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Saying no to gene-spliced crops means saying yes to pesticides

By Dr. Henry Miller

Nobel Laureate Anatole France said famously, "If 50 million people say a foolish thing, it is still a foolish thing." That applies as well to the members of the Santa Cruz County Board of Supervisors, who Tuesday did a foolish thing by banning the cultivation of plants genetically improved with state-of-the-art techniques.

This action is representative democracy at its worst. To begin with, the proposal is unscientific and logically inconsistent, in that its restrictions are inversely related to risk -- in other words, they permit the use of microorganisms and plants that are crafted with less precise and predictable techniques, but would ban those made with more precise and predictable ones. This turns science-based regulation on its head.

California boasts a strong environmental movement, but by outlawing the cultivation of insect-resistant crops developed with the assistance of biotechnology, the supervisors would ensure the increased use of chemical pesticides and persistence of these chemicals in the area's ground and surface water. (It will also result in increased occupational exposures: Let's not forget that *Homo sapiens* are part of the environment.)

Most important of all, the county prohibitions will block sophisticated genetic approaches to the eradication of blights such as sudden oak death, phylloxera, powdery mildew and Pierce's disease, a bacterial infestation carried by a leaf-hopping insect, the glassy-winged sharpshooter.

Pierce's disease, which threatens California's multibillion-dollar wine and table grape industries, should be of concern to everyone involved in Santa Cruz County agriculture. (The glassy wing sharpshooter preys on a variety of crops.) Genetic improvement of plants may well prove to be the definitive solution -- one that should not be denied to local farmers merely because of the willful ignorance of political leaders."

Biotechnology's potential is not just theoretical. By inserting a single gene into squash, sweet potatoes and other crops, scientists have made them virus-resistant. Gene-spliced papaya varieties have resurrected Hawaii's \$64 million-a-year industry, which was moribund a decade ago because of the predations of papaya ringspot virus. In addition, because of the way that gene-splicing enhances the resistance of plants to pests and disease, the natural environment already has been spared the use of scores of millions of pounds of chemical pesticides.

The future holds out even greater hope. The technology makes it possible to remove dangerous allergens from wheat, peanuts, milk and other commonly allergenic foods. Gene-splicing will allow crop varieties to thrive in conditions of drought or near-drought. Imagine the boon to water-distressed countries -- and to California during its next drought: Irrigation for agriculture accounts for roughly 70 percent of the world's fresh-water consumption (and is even higher in agriculture-intensive regions).

Moreover, gene-splicing techniques increasingly are being used to program common crop plants such as rice, barley, corn and tobacco to synthesize high-value-added pharmaceuticals. The plants are harvested and the drug is then extracted and purified. Future research may well lead to important products, or even life-saving cures, but ag-biotech now is completely off-limits in Santa Cruz and three other California counties that have already adopted bans. Local ordinances could have a "chilling effect" on the state's agricultural research, according to David C. Nunenkamp, deputy secretary of the California Department of Food and Agriculture.

Activists have been relentless in promoting the Big Lie about gene-splicing -- namely, that it is unproven, untested and unregulated. After more than 20 years, none of the hypothetical concerns about safety has been substantiated. Crops made with gene-splicing techniques are currently grown by 8.5 million farmers in 21 countries on more than 100 million acres annually. California farmers currently plant almost a million acres of gene-spliced crops annually, primarily corn and cotton.

Americans have consumed more than a trillion servings of foods that contain gene-spliced ingredients. Throughout all this experience, there is not a single documented case of injury to a person or disruption of an ecosystem. Scientists are virtually unanimous that gene-splicing techniques are essentially a refinement of earlier ones, and that gene transfer or modification by molecular techniques does not, per se, confer risk. Like robotics, fiber optics and supercomputers, gene-splicing is no more than a widely applicable tool -- a better, more precise and predictable tool than its predecessors.

Arbitrary and illogical ordinances raise other issues. All citizens should be concerned about the implications of subjecting safe, legitimate commercial products -- in this case, plants crafted with a proven, superior technology -- to surveillance, confiscation and destruction by local officials. This is the tyranny of the majority over the rights of minorities.

Flawed regulation -- especially when it is as nonsensical and counterproductive as Santa Cruz County's anti-biotech measure -- makes a mockery of government and diminishes us all. Letting ideology and misguided activism trample science and common sense is not the route to sound public policy.

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