

GMO-Science Takes a Blow as Studies Are Retracted

March 11, 2014



Story at-a-glance

- Leading scientist for pro-GMO lobby, Dr. Pamela Ronald, recently retracted two studies. Her retracted research has in turn been cited by more than 120 other papers, causing a massive snowball effect of potentially invalidated research
- The two now retracted studies formed the basis of her research program into how rice plants detect certain pathogenic bacteria
- With the loss of her credibility, and the domino effect these retractions are likely to cause within the scientific field, the entire industry of biotechnology stands to suffer a great blow to its scientific integrity
- Genetically engineered foods have never been proven safe for consumption, and there are definitive correlations between the results from GMO animal-feeding studies and the patterns of human disease we're now seeing

By Dr. Mercola

The pesticide producers are one of the most powerful industries on the planet, the influence they possess is enormous. You have probably heard that an Elsevier journal has retracted the Seralini study which showed evidence of harm to rats fed a [GMO](#) diet, despite admitting they found no fraud or errors in the study.

This journal had also just recently appointed an ex-Monsanto employee as an editor - one could only guess the value of this strategy for the pesticide industry. Expect Seralini to sue as this story develops, as it appears he has a very strong case.

Alas, the scientific ground on which the genetic engineering of plants is built may now be shakier than ever, thanks to GMO promoting scientists like Dr. Pamela Ronald. A recent article in Independent Science News¹ questions whether she'll be able to salvage her career, as two of her scientific papers (published in 2009 and 2011 respectively) were recently retracted.

With the loss of her credibility, and the domino effect these retractions are likely to cause within the scientific field, the entire chemical technology industry stands to suffer a great blow to its scientific integrity.

"Her media persona... is to take no prisoners," Jonathan Latham, PhD writes.² "After New York Times chief food writer Mark Bittman advocated GMO labeling, she called him 'a scourge on



science' who 'couches his nutty views in reasonable-sounding verbiage.' His opinions were "almost fact- and science-free" continued Ronald.

In 2011 she claimed in an interview with the US Ambassador to New Zealand: 'After 14 years of cultivation and a cumulative total of two billion acres planted, GE crops have not caused a single instance of harm to human health or the environment.'"

She may have to turn down her criticism a notch, considering the fact that not one but two of her own studies were found to contain sizeable scientific errors, rendering her findings null and void. Questions have also been raised about a third study published in 2011, according to the featured article.

Public Face of GMOs Loses Scientific Credibility

Ronald's research group claimed to have identified a molecule used by rice plants to detect pathogenic rice blight, as well as a quorum sensing molecule (meaning a molecule that can coordinate gene expression according to the density of the local population).

These two studies, both of which are now retracted,^{3, 4} formed the basis of her research program at the University of California in Davis, which is investigating how rice plants detect certain pathogenic bacteria.

Ronald blamed the erroneous work by long gone lab members from Korea and Thailand, referring to the errors as a "mix-up." She didn't name her bungling colleagues, however. And while media coverage applauded Ronald for "doing the right thing" by retracting the studies, the featured article⁵ questions whether she really deserves such accolades:

"[S]cientific doubts had been raised about Ronald-authored publications at least as far back as August 2012... German researchers had been unable to repeat Ronald's discoveries... and they suggested as a likely reason that her samples were contaminated.

Furthermore, the German paper also asserted that, for a theoretical reason, her group's claims were inherently unlikely. In conclusion, the German group wrote: 'While inadvertent contamination is a possible explanation, we cannot finally explain the obvious discrepancies to the results...'

Pamela Ronald, however, did not concede any of the points raised by the German researchers and did not retract the Danna et al 2011 paper. Instead, she published a rebuttal.

The subsequent retractions, beginning in January 2013, however, confirm that in fact very sizable scientific errors were being made in the Ronald laboratory. But more importantly for the 'Kudos to Pam' story, it was not Pamela Ronald who initiated public discussion of the credibility of her research.

... Ronald's footnotes [in the explanation that accompanied the retraction of her second article⁶ admit two mislabelings, along with failures to establish and use replicable experimental conditions, and also minimally two failed complementation tests. Each mistake appears to have been compounded by a systemic failure to use basic experimental controls.



Thus, leading up to the retractions were an assortment of practical errors, specific departures from standard scientific best practice, and lapses of judgment in failing to adequately question her labs' unusual (and therefore newsworthy) results."

The Snowball Effect of Retracted Studies

According to data from Thomson Reuters,⁷ the numbers of scientific retractions have climbed more than 15-fold since 2001. What many don't realize is that even a small number of retracted studies can wreak absolute havoc with the science-based paradigm. Other scientists who have based their research on the results from studies that, for whatever reason, end up being retracted, are now perpetuating flawed science as well. In one example, two [retracted medical studies](#) led to the retraction of another 17.

In this case, the first of Dr. Ronald's retracted studies has been cited eight times.⁸ The second? 113 times.⁹ That sounds like an awfully large cleanup job in a field that's already heavily criticized for its preponderance of "lousy science," to use the words of award-winning geneticist Dr. David Suzuki.

The Problem with GMO Plant Science

It's important to realize that genetically engineered plants and animals are created using horizontal gene transfer (also called horizontal inheritance). This is in stark contrast to vertical gene transfer, which is the mechanism in natural reproduction. Vertical gene transfer, or vertical inheritance, is the transmission of genes from the parent generation to offspring via sexual or asexual reproduction, i.e., breeding a male and female from one species.

Horizontal gene transfer, on the other hand, involves injecting a gene from one species into a completely different species, which yields unexpected and often unpredictable results. Proponents of genetically engineered crops assume they can apply the principles of vertical inheritance to horizontal inheritance, but according to [Dr. David Suzuki](#), this assumption is flawed in just about every possible way and is "just lousy science."

Genes don't function in a vacuum — they act in the context of the entire genome. Whole sets of genes are turned on and off in order to arrive at a particular organism, and the entire orchestration is an activated genome. It's a dangerous mistake to assume a gene's traits are expressed properly, regardless of where they're inserted. The safety of genetically modified food is based only on a hypothesis, and this hypothesis is already being proven wrong.

The kind of horizontal gene transfer that is currently used to create new crop seeds tends to produce highly inflammatory foreign proteins. As one would expect, were there a connection, inflammation-based chronic diseases have indeed increased right alongside with the proliferation of GMO foods in the US. Clearly, Dr. Ronald never bothered to look at such data, and her declaration that "GE crops have not caused a single instance of harm to human health or the environment"¹⁰ is as lacking in scientific support as her retracted research.

Results from Animal-Feeding Studies Correlate with Human Disease Patterns

According to [Jeffrey Smith](#), who is one of the leaders in educating people about the concerns and dangers of GMOs, there are definitive correlations between the results from animal-feeding studies and the patterns of human disease we're now seeing. For example, the American Academy of Environmental Medicine has done a number of animal-feeding studies on GMOs and specifically enumerated the particular categories of diseases and disorders found in these controlled environments. These include:

Gastrointestinal problems	Immune problems	Reproductive problems
Organ damage	Dysfunction and dysregulation of cholesterol	Dysfunction and dysregulation of insulin

"You look at the three different corresponding factors: (1) what humans are getting better from, (2) what livestock is getting better from, (3) what afflictions are afflicting the lab animals fed with GMOs, and then you look at what diseases are really taking off in the United States – they're the same categories," Smith says.

For example, kidney problems have been demonstrated in [19 different animal-feeding studies](#), and kidney diseases are on the rise in the US. Could there be a connection? Smith and I both believe this to be the case. According to Smith:

"We heard from two people at a meeting in Arizona, someone whose husband was nearly on dialysis and someone else who had three kidney transplants – both situations reversed when they changed their diet. You see things like the animal-feeding study out of Russia where the babies were a lot smaller after being fed GE soy, and you see the incidence of low-birth-weight babies is going up in the United States... Deaths from senile dementia moved along at a certain pace, and then when GMOs or Roundup were introduced, it shot up... So, you see these correlations between these four things now: (1) the animal-feeding studies, (2) people getting better [when removing GMO], (3) livestock getting better [when removing GMO], and (4) changes in the disease rates."

GMO Foods Have Never Been Proven Safe for Long-Term Consumption

In 2009, the American Academy of Environmental Medicine called for a [moratorium on genetically modified foods](#), and said that long-term independent studies must be conducted, stating: "Several animal studies indicate serious health risks associated with GM food, including infertility, immune problems, accelerated aging, insulin regulation, and changes in major organs



and the gastrointestinal system. ...**There is more than a casual association between GM foods and adverse health effects. There is causation...**"

Despite this sound warning, genetically engineered foods continue to be added to the US food supply with no warning to the Americans buying and eating this food. Genetic manipulation of crops, and more recently [food animals](#), is a dangerous game that has repeatedly revealed that assumptions about how genetic alterations work and the effects they have on animals and humans who consume such foods are deeply flawed and incomplete. Monsanto CEO Hugh Grant claims genetically engineered crops are "the most-tested food product that the world has ever seen." What he doesn't tell you is that:

1. Industry-funded research predictably affects the outcome of the trial. This has been verified by dozens of scientific reviews comparing funding with the findings of the study. When industry funds the research, it's virtually guaranteed to be positive. Therefore, independent studies must be done to replicate and thus verify results.
2. The longest industry-funded animal feeding study was 90 days, which recent research has confirmed is FAR too short. In the world's first independently funded [lifetime feeding study](#), massive health problems set in during and after the 13th month, including organ damage and cancer.
3. Companies like Monsanto and Syngenta rarely if ever allow independent researchers access to their patented seeds, citing the legal protection these seeds have under patent laws. Hence, independent research is extremely difficult to conduct.
4. There is no safety monitoring. Meaning, once the genetically engineered item in question has been approved, not a single country on Earth is actively monitoring and tracking reports of potential health effects.

Vote with Your Pocketbook, Every Day

Remember, the food companies on the left of this graphic spent tens of millions of dollars in the last two labeling campaigns—in California and Washington State—to prevent you from knowing what's in your food. You can even the score by switching to the brands on the right; all of whom stood behind the I-522 Right to Know campaign. Voting with your pocketbook, at every meal, matters. It makes a huge difference.

I-522: Your right to know.
 WASHINGTON STATE GMO LABELING INITIATIVE

CORPORATE AGRIBUSINESS/BIOTECH FIGHTING I-522

ORGANIC LEADERS SUPPORTING I-522

VS.

Click here to expand

The GMO Divide — Let's All Reward the True Organic Heroes.

As always, I encourage you to continue educating yourself about genetically engineered foods, and to share what you've learned with family and friends. Remember, unless a food is certified organic, you can assume it contains GMO ingredients if it contains sugar from sugar beet, soy, or corn, or any of their derivatives.

http://www.youtube.com/watch?v=_FkY8tKS1uo#t=70

If you buy processed food, opt for products bearing the USDA 100% Organic label, as organics do not permit GMOs. You can also print out and use the [Non-GMO Shopping Guide](#), created by the Institute for Responsible Technology. Share it with your friends and family, and post it to your social networks. Alternatively, download their free iPhone application, available in the iTunes store. You can find it by searching for ShopNoGMO in the applications. For more in-depth information, I highly recommend reading the following two books, authored by Jeffrey Smith, the executive director of the [Institute for Responsible Technology](#):



- [Seeds of Deception: Exposing Industry and Government Lies about the Safety of the Genetically Engineered Foods You're Eating](#)
- [Genetic Roulette: The Documented Health Risks of Genetically Engineered Foods.](#)

For timely updates, [join the Non-GMO Project on Facebook](#), or [follow them on Twitter](#). Please, do your homework. Together, we have the power to stop the chemical technology industry from destroying our food supply, the future of our children, and the earth as a whole. All we need is about five percent of American shoppers to simply stop buying genetically engineered foods, and the food industry would have to reconsider their source of ingredients—regardless of whether the products bear an actual GMO label or not.

Sources and References

[1 Independent Science News November 12, 2013](#)

[2 See ref 1](#)

[3 PLOS One December 12, 2011, Retracted](#)

[4 Science 6 November 2009: 326\(5954\); 850-853, Retracted](#)

[5 Independent Science News November 12, 2013](#)

[6 Scientific American October 10, 2013](#)

[7 Pharmalot August 10, 2011](#)

[8 Retraction Watch September 11, 2013](#)

[9 Retraction Watch October 10, 2013](#)

[10 Independent Science News November 12, 2013](#)