A Genetically Modified Menu

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The corn we eat today has changed radically from the food grown hundreds of years ago. Credit: Theophilos Papadopoulos / Flickr Creative Commons

Will GMOs destroy or save civilization?

The headlines might paint a dramatic picture, but the reality is that GMOs – and the discussion around them – are more nuanced than many of us assume. And that starts with the term “genetically modified organism.”

“One of the issues that’s inhibiting the advancement of the discussion is this term ‘GMOs,’ because it’s scientifically meaningless,” says Dr. Pamela Ronald, a professor in UC Davis' Department of Plant Pathology, and the co-author of Tomorrow's Table: Organic Farming, Genetics, and the Future of Food.

> You can’t compare golden rice, which has been engineered to produce higher amounts of beta carotenoids, and the purpose is to save the lives of young children in less developed countries. That is not related at all to herbicide-tolerant crops or even insect-resistant corn. So each crop really has to be looked at on a case-by-case basis.

Facts and Myths

There’s also an “echo chamber of misinformation” that’s fed by social media, says Amy Harmon, a New York Times reporter. She theorizes that this is partly because as concern about sustainable agriculture grows, people want something they can focus on.

“Something that sounds scary, like genetically engineering your food in a laboratory, seems like a good target. It would be nice if the solution was that easy," Harmon adds.

Harmon and Ronald also point out that humans have been modifying their food for centuries – kids learn fairly early in school about Mendel's experiments with plant hybridization. But would Mendel recognize the work that’s happening in modern labs?

According to Harmon, there is a difference in what scientists are doing with plant genetics today.

> Instead of combining lots of genes in a somewhat random process, then seeing which one looks good, and then cross-breeding in this traditional way - scientists are taking specific genes that they know what they do, they put it in a plant to produce a particular desired trait.

Saving Crops

Targeting specific genes can have advantages, though. An insect-carried bacterial citrus

disease has been crippling Florida's orange crop. To fight off the disease, farmers have been increasing the amounts of insecticide used on the crops – potentially causing unforeseen harm to workers and consumers.

One company is currently working on a genetically-engineered orange that would be resistant to the disease. “If it works, it would clearly reduce the use of pesticides and it would just make the crop viable,” says Harmon.

Increased crop yields could also help feed booming populations. China, for example, is pouring money into technology and research on genetically modified crops that have increased disease resistance and higher yields.

“My concern is that we will reject a tool that could help,” says Harmon. “If there’s a tool that’s not intrinsically dangerous, and that could yield more nutritious foods and we rejected that just based on fears and misperceptions of the technology, it would be a really tragic thing.”

GMOs, agriculture, Pamela Ronald, Amy Harmon, Body and Mind, genetics

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