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What's Wrong with Biotech?

Introduction:

Many people are uneasy about how biotechnology is being applied and commercialized, especially when it comes to food crops. The most extreme anti-genetically-modified-organism position is that the entire idea of biotech is wrong. We have no business cutting and pasting genes from one organism to another, and only bad can come of it.

The other side of the divide is represented by scientists who work in biotech and have no idea what all the fuss is about. People have been altering genes in plants and animals for thousands of years. Today's hybrid corn bears little resemblance to its wild ancestors and people don't call it a Frankenfood. Likewise today's dogs don't look like or act like (thankfully) their wild ancestors.

To people outside the business it may not be obvious how much molecular biology has influenced the life sciences, while to scientists in biotech its benefits are so obvious that it is hard for them to understand the public's anxieties. Today's scientists have grown up with molecular biology and it has become a senior partner in most life science disciplines. Since Watson and Crick received the Nobel Prize for working out the structure of DNA in the early 1950s, molecular biology has transformed how every biological discipline is done, including botany, zoology, genetics, medicine, pharmacology, and forensics. Molecular

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biology has been an academic juggernaut, rolling over departments, sucking up grant money and appointments, and explaining everything. Well not quite, but molecular biology has spun off a multi-billion dollar industry, biotechnology.

The most fervent anti-gmo organizations tend to play to peoples' ignorance and anxieties. A quick examination of their Websites shows the basic propaganda tool kit: scary catch phrases, screwy logic, using only information that supports the position and ignoring the rest. Such behavior is every bit as dishonest as the most despicable right wing ranter's. Lowering the debate about these important issues to the level of propaganda hurts the credibility of all environmental

organizations and thus their ability to influence events.

The most effective way to protect people and the environment from unintended consequences and/or bad effects of biotech will be based on open and honest evaluations of the pros and cons of the various parts of the biotech enterprise.

We spoke with Steven Strauss about the public perceptions of biotechnology and how to raise the level of the debate.

ER: Professor Strauss, what is your training?

SS: I have a Bachelor's in biology from Cornell in plant and forest ecology; then a Master's at Yale School of Forestry; and a Ph.D. at Berkeley. Midway through my Ph.D. training I got interested in genetics, not biotechnology, but traditional population genetics and breeding in trees. It wasn't until I started my faculty position at Oregon State University that I started using DNA methods, and it wasn't until several years into that that I started working in genetic engineering.

At Berkeley I had to have someone on my committee who was not a biologist or a forester, so I had a sociologist on my supervisory committee who made me think about the social implications of genetics and technology. That has helped me as I try to explain to the public what we're doing in biotechnology and how to look at it in a broader environmental framework.

Most of my colleagues in biotechnology majored in biochemistry or some pretty technical reductionist

