

## Genetic Foods Debate At Chester Extension Meet

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sources.

Backman stated that Penn State was a neutral party in the biotechnology discussion as the university is a neutral forum for testing genetically-engineered organisms.

"That's why we're in this game. It's important not only as a tool to answering problems, but we're aware of citizens' concerns and the environment," said Backman.

Medley emphasized that he was giving his perspective as bioengineering as a tool.

There are a number of different issues facing agriculture, said Medley. Feeding the world, the aging population, dealing with environmental stewardship issues, and the economic viability of agriculture are challenges today which biotechnology could help answer.

"Biotechnology tends to be safer and lower in cost than traditional solutions," said Medley.

Freese raised several questions about the safety and economic viability of genetic engineering. Freese is concerned about genetically-engineered foods. "Is it really a precise process?" asked Freese, citing use of a gene gun to insert DNA into cells.

"Do genetic engineers understand what's going on between DNA and the cells, or the plant's defense mechanisms to foreign DNA, or where the genes end up in the core chromosome and how many copies are made?" he asked.

A gene in the cell disrupts existing genes, possibly creating allergens and toxins. Freese pointed out the use of the "Starlink" strain of corn which was not approved for food use but

ended up in foods intended for human consumption.

Freese also questioned whether there has been thorough testing on genetic organisms by the FDA and EPA, and wondered whether genetically altered strains of crops are actually economically viable, saying that herbicide-resistant crops may have a yield drag.

Genetically-altered crops may also facilitate insects' developed resistance to biotech crops, said Freese. He also pointed out that the problem may not be so much in production of food to feed the world, but in distribution.

Medley outlined his view of the two greatest benefits to bioengineering. "It's a tool used to solve myriads of issues, an application of science," said Medley. He stood by the stringent testing and safety standards passed by genetically-altered foods.

"If you look at the products on the market, they have been tested; the tomatoes had five years of testing before they were commercialized."

One problem facing America is the continued growth of the aging population, he said, a problem which could be addressed with the connection between diet and health. Bioengineering is now a tool to enhance nutrients available in soy to prevent diseases.

Bioengineering also addresses agriculture production problems. "One-half of the world's population is in two countries, India and China," said Medley. Genetically-altered crops would improve developing countries' production. Since these countries do not have the technology of more developed countries, genetically-altered crops would make the playing field more "scale neutral."



At left, Extension Director Trudy Dougherty and Tim Fritz, farm management extension agent, right, honor Laurie Szoke for 15 years of service as a 4-H coordinator for Chester County.

"It can allow increase yield in small plots of and without equipment and technology without changing production practices."

Again, said Medley, bioengineering is "not a panacea to be used by itself, but a tool."

Freese followed Medley's statements by stating, "Biotechnology follows a pattern towards ever-new technological fixes." Freese cited examples of the demise of family farming in last 50 years. Genetic engineering, said Freese, is the wrong way to improve agriculture, and questioned its role in sustainable agriculture.

Freese also pointed out implications of using genetically-altered crops in the third world, such as the "Terminator" variety of seed, where the crop grows normally but the subsequent seeds are sterile, which keeps producers coming back to the seed supply company year after year.

Backman noted that there are tradeoffs for genetic engineering. The bottom line at the college of agricultural sciences is balancing the best interests of agriculture sustainability, environment, and community.

The Terminator strain of seeds, said Backman, was developed as a beneficial tool to prevent outcropping and guard against genes spreading between crops.

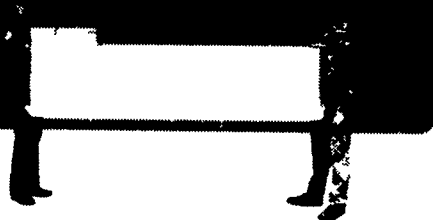
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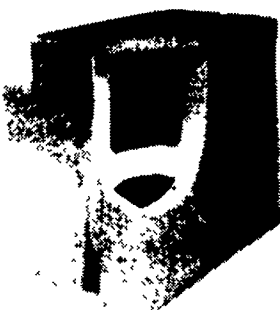
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