

# More Scientific Proof: GM Food Is As Safe As Non-GM Food

AddThis Sharing Buttons

Share to Facebook612Share to TwitterShare to Google+Share to LinkedIn9Share to WhatsApp

The Royal Society, London, has published a report that debunks many myths about GM food.

The report says that ‘it is impossible, from a scientific point of view, to make a blanket statement that all GM is good or bad.’

Last year, GM crops were grown in 28 countries on 179.7 million hectares – that is over 10% of the world’s arable land.

Environment Minister Prakash Javadekar recently (23 May) [said](#) that 18 field trials for testing various kinds of genetically modified seeds were underway. He said technology has to be encouraged to give a leg up to India’s lagging agricultural productivity.

A panel comprising biotechnologists, ecologists and sociologists has also been set up by the Environment Ministry to take a call on GM Mustard, which is being developed as part of a research collaboration involving scientists at Delhi University.

Now, this has caused a lot of outrage in the anti-GM ecosystem. So much misinformation has been spread over the years on this topic that it has created an environment where emotions often over-rule the scientific judgement. Some scream Monsanto whenever they hear GM crops. Conspiracy theories galore. For Luddite activists, GM is nothing more than evil Monsanto and Wal-mart.

How about listening to scientists who may not have all the answers but have spent a lot of time doing research looking for some of them?

The Royal Society, based in London, and headed by Venki Ramakrishnan, a Nobel prize winner in Chemistry, has published a [report](#) (pdf) answering 18 frequently asked questions on GM crops.

Venki says that “it is important to recognise that when the GM method is used the crops produced should be assessed on a case by case basis. GM is a method, not a product in itself. Different GM crops have different characteristics and **it is impossible, from a scientific point of view, to make a blanket statement that all GM is good or bad.**” (emphasis ours)

To reiterate: One can never make blanket statements like ‘GM is good’ or GM is ‘evil’. It varies from crop to crop.

Before moving on to the contentious issue regarding GM crops, let's define what genetic modification is and how it's done:

“GM is a technology that involves inserting DNA into the genome of an organism. To produce a GM plant, new DNA is transferred into plant cells. Usually, the cells are then grown in tissue culture where they develop into plants. The seeds produced by these plants will inherit the new DNA.”

So far so good. Now, here are five most important ones that would debunk a lot of myths spread by half-baked intellectuals.

### **What are some unforeseen consequences of GM?**

There is no evidence that producing a new crop variety using GM techniques is more likely to have unforeseen effects than producing one using conventional cross breeding.

Simply inserting genes doesn't necessarily mean there will be unintended consequences. Bacteria or viruses that infect plants also insert new genes into them and plant genomes contain many 'jumping genes' which reinsert themselves in various places. So, all new crop varieties, irrespective of how they are bred can have unintended consequences.

It's not GM specific.

### **Is it safe to consume GM food?**

Yes. There is no evidence that a crop is dangerous to eat just because it is GM. There could be risks associated with the specific new gene introduced, which is why each crop with a new characteristic introduced by GM is subject to close scrutiny. Since the first widespread commercialisation of GM produce 18 years ago **there has been no evidence of ill effects linked to the consumption of any approved GM crop.**

The report says that claims about GM food risking human health are not about the GM method itself but “about the specific genes introduced, or about the agricultural practices associated with the crop, such as herbicide treatments.”

In fact, one animal feeding trial has shown, the report claims, that the GM tomatoes modified to produce more antioxidants reduce the levels of cancer. (Antioxidants are known to reduce cancer).

### **Could eating GM food have an effect on my genes?**

No. Eating GM food will not affect a person's genes. **Most of the food we eat contains genes**, although in cooked or processed foods, most of the DNA has been destroyed or degraded and the genes are fragmented. Our digestive system breaks them down without any effect on our genetic make-up. Our own genes are made by our bodies from the building blocks that we obtain from digesting any food. This is true of food from GM and non-GM.

Do you know that the non-GM food we eat contain about 30,000 genes? Well, GM food has only 1-10 additional genes. And, the composition of DNA is same in both GM and non-GM food. So, relax. 10 extra genes are not going to effect your genes.

### **Do GM crops cause damage to the environment?**

Environment is a favourite topic of our leftist luddites. Here's what our scientists have to say:

Crops do not damage the environment simply because they are GM. Some farming practices, such as the overuse of herbicides resulting in the excessive eradication of wild plants from farmland have been shown to harm the environment. These problems are similar for non-GM and GM crops.

Wrong farming practices cause damage to the environment both in the case of GM and non-GM crops. Don't blame the technology.

In fact, crops modified to be insect resistant can have environmental benefits. Due to growing of GM insect resistant cotton, the use of insecticides has come down and this has had a positive effect on the health of farmers as well as that of the environment.

### **GM crops have only been around for 20 years, might there still be unexpected and untoward side effects?**

Yes, there could be unexpected side effects **from any new crop variety, GM or non- GM**, as well as with any new agricultural practices. Risk assessment and appropriate testing of all new crops, along with ongoing monitoring should mitigate the risks.

Appropriate testing should be done to ensure there are no side effects for both GM and non-GM food but as it turns out GM food is more extensively tested than non-GM food. The former faces way more scrutiny. Non-GM food gets a pass by the virtue of being non-GM.

### **Some other interesting pointers from the report:**

**#1** Last year, GM crops were grown in 28 countries on 179.7 million hectares – that is over 10% of the world's arable land.

**#2** Among the countries growing GM crops, the USA (70.9 Mha), Brazil (44.2 Mha), Argentina (24.5 Mha), India (11.6 Mha) and Canada (11 Mha) are the largest users.

**#3** The top GM crop grown in 2015 was soybean (92.1 MHa), followed by maize (53.6 Mha), then cotton (24 Mha) and oilseed rape (canola) (8.5 Mha). This represents 83% of the world production of soybean, and 75% of production of cotton. GM crops made up 29% of the world's maize produce, and almost a quarter of the world's oilseed rape that year.

**#4** The main GM crops, maize (corn) and soybean, are used mostly for feeding animals. Meat, milk and eggs from animals fed with GM crops are eaten by people in many countries.

**#5** There are cases where a GM crop has not delivered the intended improvements. But the same problems arise with conventional breeding approaches.

The anti-GM lobby has no scientific rational to stand on. It's time they stopped their futile resistance which is possibly keeping many millions out of the food security net.

The government should not be intimidated by the leftist cabal. It should continue with field trials.