Genetically Engineered Vegetables: Are They Worth It?

SYRACUSE, N.Y. — Are genetically engineered vegetables environmentally friendly or ecologically threatening? Future foods or frankenfoods? The key to preventing starvation in Third World countries? Good business? Stupid science? Sustainable? Unsustainable?

These and other questions were addressed in a four-hour forum held Feb. 7 during the New York State (NYS) Vegetable Growers Association annual conference.

The event, which organizers believe was the first to address the GMO (genetically modified organism) issue in a grower setting, was attended by more than 100 growers, processors, and agricultural scientists.

The six presenters at the Becker 2000 Forum offered multiple perspectives on the topic: "Genetically Engineered Vegetables: Are They Worth It?" The six included two genetic plant breeders from Cornell University, a seed company representative for the controversial Bt sweet corn, a vegetable processor who has decided to drop Bt corn from its 2000 line, a consumer advocate, and a crop production researcher concerned about trade policies.

"The goal of the forum was to educate growers about the potential risk and benefits of genetically engineered crops in their planting and marketing schemes, help increase their understanding of the basic science and technologies involved, and increase their ability to answer questions from concerned consumers," said Anu Rangarajan, a statewide specialist in fresh market vegetable production, and Cornell University professor of vegetable science, who organized and moderated the forum.

U.S. farmers have been placed squarely in the middle of the debate between seed dealers, chemical companies, American trade policy, and foreign and domestic consumers on the GMO issue. A recent survey conducted by the American Corn Growers Association indicated a significant reduction in the acreages of Roundup Ready corn, Bt corn, and Roundup Ready soybeans being planned for the 2000 season, largely because of consumer concerns. Currently, there are only two commercially available genetically engineered vegetables: Bt sweet corn and a virus resistant squash.

Steve Kresovich, who is a Cornell plant breeder and director of the Institute of Genomic Diversity, talked about scientific and environmental considerations. "His explanation of conventional breeding versus genetic engineering, was most valuable to me," said one grower. "I didn't realize how many intentional and unintentional consequences they were in both types of breeding."

Dennis Gonsalves, plant pathologist at Cornell's New York State Agricultural Experiment Station, in Geneva, N.Y., who is responsible for the commercialization of two virus resistant crops in the U.S. — papaya and squash — outlined the 15-year project that led to the revitalization of the papaya industry in Hawaii. "Through the introduction of genetically engineered papaya that is resistant to the papaya ringspot virus, farmers whose livelihoods were ruined have now been able to replant," said Gonsalves. "If you ask them if this is a successful technology, they and their families will say 'yes'."

Michael Hansen, of the Consumers Union, was an advocate for caution and incredulity on the part of the consumer. "In the U.S., at least, there is virtually no regulation of genetically engineered crops on the part of the FDA, the EPA and the USDA," said Hansen. According to Hansen, health risks included transfer of toxins, allergens, antibiotic resistance, and a change in nutrient levels — many of which are unintentional and untested risks. He advocated mandatory labeling so consumers can decide for themselves which products to buy.

Tom Facer, of Agrilink Foods, outlined the processor's decision to drop Bt sweet corn from their product line in 2000. "It's not that the technology doesn't work,"he said, citing as an example the state of Georgia,

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Learning To Market New York's Summer Tree Fruits

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High-density orchard systems are of particular interest to growers whose key objective is earlier cropping and higher early yields. Terence Robinson, Cornell professor of horticultural sciences who specializes in training systems for fruit trees at the Experiment Station in Geneva, addressed whether or not orchard systems are adaptable to particular crops and, if so, the labor efficiencies and pest control that can be gained. Robinson and colleagues are trying out six new sweet cherry experiments at Geneva designed to keep trees small and get them to bear earlier. Rain-induced fruit cracking and bird damage could be drastically reduced by covering small trees with frames, nets and retractable plastic covers.

In talking about stone fruit diversification, Andersen said there is a keen interest in high-density cherries among New York fruit growers because — like prune plums — fresh sweet cherries are particularly healthful. He described "nutriceutical" as a term that will dictate marketing the medical benefits of plants, especially fruits and vegetables.

Peaches suffer from declining per capita consumption because they arrive on New York tables from distant states too green to ripen with really good taste. "Locally grown fresh peaches can be picked riper and will achieve full taste," said Andersen.

Processed peaches have also declined in consumption, but New York-grown processing peaches are gaining attention from Canadian and New York-based processors because of new varieties being bred for Eastern North American climates. High-density peach orchards can produce fruit earlier and with higher yields. Locally processed means reduced transportation costs — an important factor to consider when raw fruit represents only 20 percent of the final cost.

More Research Is Needed

Bittner, chairman of the Northeast Stone Fruit Sponsors, spoke for many of those present, noting much work needs to be done to support stone fruit research.

"The Northeast Stone Fruit Sponsors must find a way to fund the research that needs to be done to make the growing of stone fruits in the Northeast a profitable option for growers. Some options include membership dues, grants, an industry checkoff, and the licensing of plant patents and trademarks that returns funds to research programs. Once funds are collected, a program similar to the Apple Research and Development Board would be set up to select and fund grower-identified research projects."