GMOs: friend or foe?

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From USDA at flickr.com
Herbicide resistant and insecticide-producing crops now dominate crop production in U.S.

Farmers adopt transgenic crops because they are more efficient.
To farmers: friend

To the Hawaiian papaya industry, and perhaps the future banana industry, a savior.\(^{(B2)}\)
Economists say that when four companies control 40 percent of a market, it’s no longer competitive. That’s apparently the situation now with U.S. corn and soybean seed markets.

What about the near-monopoly of Google’s search engine?
To consumers: neither friend nor foe

On the one hand: more efficient agriculture should reduce food prices. No evidence GMOs has threatened food safety. GMOs are not a cause of rising food allergies.\(^{(N1)}\)

Most all scientific organizations have deemed foods made from GMOs safe:
- The American Association for the Advancement of Science
- The American Medical Association
- Food Standards Australia & New Zealand
- The French Academy of Science
- The Royal Society of Medicine
- The European Commission
- The Union of German Academies of Sciences and Humanities
- Seven of the World’s Academies of Sciences (Brazil, China, India, Mexico, the Third World Academy of Sciences, the Royal Society, and the National Academy of Sciences of the U.S.)
- World Health Organization
To consumers: neither friend nor foe

On the other hand: Skepticism about the safety of GMOs has made people more fearful of conventional food. (In surveys, people generally do not approve of GMOs and want it labeled.)

Can we point to any obvious improvements in foods due to GMOs in the last 20 years?
To the developing world?

Could play a very productive role. How can more choices be bad? Thus far, though, I just don’t know.

Golden Rice, where one bowl supplies 60% of Vitamin A needs\(^{(H1)}\)

• A demonstration of all the good we can do?
• A Trojan horse so that evil corporations can control all the world’s food?

From IRRI photos at flickr.com (CC BY-NC-SA 2.0).
To the environment

I’m going to say … friend?

• Has reduced total insecticide use.
• Effect on total herbicide use unclear, but in terms of herbicide’s impact on the environment, it has probably fallen.
• Weed resistance to the herbicide glyphosate and insect resistance to *Bt* insecticide has risen … duh!(N1)
Any technology that improves efficiency should reduce the carbon footprint of food.\(^{(E2)}\)

The transgenic pig, the Enviropig, was designed to reduce water pollution from swine farms, but due to public skepticism of GMOs it may never be commercialized.\(^{(G2)}\)
To the public

 Likely friend, like creating a chicken immune to Avian Influenza. (F2)

 Many non-ag applications.
To genetic diversity

Not clear.

Some studies say we have lost considerable genetic diversity in crops over last century. Other studies say we haven’t.

GMOs do seem to have caused farmers to adopt similar corn, cotton, and soybean seeds. But advent of GMOs radically increases our ability to introduce genetic diversity. (N1)
Don’t duck the question

Friend or foe?

I largely believe friend, but that’s because I place considerable confidence in the U.S. regulatory agencies.