

10 GMO memes backed up by science

For years the anti-GMO machine has been churning out propaganda featuring scary scientists injecting tomatoes with needles full of water and food coloring. But something happened several years ago, scientists and science enthusiasts began fighting back. The rise of social media has allowed them to share their love of science, and hope for the future, with the masses. Here are some of my favorite examples:

1.



Credit: Chuck Lasker

This is one of the first I came across. I can't remember if someone sent it to me after I started We Love GMOs and Vaccines because Chuck was thinking the same thing, or if it helped inspire the page name. Either way it sums up our point. Both movements oppose biotechnology and are selling the idea that "natural" is better and anything made by corporations is automatically evil.

2.

A visual guide to identifying genetically modified corn



NON GM



GM

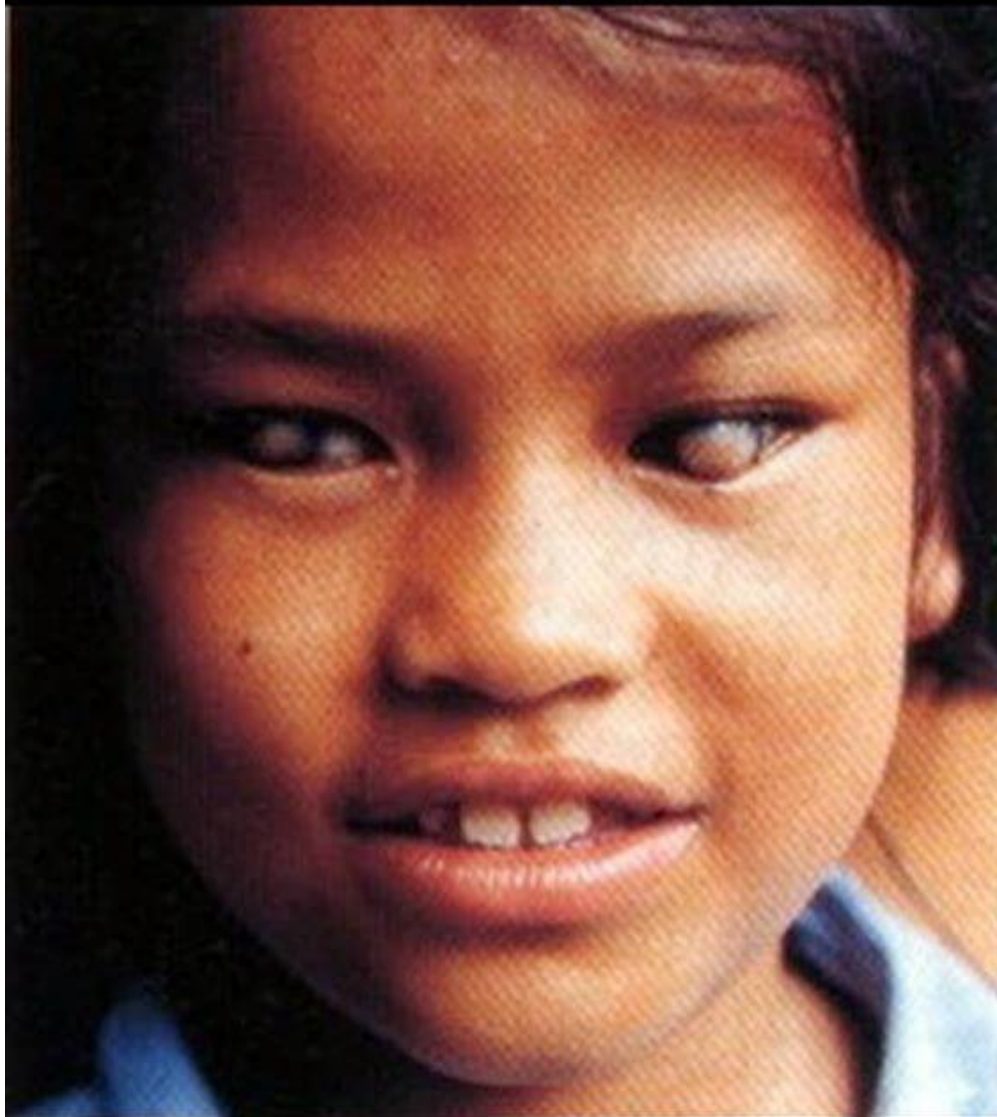
Credit: Ryan Megan

This is another that has been floating around social media for a few years. On the left is teosinte, the genetic ancestor to modern corn. Those fearful of biotechnology will often claim that artificial selection is natural but genetic engineering is not. But it depends on your definition of “natural”. Artificial selection involves humans selecting traits that are beneficial to humans, not ones that are beneficial to the organism’s survival in the wild. Corn would never have evolved without man’s intervention, there is nothing natural about it. On the other hand, recently researchers have discovered that bacterium transfer naturally contributed to the creation of the sweet potato.

Does that mean genetic engineering using that technique is even more natural?

3.

**Thank you, *GREENPEACE* for
ripping up Golden Rice fields.**



**Now, I'll never have to see a
single baby seal being clubbed.**

<http://www.skepticfriends.org> - <https://www.facebook.com/groups/GMOLOL/>

Credit: Art Canfill

Golden rice has been the poster child for the pro-GMO community long before I came on the scene. With technology donated by Syngenta for this public project, the hope has been to use a staple diet (rice) in developing countries to prevent blindness caused by vitamin A deficiency. Greenpeace has been waging war on it since the 1990s when they had an undercover operative working on the project leak details that allowed them to steal the seeds while in transit. Since then they have a nasty habit of destroying field trials, and then screaming about not enough testing. If a project like golden rice is allowed to succeed the anti-gmo movement would lose their biggest talking point, "corporations".

4.

Quick reference card for those who wish to repeat the rat experiment (-not recommended-)

Take a lot of rats.

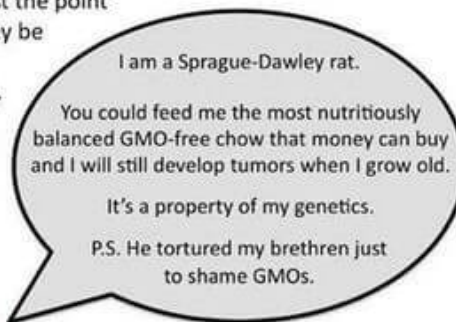
Divide them into a whole bunch of small groups. So small, in fact, that your power to detect statistically significant changes between treatments is rendered fatally inadequate.

Age the rats. Be sure to keep them alive well past the point where humane treatment would dictate that they be euthanized, just so that you can take horrifying images to document their unnecessary suffering.

When presenting your data, assume that it is totally fine to **omit representative images** of tumor-infested control rats. It saves space, and everyone already knows SDs get lumpy, right?

Embargo the shit out of the media when you publish your abortion of a science experiment and **time it with your book tour.**

Accept no blame.



#HonestErrorMyAss

The infamous, and retracted, Seralini study was retracted for a reason. This sums it all up beautifully. It was later republished without peer review, and Seralini recently won a case in France because a journalist there said he was an intentional liar. Something the first amendment in the United States gives me the right to do.

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5.

fVmfyxS H uwwlyVrcSNG

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Credit: Casey Miller

Anti-GMO crusaders think Monsanto is so powerful that it owns everything and everyone. From supreme court justices to Hillary Clinton's campaign, they see Monsanto everywhere. For the record Clarence Thomas worked there for only a couple of years in the late 1970s, and he hated it so much he went running to the public sector. Clinton's campaign, as revealed by Wikileaks, actually had close ties to the organic movement. Gary Hirschberg, Stonyfield exec and founder of Just Label It, was quite influential with her attempt to move back in to the White House.

6.

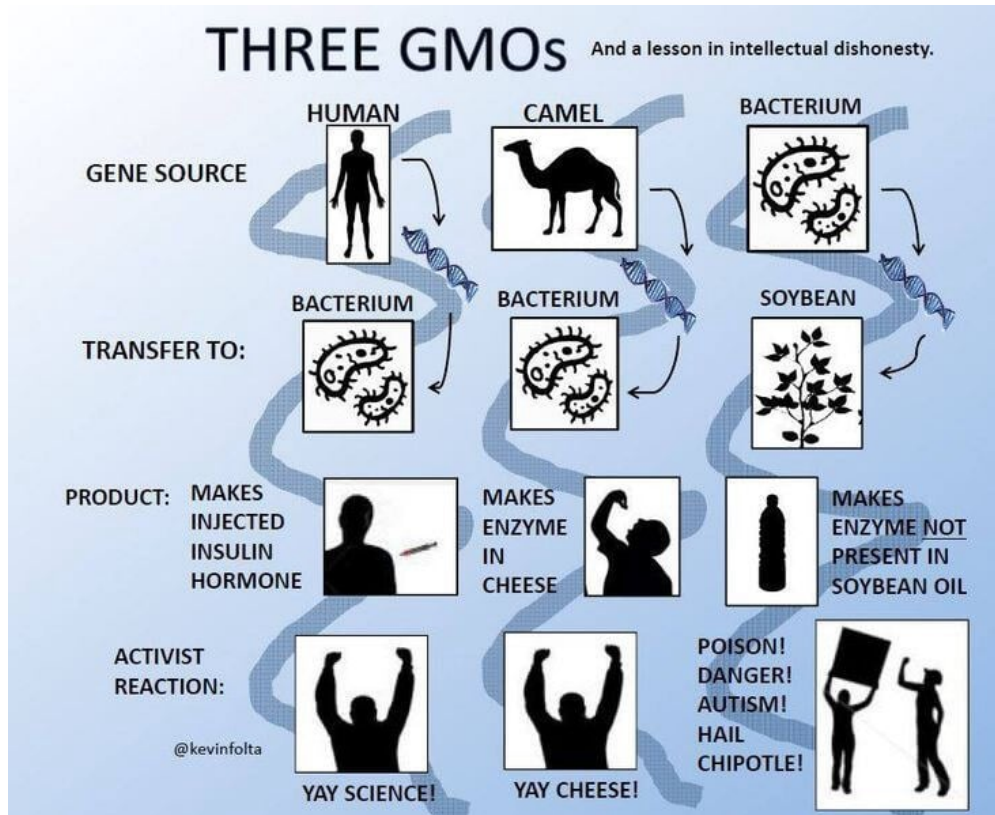
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Credit: Kevin Folta

This demonstrates how products produced (or partially produced) with genetic engineering are substantially equivalent to the conventional versions. Sugar doesn't even contain DNA by the time all of the processing is done to make it. Why demonize family farmers in the north who are only growing sugar beets because this technology makes it economically possible when you have the cane sugar barons in the south destroying the Everglades?

7.



Credit: Kevin Folta

Once again Professor Folta is able to so eloquently demonstrate the hypocrisy of the anti-GMO movement. In the 1970s and into the 1980s anti-GMO leaders like Sheldon Krimsky did indeed speak out against making insulin from GE bacteria, and activists in Germany forced a production facility to close. But that fear seems to have subsided in favor of scaring people about herbicide tolerant crops. The only problem is that you don't need that technology to make herbicide tolerant crops. Mutagenesis and artificial selection works just as well.



stephanie rovey
@AGinOREGON



Follow

In honor of Earth Day: why we switched to GMO sugar beets. Left side 100 oz/acre 6x per year. Right side 30 oz once.



This is more of a screenshot than a meme, but it still summarizes the point perfectly. Genetically engineered sugar beets, as mentioned before, don't get enough credit for helping the environment. The sugar cane barons have embraced the Non-GMO Project label, officially making the non-GMO groups shills for the [Fanjul Bros.](#)

9.

Crop Modification Techniques

Cross Breeding

Combining two sexually compatible species to create a variety with the desired traits of the parents



The Honeycrisp Apple gets its famous texture and flavor by blending the traits of its parents.

Mutagenesis

Use of mutagens such as radioactivity to induce random mutations, creating the desired trait



Radiation was used to produce a deeper color in the red grapefruit.

Polyploidy

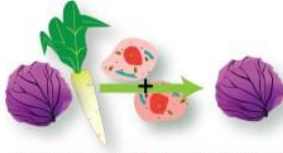
Multiplication of the number of chromosomes in a crop to impact its fertility



Seedless watermelons are created by crossing a plant with 2 sets of chromosomes with another that has 4 sets. The seedless fruit has 3 sets.

Protoplast Fusion

Fusion of cells or cell components to transfer traits between species



Male sterility is transferred from radishes to red cabbage by fusing their cells. Male sterility helps plant breeders make hybrid crops.

Transgenesis

Addition of genes from any species to create a new variety with desired traits



The Rainbow Papaya is modified with a gene that gives it resistance to the Papaya Ringspot Virus.

Genome Editing

Use of an enzyme system to modify DNA directly within the cell



Genome editing was used to develop herbicide resistant canola to help farmers control weeds.

www.biofortified.org

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By Layla Kattaree (@BiochicaGMO) in collaboration with Karl Haro von Mogel (@kharo)

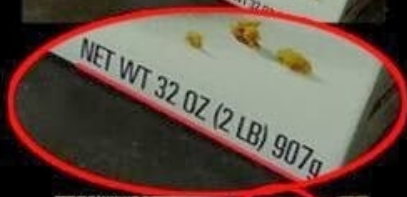
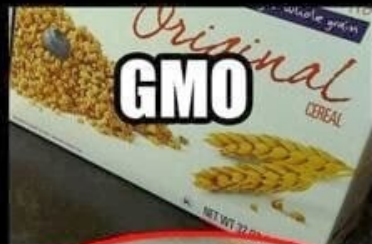
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Credit: Biofortified

There are many ways to genetically modify crops. This is why the FDA states that the term non-GMO is very misleading. The term “non-GE” would be honest.

What changed when Grape Nuts removed GMOs?



Vitamin A	15%	0%
Vitamin C	2%	15%
Calcium	90%	90%
Iron	10%	30%
Vitamin D	10%	30%
Thiamin	25%	25%
Riboflavin	25%	25%
Niacin	25%	25%
Vitamin B6	25%	25%
Folic Acid	25%	25%
Vitamin B12	20%	25%
Phosphorus	20%	25%
Magnesium	8%	10%
Zinc	10%	10%
Copper		

Vitamin A	0%	0%
Vitamin C	2%	15%
Calcium	90%	90%
Iron	25%	30%
Thiamin	4%	15%
Riboflavin	25%	25%
Niacin	25%	25%
Vitamin B6	50%	50%
Folic Acid	20%	30%
Phosphorus	20%	25%
Magnesium	8%	10%
Zinc	10%	10%
Copper		

32 oz went down to 29 oz

Vitamins D, B12, and A were removed

Riboflavin: 25% went down to 4%

You are paying more, and getting less.

That's not just NUTS, that's Grape Nuts.

Source: Biofortified

Did you know that many vitamins used to fortify our food are produced from genetically engineered yeast

and bacteria? The Non-GMO Project is so ideologically opposed to biotechnology that they will not allow these types of vitamins in food using their logo. Their web page talks about getting ridding our food supply of herbicide tolerant crops, but appears to skip over this inconvenient truth.

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