

As I See It: Rethink GMOs as sustainable agriculture

by Megan McKenzie

Could it be that genetic engineering, like so many things in life, is not black-and-white but many shades of gray? I don't like being pressured to sit on one side of the fence or the other, to make a choice between us and them. I identify both with "us" and "them."

A couple of weeks ago, I heard Roger Beachy, the president of the nonprofit Donald Danforth Plant Science Center in St. Louis, speak about genetically engineered crops. His was the first talk in the OSU lecture series "Food for Thought: History, Technology, Gastronomy" at the LaSells Stewart Center.

Beachy is a big name in science, and I was excited to be there, especially during the question and answer hullabaloo after his lecture. As voices grew louder, I became clearer: Sure, there are legitimate arguments against some types of genetically modified organisms or GMOs, but there are compelling arguments for others. Both are obscured by all the misinformation out there. To make any sense of it, we've got to respect differences in opinion and seek accurate information.

Like most people, I don't like the phrase, "genetically modified" food. It's ... unappetizing. And it's murky. Virtually all the foods we ate — even 100 years ago — were modified genetically through selection, breeding, and mutagenesis. How, exactly, is genetic engineering any different?

It's different mainly because it uses recombinant DNA technology to change genes directly, instead of indirectly.

Using classical breeding, you can't cross a bee and an apple tree. But recombinant DNA technology makes it possible to bypass reproductive boundaries. You can take a gene from any species — plant or animal — and place it into most any other species.

Of course, it is precisely this power that scares people.

Bacterial genes in your banana nut bread may sound like a big yuckorama, but the underlying biological principle that makes that possible is actually quite beautiful: Unity.

Even though organisms are very different, they are also very much the same; all living things use similar metabolic pathways and enzymes — and they use similar genes to encode these enzymes. The genes of all organisms consist of DNA and — scientifically speaking — it's what the DNA makes that matters, not where the DNA comes from.

So it doesn't make sense to me that genetically engineered crops can't be labeled organic, even when they're grown without manufactured chemicals. I would rather see a label that says "sustainably grown."

Sustainable agriculture is a way of raising healthy food that doesn't harm the environment, respects animals, provides fair wages and supports rural communities. Biotechnology may turn out to be a good tool for advancing sustainability — not a foolproof tool, and by no means the only tool, but a good tool.

Many claims have been made about the risks of genetically engineered crops, but they haven't been substantiated by rigorous data analysis. Thousands of scientists — not businessmen or entrepreneurs but scientists — have signed a declaration of support for agricultural biotechnology. Members of the Ecological Society of America have long said that each modification — all its merits and risks — should be considered individually.

For example, Beachy and others want to develop more nutritious subsistence crops for the Third World. Do the poor and hungry have a right to use these technologies? Should the developed world create barriers to their access, legislatively or otherwise?

If, as a community, we "take down the fence," we can stop choosing sides and start making good decisions. Tonight at 7 in the LaSells Stewart Center, in the next lecture in the series, Gary Marchant (a professor of environmental law at Arizona State) will address global policy issues concerning GMOs. Want to sit with me? I'll be in the middle.

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