

DON'T BE FOOLED BY GENEWASHING¹

Emily Main[©]

When you're at the grocery store and come across a pluot (plum crossed with apricot), a nectarot (nectarine crossed with apricot), or a seedless watermelon, do you think it's a genetically modified mutant or a farmer's experiment with hybrid plants? If you opted for the former, you'd be wrong, but you wouldn't be alone. "There's been a conscious effort on behalf of biotech companies to confuse people, saying that farmers have been using genetic modification for generations," says Jeffery Smith, founder of the Institute for Responsible Technology, a nonprofit devoted to educating the public about the risks of genetically modified crops. That's not the case, he adds. Crossbreeding and creating hybrid crops, such as pluots and seedless watermelons, have been common practices for centuries, but the process is very different from genetic modification.

Hybrid Plants

"Hybridization is based on sex," says Smith. Plant breeders take two "parents" of the same plant species that are closely related, and pollinate them so that they reproduce and gain certain desirable traits, such as drought resistance or the ability to repel pests. "Crossbreeding is effective in accelerating certain traits," he adds. "Farmers can identify those and grow the plants just as quickly as they would genetically modified crops."

Hybrid plants (the result of crossbreeding) don't have any of the unhealthy effects that research is finding are associated with genetically modified crops. And the method works just fine for creating new crops. "The practice of crossing hybrid seeds has been going on for centuries. It has a long track record that shows it can feed humans and mammals effectively," Smith says. There are hybrid corn varieties that resist the European corn borer as effectively as Bt corn (a form of GMO corn). And consider the case of Golden Rice, a genetically modified strain of rice that crop scientists have been struggling for years to get to the market, because they believe its high vitamin A levels could cure deficiencies in the developing world; its detractors question their evidence and feel that cheaper, more effective and less biologically risky solutions to vitamin A deficiency already exist. Smith says that some hybrid varieties of red rice have higher levels of vitamin A than genetically modified Golden Rice. But hybrid seeds can't be patented, as genetically modified seeds can, says Smith, and big industries aren't interested in investing in them.

Genetic Engineering

Crossbreeding is such a tried-and-true method for developing new crops that it's no wonder the GMO (genetically modified organism) crowd wants to "genewash" us into believing they're doing pretty much the same thing. But in fact the two techniques are worlds apart. Usually, the process of genetic modification involves genes from totally different species that could never be crossbred—wheat genes injected into soybeans, for example. Sometimes, genes are transferred not just from another species, but from a different kingdom, such as animal cells injected into plant cells.

¹ Rodale News, October 19, 2010

Genetically engineered crops are usually created one of two ways. The first is through a "gene gun." "You basically shoot millions of genes into a plate of cells, which you then clone into a plant," Smith says. The other way is through a bacterial infection; scientists create tumors out of various bacterial strains that "smuggle" the new gene into another plant's cell.

"The process creates extensive mutations," says Smith. "Inserting those genes can damage the DNA of the original plant." He adds that genes in the original plant can then change the way they function, so that, for instance, a corn gene that's normally silenced or inactive in a non-GMO variety could suddenly become active in a GM variety and trigger allergies, increase certain biological toxins, or become carcinogenic. Genetically modified crops are often designed to manufacture their own pesticides, he adds, and we're essentially eating those pesticides when we eat GM crops. "Genetically modified corn and soy have higher levels of lignin, which also produces rotenone," Smith says. Rotenone, a pesticide, has been linked to higher rates of Parkinson's disease. "It's genetic roulette," Smith says. "We really are babes in the woods with this technology, and we're feeding the products of an infant science to the public."

One other major difference between the two: Hybrid seeds are allowed for use in organic production, while GMO seeds most definitely are not.