

Answers to Questions about Genetically Modified Organisms (GMOs)

Teen members of the Science Matters project asked these questions to food scientists at Bayer and Rutgers University. The following are brief answers and resources for additional information.

⇒ Are there health effects from consuming GMO products?

Over 20 years of research has revealed no evidence of negative health effects from growing or consuming GMO products. Many studies from the US National Academy and other credible National Academies have resulted in this same conclusion. More information: <https://www.nap.edu/resource/23395/GE-crops-report-brief.pdf>

⇒ How can I tell if the information I find is coming from a credible source?

It's easy to spread misinformation and fear through sensational headlines. Some groups use scare tactics to sway the public, sell products, and discredit scientific research. See back of this handout for tips on how to fact-check your information.

⇒ Why are countries worldwide resistant to utilizing GMO crops when there is a clear need from local farmers dealing with devastating environmental factors (i.e. crop disease)?

Many organizations aggressively lobby developing countries against the use of GMOs with sensational claims that cannot be counteracted. As a result, countries have refused imported donated crops despite the starvation of their citizens. More information: <https://geneticliteracyproject.org/glp-facts/vandana-shiva/>

⇒ How are GMO crops created?

GMOs are made through a process known as genetic engineering in which genes are transferred from one organism to another. Two methods of this are using a gene gun to shoot particles of a plant into another DNA. Another method is using bacterium to introduce preferred genes of into the plants DNA. More information: Development of an Agricultural Biotechnology Crop Product: Testing from Discovery to Commercialization. (2012). *Journal of Agricultural and Food Chemistry*, 10179-10187.

⇒ What are the positive effects of GMO use?

On the global scale, use of GMOs increase overall crop yield, decrease the use of pesticides, reduce the amount of time farmers spend in the field, and allow for economic growth. More information: <https://www.nap.edu/read/12804/chapter/5#173>

⇒ If GMOs were completely removed worldwide, what would be the immediate and long-term effects?

Removal of GMOs from farmers' toolkits would be a reduction in crop yield, an increase in use of pesticides (especially in corn and cotton), and increased soil erosion from the need to till ground to reduce weed pressure. More information: <http://www.pgeconomics.co.uk/pdf/2017globalimpactstudy.pdf> (page 16) and <http://www.nber.org/papers/w23519>

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Tips for Fact-Checking the Media

Consider these questions:

- ◇ **Does the headline have an exclamation mark (!)?**
The information is probably over exaggerated to get your attention.
- ◇ **Does the information sound sensational?**
The information is probably not true and designed to capture your attention.
- ◇ **Does it sound too good to be true?**
If it does, then it is probably not true.
- ◇ **Is a product or service being sold with this story?**
Scare tactics are commonly used to sell products/services. Beware.
- ◇ **Are they asking for donations?**
Be wary if they ask for money. Take the time to research the organization to ensure it is legit.
- ◇ **What do you know about the person who wrote this article?**
Before you share the article, make sure you research the author. What is their background and expertise in this subject? What's in it for them?



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