

WHAT'S THE BIG DEAL ABOUT GMOs ANYWAY?¹

Dana Blinder[©] and Leah Zerbe[©]

Sometimes, protecting the future means going back to your roots...and back to the soil, to the seeds. That's how Vandana Shiva, PhD, world-renowned physicist and relentless eco-crusader, is leading the charge to save her country from a corporate GMO takeover. (GMO refers to genetically modified organisms; crops that have extra genes inserted into them in the lab.) Shiva, who studied in Canada to earn her doctorate in particle physics, took her knowledge back to her home country, India, where she leads the attack against GMO pollution. There, she launched Navdanya, a seed-saving organization that has helped save thousands of plant varieties from going extinct.

Shiva speaks of "freeing the seeds," which in turn frees farmers from reliance on failed biotech agricultural methods that are expensive and require increased use of dangerous pesticides because pests and weeds are growing resistant to chemical warfare. Growing GMO crops is also expensive. So far, 200,000 Indian farmers have committed suicide, overcome by the insurmountable debt they've accumulated after switching from traditional, sustainable farming to corporate, chemical, GMO-based "farming."

Shiva spoke with Rodale.com before her Tuesday-night speech to a packed crowd at Moravian College in Bethlehem, Pennsylvania, in which she made connections between GMOs and antibiotic-resistant superbugs, unprecedented chronic global hunger, and biopollution.

(1) Rodale.com: What are the biggest dangers that GMOs pose to our environment and our health?

Vandana Shiva: They actually increase the toxification of our food system, even while claiming to be an alternative to chemicals. If you look at what has been achieved in the last two decades, you have herbicide-resistant crops and you have Bt-toxin crops. The former was intended to control weeds, the latter to control pests. What you have instead is the creation of super-weeds, which has increased the usage of herbicides and the creation of super-pests, which has increased the use of pesticides sprays. We have monitored the Bt cotton in India, 13-fold more pesticides are sprayed on Bt cotton.

That's the first problem, but the second problem is now you have the toxins built into the plants. With the Bt toxin you've taken the genes that produce a toxin and put them into the plant. And because it's such a clumsy technology, you don't just put a toxic gene into the plant, you have to add antibiotic-resistant markers to separate the cells that absorbed the gene from those that didn't. And because no plant wants an alien gene in it, like no organism wants an alien element, what you have to add is a viral promoter to pump up the expression of the gene.

So for every GMO you have three lethal transformations: A toxic gene whose impact you don't know; antibiotic resistance markers—which already is a problem, given that antibiotic

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resistance is emerging both with farm animals and human beings; and if you have antibiotic resistance markers, you're going to have gene jumping. I think the whole issue of the H1N1 virus, the fact that it had genes for three influenzas, human, chicken, pig—all of these crossings are becoming possible because of the crossing of genes across species barriers.

(2) Are we getting closer to eliminating or reducing GMOs, or are things getting worse?

VS: There is proof we are making progress if you look at data in the U.S. It's not just those who don't like GMOs who are turning away from them, it's farmers who went for GMO planting who are realizing it's more costly, they're losing more, you're better off in GMO-free agriculture. Monsanto shares are coming down, and the acreages they expected are coming down. I think because a false promise was sold with GMOs, I do believe we have a GMO-free future ahead.

(3) What has been the experience with GMOs in India, and are there lessons for the U.S. and other countries to learn from it?

VS: The first GMO bought to India by Monsanto was in 1997/1998, Bt cotton. They put huge ads in the newspapers saying how they were going to bring this miracle seed. I know the laws of my country and checked with environmental administrator, and found Monsanto did not ask for approval, although we have an environmental protection act stating any deliberate release of GMOs must go under environmental assessment. Just like they have dismantled any bio-safety laws in the U.S., they thought they could just walk into India and do the same. I filed a case. And we stopped them until 2002, when they managed to get approval. What we've seen from 2002 to 2010 is a very high epidemic of farmer suicides, which started when Monsanto started to control the cottonseed. Today, Monsanto has 90 percent control over the seed supply of cotton, in a land where we use to have 1500 varieties, including open-pollination varieties. That's how fast this monopoly can emerge. The cost for cotton seeds rose from 7 rupees a kilogram to 3,600 rupees, 2,400 of which was a royalty share.

It's a big issue in India. Because the technology is a failed technology, the pesticide usages have increased, farmers are in debt, and it's that indebtedness that has pushed 200,000 Indian farmers to suicide. Our studies show 84 percent are directly linked to debt caused by Bt cotton.

The next product Monsanto tried to launch this year in February was Bt eggplant. We have 4,000 varieties of eggplant; it was domesticated in India. We built up a movement from 2006 when the trial started. We've compelled the government to relook at the approval when it was granted. The environmental administrator held public hearings around the country, and after hearing people, farmers, citizens, scientists, he called for a moratorium.

I think the lessons India has for the U.S. is first it has to have bio-safety regulation. Also, there has to be democracy. Every time there is talk of democracy violated in China, I think of the democratic violations when people are denied their right to know and denied their right to choose. Monsanto is working right now to prevent labeling laws in India, which have been drafted and are there, and they're preventing them. I don't think you can have a product where a company says, "I'm pushing it on you, destroying your alternatives, and I'm preventing you from knowing what's in it." Especially when it's food, it's not even the clothing we wear, it's food that goes in us. I think this food fascism must end. The kind of

movements India has built on food democracy, I'd like to see in the U.S. I think in the U.S. we need far more community seed banks far more open-source seeds, especially now that the GMOs are failing, we can't leave the farmers without options.

(4) Do you find it difficult to avoid eating GMO food? What advice do you have for avoiding it?

VS: In India, the only crop that has been genetically modified is cotton. We've prevented in our movements any food crop from being genetically modified.

In the U.S., because the main crops genetically modified are soy and corn, I think the best way to avoid them is to avoid processed food. I think there are such delicious alternatives. People should promote local markets and organic food; that's where you can ensure you're not being imposed with a GM diet.

I think de-industrializing our food system has to be the next human leap. We've been made to believe seed doesn't give rise to seed, so buy GM seed. You can't bake your bread or set your yogurt, everything has to be industrial. If we don't de-industrialize our food system, we're going to be killed by obesity, diabetes, and everything else.