

GMOs and Technology: How the Narrative Influences Public Perception

In a world of constant change, increasing global demand for resources, and more widely-available access to information, we have been able to form more diverse opinions than ever before about the technology that impacts our lives on a daily basis. Agriculture has not been immune from this flurry of questions, concerns, and criticism regarding efficacy, sustainability, and equality.

Genetically modified organisms (GMOs) have become one of the most controversial issues in the field of agriculture. This term is most commonly used to describe food which has been produced or developed through genetic engineering. This process involves identifying desirable traits in a certain organism, copying its genetic information, and transferring the copied information to a new organism. Genetic modifications can help promote resistance to drought, to certain pests and may ensure faster harvests and better nutritional benefits. However, with their increasing ubiquity, there has also been a rise in concerns regarding the impact of GMOs on human health and on the environment. Although considered to be safe, numerous groups, such as March Against Monsanto and the Organic Consumers Association, have advocated against the use of GMOs. Opposition to GMOs extends internationally: the European Union regulates GMOs more strictly than the United States and many European countries are unable to cultivate GMO crops. These movements have gained traction due to widespread engagement with posts on social media sites. As noted by researcher Camille Ryan, "new players [who] craft, share, and monetize information and narratives in novel ways" can have a powerful impact on the public understanding regarding agricultural changes. Public perception of GMOs can also be motivated by a misunderstanding of food sciences, a point noted by NPR in a report on the topic.

Arguments promoting the benefits of GMOs have likewise shaped the perception of their use and impact. As noted by researcher Pasquale Lucio Scandizzo, supporters of GMOs emphasize "achievements and hopeful developments with no villain and many heroes. This story is one of uninterrupted scientific progress [and] continuous increases of yields." This rosy approach is also far from all-encompassing and some advocates for GMOs may neglect to mention criticisms such as the impact of GMO crops on small farmers or the environmental concerns of using genetically modified organisms. This particular narrative can also be used as a (sometimes misleading) justification for future agricultural changes. For example, the Green Revolution, a series of technological innovations occurring in the 1960s, occurred prior to the rise of GMOs but has been used as a success story to encourage biotech initiatives and the involvement of scientists in agriculture.

Ultimately, genetically modified organisms and, on a wider scale, agricultural technology might have a profound and positive impact but, in order for wider acceptance, scientists and advocates will first have to work to change the narratives surrounding these technologies.

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Information gathered from "People Strongly Against GMOs Had Shaker Understanding Of Food Science, Study Finds," National Public Radio (npr.org); Claire Marris's "Public Views on GMOs: Deconstructing the Myths" in EMBO Reports, vol. 2, no. 7, July 7, 2001; "Will GMOs Hurt My Body? The Public's Concerns and How Scientists Have Addressed Them," Harvard University (<http://sitn.hms.harvard.edu/>); Pasquale Lucio Scandizzo's "Science and Technology in World Agriculture: Narratives and Discourses" in the *Journal of Agrobiotechnology Management and Economics*, vol. 12, no. 1, 2009; and Camille Ryan's "Monetizing Disinformation in the Attention

Economy: The Case of Genetically Modified Organisms (GMOs)," *European Management Journal*, vol. 38, no. 1, Feb. 2020.