

Anti-GMO stance by Greenpeace, other environmental activists, worsen climate change

Pretend for a moment that you lead an environmental group, dedicated to eliminating the causes of global climate change. As such an environmental leader, you'd be excited about a technology change that reduces the greenhouse gases behind climate change, right? Especially if this technology already has reduced greenhouse gas by the equivalent of nearly 12 million automobiles?

Not if that technology is genetically modified food. Non-government organizations that have taken a strident anti-GMO stance, like Greenpeace, resist any connection between climate change and genetically modified agriculture. Biotechnology isn't even a significant concept in climate change efforts, particularly in Europe. Worse, this resistance isn't as scientific as it is political.

A [recent study](#) by Philipp Aerni at the University of Zurich evaluated 55 representatives of 44 organizations that included business, US, European and Asian government agencies, academic institutions, organizations like the Intergovernmental Panel on Climate Change (IPCC), The World Bank/International Monetary Fund, Greenpeace, the World Wildlife Fund, and the Bill and Melinda Gates Foundation. Most of the participants looked favorably upon biotechnology and genetic modifications of crops, with the exception of a small number of advocacy groups, the most well-known of which was Greenpeace. But while participants were more willing to privately favor biotechnology as a source of solutions to climate change, few were willing to express that sentiment publicly. Aerni wrote:

Since core stakeholders in both debates (*Greenpeace and the World Wildlife Fund are involved with both climate change and GMO issues*) radically oppose the use of modern biotechnology, and can count on widespread public support, especially in affluent countries,...other stakeholders may also side with the popular view, even if that view may not be in line with their more pragmatic personal view.

Biotechnology may not be 'clean tech' as long as powerful environmental groups say it is not.

Science versus "because I said so"

Greenpeace, for its part, [repeatedly points to three areas](#) to show that "GM crops fail in climate change conditions:"

- It cites a [2005 study](#) that allegedly shows that "temperature fluctuations caused crop losses in GM cotton in China." However the study only shows a drop in Bt Cry protein production in very hot conditions; no mention is made of crop loss. In fact, other studies [show similar effects](#) of heat on any kind of cotton, regardless of breeding.
- The organization claims that GM soybeans "suffered unexpected losses in the US during hot weather," citing a news report on a [study conducted in 1999](#). However, scientists who read the study discovered that it did not even mention yield loss. Instead, they read about a loss of total crop that

was marginally worse than conventional grown soybeans.

- Finally, it blames monoculture and loss of biodiversity on genetically modified crops, which [we have seen](#) have nothing directly to do with genetic modifications of plants. Monoculture is an oversimplistic designation, and is an issue with any kind of large-scale agriculture.

The GM Contribution

Genetic modification has made significant inroads into curbing climate change. Drought- and salt-tolerant GM plants have been produced, and researchers are looking into developing more. Thriving under extreme heat also is an area of keen interest.

As for helping to prevent climate change in the first place, GM has not been [much of a slouch](#). Adopting GM technology has reduced pesticide spraying by nearly 9 percent. This arises from replacing broad-range pesticides with glyphosate and in some cases 2,4D, reducing the volume of pesticides used and the fossil fuel needed to spray them.

In addition, tillage, necessary for organic and some conventional farming, is usually not necessary for genetically modified crops. A [Purdue University study](#) found that no-till fields released 57 percent less nitrous oxide (another greenhouse gas) than fields that required tillage. Thus, less tillage sequesters more carbon and nitrogen in soil.

Finally, genetic modifications produce crops that can get higher yields using less space. This means that less land needs to be disrupted—fewer trees are removed, more plants are preserved and less carbon is released (not to mention the carbon dioxide taken up by plants). The USDA recently found that organic agriculture would require almost twice as much land than is necessary using conventional methods (measured against GM crops, that number's more dramatic). Organic agriculture would require an extra [121.7 million acres](#) to grow all US-produced food—that's an area the size of Spain.

Together, [reducing spraying and tillage](#) saved 2.1 billion kilograms of carbon dioxide in 2012 alone. This means tons of carbon that isn't released into the atmosphere, carbon that isn't burned by crop dusters and other sprayers, and reduction in land use needed for agricultural production.

As for Greenpeace and other anti-GMO groups, organic remains a more viable alternative than GM, even in the face of organic's threats to climate change.

Ramez Naam, author of *The Infinite Resource: The Power of Ideas on a Finite Planet*, recently wrote in the [Genetic Literacy Project](#) that "Organic farming is environmentally kinder to every acre of land. But it requires more acres. The trade-off is a harsh one. Would we rather have pesticides on farmland and nitrogen runoffs from them? Or would we rather chop down more forest? How much more forest would we have to chop down?"

What we're facing

As the world population increases, it's estimated that demand for food [will increase 70 percent](#) over the next 40 years. This means we need higher yields, and more efficient ways of maintaining a secure, safe

food supply. At the same time, efforts to reduce (or even reverse) climate change call for conservation of green plants and activities that do not release more greenhouse gases into the atmosphere. To the participants in Aerni's Swiss study, they knew that the plant can't leave any technology unturned. Unfortunately, louder public voices are shouting them down.

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