

DECEIT UNLIMITED

## The Emperor Has No Clothes

Vandana Shiva

*Genetic engineering has not increased the yield of a single crop, writes Vandana Shiva.*

PEOPLE HAVE BEEN repeatedly told that genetically engineered (GE) crops will save the world. They will save the world by increasing yields and producing more food. They will save the world by controlling pests and weeds. They will save the world by giving farmers drought-tolerant seeds (and other seed traits) that will provide resilience in times of climate change.

However, the GE Emperor (Monsanto) has no clothes. All of these claims have been established to be falsehoods from years of experience all across the world. And the fact is that genetic engineering has not increased the yield of a single crop.

Navdanya's research in India has shown that, contrary to Monsanto's claim of a Bt cotton yield of 1,500kg per acre, the reality is that the yield is an average of just 400-500kg per acre. And in the US, a report by the Union of Concerned Scientists called *Failure to Yield* has established that genetic engineering has not contributed to yield increases in any crop. According to this report, increases in crop yields in the US are due solely to yield characteristics of conventional crops.

In 20 years of commercialisation of GE crops, only two traits have been developed on a significant scale: herbicide tolerance and insect resistance.

Herbicide-tolerant (or Roundup Ready) crops were supposed to control weeds, and Bt crops were intended to control pests. But instead of controlling weeds and pests, GE crops have led to the experience of superweeds and superpests and, in the US. Roundup Ready crops have produced weeds that are resistant to Roundup.

Approximately 15 million acres are now overtaken by superweeds, and, in an attempt to kill them off, farmers have been paid US\$ 12 per acre by Monsanto to spray even more lethal herbicides such as *Agent Orange*, which was used during the Vietnam War.

In India, Bt cotton sold under the trade name Bollgard was supposed to control the bollworm. Today, the bollworm has become resistant to Bt cotton, so now Monsanto is selling Bollgard II, which contains two additional toxic genes. All that has happened is that new pests have emerged and farmers are using more pesticides.

Monsanto has been claiming that through genetic engineering it can breed crops for drought tolerance and other climate-resilient traits. This is a false promise. As the US Department of Agriculture (USDA) states in its draft environmental assessment of the new drought-tolerant GE

corn, "equally comparable varieties produced through conventional breeding techniques are readily available in irrigated corn production reviews".

Helen Wallace of Gene Watch UK cautions: "The GM [genetic modification] industry must now stop its cynical attempts to manipulate the public into believing that GM crops are needed to feed the world."

While the GE Emperor has no clothes - i.e. GE crops cannot feed the world -it has the potential for both harming and enslaving the world. There are enough independent studies to show that GE foods can cause health damage. For example, Biochemist Arpad Pusztai's research has shown that rats fed with GE potatoes developed an enlarged pancreas, suffered shrunken brains and had damaged immunity, and Gilles-Eric Seralini's research has shown that other organ damage can also occur.

Acting on the order of the European Council, the Committee of Independent Research and Information on Genetic Engineering (CRIIGEN) and universities at Caen and Rouen were able to get hold of the raw data for Monsanto's 2002 feeding trials on rats, which they made public in 2005. The researchers found that rats fed with three approved varieties of GE corn - NK603 (modified to be tolerant to Roundup) and MON810 and MON863 (both engineered to synthesise toxins used as insecticides)—all suffered organ damage.

According to Seralini, a molecular biologist at the University of Caen, the data "clearly underlines adverse impacts on kidneys and liver and the dietary, detoxifying organs, as well as different levels of damage to the heart, adrenal glands, spleen and haematopoietic systems.

The biotechnology industry has attacked Pusztai, Seralini and every other scientist who has done any independent research on genetically modified organisms (GMOs). It would appear then that GMOs cannot coexist with the independence and freedom of science.

Besides their impact on health, GMOs have severe ecological impact, the most significant being genetic contamination. (Canadian farmer Percy Schmeiser lost his canola seed as a result of contamination from neighbouring GE crops.)

In addition to causing harm to public health and ecosystems, GE seeds and crops provide a pathway for corporations to "own" seeds through patents and intellectual property rights (IPRs). Patents provide royalties for the patent holder and corporate monopolies. This translates into superprofits for Monsanto. For the farmers this means debt. More than 250,000 Indian farmers have been pushed to suicide in the last decade and a half. Most of the suicides have been in the cotton belt, where Monsanto has established a seed monopoly through Bt cotton.

The combination of patents, genetic contamination and the spread of monocultures means that society is rapidly losing its seed freedom and food freedom. Farmers are losing their freedom to have seed and grow organic food, free of the threat of contamination by GE crops. Citizens are losing their freedom to know what they are eating, and to have the choice to eat GE-free food.

This is why GE crops are an issue for democracy. Food democracy is everyone's right and responsibility. Each citizen must defend food freedom and urge government to protect the rights, of their citizens, and stop supporting corporate takeover of seeds and foods. Even a feeble voice of dissent is vital to create food democracy. □□□

*—Third World Network Features*