landscape. We recommend that FDA work with these experienced science communicators and help to enable new science communicators, especially among professionals that already work with the public, such as teachers, doctors, and dietitians. Support for graduate students who have interests in science communication can also be beneficial both for reaching the public as well as having lasting impacts on this and other fields. There is no need to reinvent the wheel, and indeed, since the budget of \$3 million is small in comparison to other outreach programs, we think this “train the trainers” approach will be the most effective use of public funds.

We would be happy to assist the FDA with identifying existing networks as this initiative develops, but we can propose some already existing scientific societies, professional organizations, and other organizations that could be tapped into both for expertise and partnering with the FDA on communication efforts. These include, in no particular order:

- American Society of Plant Biologists
- American Medical Association
- Academy of Nutrition and Dietetics
- National Science Teacher Association
- National Association of Plant Breeders
- American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America
- National Association of Science Writers
- Biology Fortified, Inc.
- Cornell Alliance for Science

- March for Science
- Land-grant university plant science faculty members
- International Food Information Council

During the Sackler Colloquium of Science Communication, Alan Leshner summarized the recent “Communicating Science Effectively” report in two ways. First, science communicators must tailor the message and approach to the audience. Second, strive to speak with the public, not to the public. This includes discussion of beliefs and values in addition to the science itself. The FDA should take the lessons from this report and others, and avoid the mistake of using the “information deficit model”. Instead, start from the common value of safe food for our families, a “trust” model that may be more effective at reaching the public.

The information is there if people want to find it. But instead they are finding information from people they trust. Federal scientists are already well trusted, but they aren't necessarily within reach of the average consumer. Getting both FDA and other scientists and science communicators in front of wider audiences both virtually, in the media, and in person, can make a huge difference in gaining trust. Getting scientists, farmers, and other good communicators on all sorts of radio, TV, and social media shows (such as popular channels on YouTube and other platforms) would reach many people. Figure out where people are, and bring the information to them in a compelling fashion that is relevant to their lives, instead of just putting information up on a website. All communication efforts can lead back to sources on the FDA website, but building a site by itself is not sufficient.

The FDA recently put out a small infographic about how biotechnology is conducted, and how it comes to traditional plant breeding. That infographic and associated text was very helpful, and was communicated widely. We would like to see more informative resources of that kind, concise, and sharable for social media. We'd like to see more resources that professionals including doctors and dietitians can point to when members of the public have questions about biotechnology. These need to be social media friendly, and can include images and short videos. Maybe factsheets that doctors and dietitians can hand out or put on a bulletin board. Lessons for public school teachers would be another way to raise awareness and familiarity with the field. The FDA can share information from well-respected sources, such as the National Academy of Sciences reports on biotechnology, and work with extension faculty at public land-grant universities. This is particularly important, as experienced professionals will be necessary to help vet information provided by the FDA to make sure that it is factual and not misleading.

We also suggest creating resources like slide decks and making those available for science communicators to use, not on behalf of FDA, but in general to help people provide fact based information in their communities. Send speakers to conferences for professionals including those given by the Academy of Nutrition and Dietetics, general science conferences, and many more to ensure professionals can easily find resources and know how to use them.

There is great potential in educating the public with this initiative, but when the program is completed, it would be helpful to have data on its effectiveness collected during the process. This can be in the form of website hits, numbers of professionals trained, audiences reached, and video downloads. This way, if the program is effective, it can guide lawmakers and public officials in the future to determine the best way to move forward.

Please feel free to contact us for any reason, and we are grateful for the opportunity to add our input to this important initiative.

Regards,

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