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/THE FIRST WORD

Not Science, But Necessary

A

meeting about agbiotech food safety issues, sponsored by the American Institute of Wine and Food and held recently in New York, once again made clear the need for members of the biotechnology community to participate in public policy dialogues and educational forums about biotechnology products and issues.

John Sorenson, general manager of the Vegetable Division of Asgrow Seed Company (Kalamazoo, MI) was biotechnology's representative, and he articulately presented the case for biotechnology as an agent, rather than an enemy, of sustainable agriculture. He used as an example his company's development of the humble yet disease-resistant crookneck yellow squash, which has been genetically engineered to have resistance to up to four viruses: watermelon mosaic virus, zucchini yellow mosaic virus, cucumber mosaic virus, and papaya ringspot virus.

Squash, members of the cucurbit family, are easy prey for these and other viral and bacterial infections, and squash farmers, knowing this, often plant two acres of squash for every one they intend to harvest to compensate for crops lost to disease. Disease-resistant transgenic squash should make it possible to grow the same amount of squash on smaller tracts of land—which should mean half again as much fertilizer, chemical sprays, tractor diesel fuel, plastic mulch acreage, and so on. Asgrow expects their squash to be second through the Food and Drug Administration (Bethesda, MD) approval pipeline, sometime after Calgene's (Davis, CA) Flavr Savr tomato.

In describing developments leading up to the transgenic plants, Sorenson laid out the basic techniques of genetic transformation, how they differ from conventional plant breeding methods, how health-safety and environmental issues have been addressed, and what questions about these issues still remain. He managed, at the very least, to plant a few seeds of biotechnological possibility in the minds of those present, who were, by and large, leaning more in the direction of Jeremy Rifkin than toward the Biotechnology Industry Organization (Washington, D.C.).

At the end of the meeting, however, a woman got up to say, or rather, to complain, that whenever someone from the scientific community came to talk to them about the safety of biotechnology products, they always began with the disclaimer that biotechnology involves many complex social issues, none of which they were prepared to address.

Her point was a good one. The products of biotechnology, or the new biotechnology, as some like to call it, are destined to become part of our social fabric, and in some cases to alter it substantially. And who better to talk about and put into context the changes that biotechnology may bring than the people who are developing the underlying science?

People who call themselves opponents of biotechnology and raise the risk flag are often not so opposed to the technologies themselves as they are to the social, industrial, and political systems that may be created around them. Their concerns are not trivial. And as Jesse Ausubel of Rockefeller University (New York, NY) has pointed out, public opposition to new technologies has not hindered—but in fact has helped stimulate—their development, because they force the makers of new products and services to adapt to the buying public's needs.

The blessing and the bane of biotechnology is that it has likely come under closer scrutiny—prior to the introduction of its products—than any technology that has gone before it. Certainly if the automobile had received similar attention, our oil-driven culture might have turned out differently. And biotechnologists have a role to play in deciding what comes of their hard work.

It may not be science, but it certainly is necessary. And in the right hands, very fruitful.

—SUSAN HASSLER