

Is it Safe?

Information on Genetically Engineered Foods for Consumers

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Consumers are increasingly interested in where their food comes from and may be concerned about the health and safety implications of various food production methods. With many different terms such as “organic,” “natural,” and “GMO-free” being used in food marketing, it is confusing for consumers to know how to spend their food dollars wisely.

The fact sheet for this lesson provides consumers with an introductory overview to genetically engineered (GE) foods (commonly referred to as GMOs — genetically modified organisms), as well as safety information on these products. Information on labeling of GE foods is also included. The term “genetically engineered (GE) foods” is used throughout this fact sheet because the U.S. Food and Drug Administration (FDA) considers it scientifically accurate for these types of foods.

GE foods are a controversial and often misunderstood topic, with only 37 percent of U.S. adults saying that they think GE foods are safe, compared to 88 percent of scientists who are part of the American Association for the Advancement of Science (AAAS; Pew Research 2015). For many consumers, the safety issue of GE foods is tied together with many other issues, such as environmental concerns, concerns about the industrialization of agriculture, and corporate control of the food supply.

Tips for communicating difficult topics

As indicated, this lesson covers a controversial topic. Therefore, the presenter must understand that there will likely be a wide variety of opinions among the participants. Be prepared to communicate on a difficult topic. The following tips may be helpful in communicating this lesson:

- » The presenter must recognize and care about the concerns of the various participants in the lesson. It is important to understand the participants’ perceptions of risk and their backgrounds, then tailor the message accordingly.
- » The presenter must provide science-based information. There are a number of different opinions on this topic, but we must provide accurate, science-based information. As extension personnel, your job is not to change peoples’ minds, but simply to provide science-based information. Although it may be difficult, it is important to not argue or get defensive if confronted with different opinions.
- » Participants may ask questions about the credibility of USDA and FDA’s regulatory process. Extension personnel can discuss that even though the regulatory system may not be perfect, consumer and other groups also have the opportunity to make comments to these regulatory agencies to ensure that all opinions are being brought up in the regulatory process.
- » The presenter should establish his or her own credibility, which can be done by sharing personal stories related to this topic.
- » It is important to recognize that some uncertainties exist on this topic. If the presenter does not feel like an expert on a particular portion of this topic that should be stated as well.
- » Recognize that almost everything has some level of risk and that most people prefer certain risks over others. In general, the following table describes most peoples’ risk preferences:

Generally preferred risks	Less preferred risks
Familiar risks	New risks
We can control	We have no choice or control

Objectives:

- » Participants will gain a general understanding of GE foods.
- » Participants will understand the general safety record of GE foods.
- » Participants will gain an understanding of the issues related to labeling of GE foods.
- » Participants will gain information to make informed decisions when purchasing food.

Intended Audiences:

Groups of adult consumers interested in learning more about GMOs.

Before the Lesson:

1. Review this leader's guide (MF3282) and the fact sheet (MF3281).
2. Check listed references for more information.
3. Assemble materials including the following:
 - a. Pens or pencils
 - b. Copies of the fact sheet
 - c. Copies of the evaluation to be distributed following the program

During the Lesson:

1. Give each participant a copy of the fact sheet and a pencil and allow a few minutes for each person to review the sheet.
2. Allow 45 to 50 minutes to teach the lesson. You can determine if you want to try to answer questions as you go along or wait until the end.
3. Begin by asking for a show of hands of how many participants have heard about GMOs or GE foods. You could also ask for a show of hands of how many participants have heard a variety of facts and opinions on GMOs.
4. Discuss the introductory paragraphs from the fact sheet. Be sure to clarify that the term "genetically engineered foods" or "GE foods" will be used throughout the lesson as this is

recognized as a more scientifically accurate term for these types of foods, even though many consumers call these foods "GMOs."

5. Discuss that there may be a variety of opinions on this topic, but you are planning to present scientific information, focusing on the safety of these food products.
6. Use the accompanying PowerPoint presentation (including photos on slides) to discuss some of the key points from the fact sheet.
7. Depending on your audience and your comfort level, you could ask participants which food products in the U.S. food supply they think are GE.
8. Depending on your audience and your comfort level, you could ask participants if they have any concerns with GE foods, or what concerns they have heard others express.
9. Ask the participants to fill out an evaluation for the program.
10. Thank the audience for their participation.

References:

Funk, Cary and Rainie, Lee. January 2015. *Public and Scientists' Views on Science and Society*. www.pewinternet.org/2015/01/29/public-and-scientists-views-on-science-and-society/

Nicolia, A, A. Manzo, F. Veronesi, D. Rosellini. 2013. *An overview of the last 10 years of genetically engineered crop safety research*. Critical Reviews in Biotechnology. ISSN: 1549-7801.

GMO Answers, www.gmoanswers.com

FDA. *AquaAdvantage Salmon*: Accessed December 23, 2015. www.fda.gov/AnimalVeterinary/DevelopmentApprovalProcess/GeneticEngineering/GeneticallyEngineeredAnimals/ucm280853.htm

FDA. *FDA takes several actions involving genetically engineered plants and animals for food*. www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm473249.htm



Sources for Further Information:

- » IFIC, www.foodinsight.org
- » GMO Answers, www.gmoanswers.com
- » Genetic Literacy Project, www.geneticliteracyproject.org
- » Colorado State University — GMO labeling: www.ext.colostate.edu/pubs/foodnut/09371.html
- » *Process Labeling of Food: Consumer behavior, the Agricultural Sector, and Policy Recommendations*. CAST Issue Paper Number 56, October 2015.
- » *The Potential Impacts of Mandatory Labeling for Genetically Engineered Food in the United States*. CAST Issue Paper Number 54, April 2014.
- » *The Role of Biotechnology in a Sustainable Food Supply*, Book search using title.
- » *Crop Biotechnology and the Future of Food: A Scientific Assessment*. CAST Commentary QTA 2005-2 October 2005.
- » *Safety of Meat, Milk, and Eggs from Animals Fed Crops Derived from Modern Biotechnology*. CAST Issue Paper Number 34, July 2006.
- » *Evaluation of the U.S. regulatory process for crops developed through biotechnology*. CAST Issue Paper Number 19, October 2001.
- » **Note:** CAST is Council for Agricultural Science and Technology. This nonprofit organization has a main objective is to communicate sound science and presents all sides of an issues to help educate the policy makers and the public. More can be learned by visiting <http://www.cast-science.org/>

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Evaluation:

Agents: For the workshop evaluation, use the Nutrition, Food Safety, and Health Program's PEARS template:
"FCS Series: Information on genetically engineered foods for consumers."

Participants: We appreciate your opinions. Please help us make our programs better by taking about 5 minutes to answer the following questions. Your participation is completely voluntary, and you may skip answering one or more questions if you wish. The information that you share will be held in the strictest confidence. We will summarize it in reports to evaluate our program. We greatly value your participation. Thank you!

Scale: Agree completely – 5, Agree somewhat – 4, Neutral – 3, Disagree somewhat – 2, Disagree completely – 1

1. As a result of this program, I gained a general understanding of GE foods.
5 4 3 2 1

2. As a result of this program, I better understand the general safety record of GE foods.
5 4 3 2 1

3. As a result of this program, I better understand the issues related to labeling of GE foods.
5 4 3 2 1

4. As a result of this program, I gained information to make informed decisions when purchasing food.
5 4 3 2 1

5. As a result of this program, I have also learned (please indicate)

6. I plan to take action and/or change something in my life (at home, play, or at work).
5 4 3 2 1

7. If you agree, please describe the action or changes you plan to make and when:

8. Additional comments:

9. A K-State representative may contact me later to talk about this program (We are asking for your contact information so that we may follow up with you about what you learned from this program):
 No Yes

10. If yes, my contact information is below: (e.g. name, phone and/or email):