Selling Biotechnology

An Archival Exploration of the GM Controversy

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Gene Editing in 2021

George Eustice, Secretary of State for Environment, Food and Rural Affairs: “Gene editing has the ability to harness the genetic resources that mother nature has provided, in order to tackle the challenges of our age. This includes breeding crops that perform better, reducing costs to farmers and impacts on the environment, and helping us all adapt to the challenges of climate change.”

Huw Jones, Professor of Translational Genomics for Plant Breeding at Aberystwyth University: “We need food and agriculture, but we also need it to stop harming the planet. A combination of better land management and better crops can do that. In its simplest form, gene editing is merely a speedier way to find the genetic variation made by natural processes.”

Content

1. BUILDING A NARRATIVE

2. THE CONTINUITY NARRATIVE

3. EXPLAINING ITS FAILURE

4. COMPLICATING THE NARRATIVE

Image from Merritt papers, Science Museum Library and Archives [Wroughton].
Building a Narrative

This strawberry tastes just like a strawberry.

 Farmers here we all report trees and vegetables don't seem to "grow until they are mature", instead they have a higher and early harvesting time in stores.

 Plant breeders, however, offer the potential to produce crops that are only new because they are also healthier.

 Monsanto is a leading biotechnology company. Our modified seeds are a new development of traditional seed breeding, which has been employed for centuries.

 Each is intentionally treated for safety and nutrition. The food they produce have been approved by both USDA (US Department of Agriculture) and other regulatory agencies including those in the UK, Denmark, Switzerland, the Netherlands, India and Korea.

 MONSANTO

 In 2002, we developed transgenic tomatoes which are now available in many countries.

 Farmers discovered biotechnology 10,000 years ago: It's getting better with age.

 Many of the modern tools and techniques we use today to create new foods are not new at all; however, improved, more precise versions of methods employed throughout history. Even researchers using the latest biotechnology methods, which allow the transfer of a gene from one organism to another, basically are working with the same scientific processes people have used for centuries to increase crop productivity, improve the food supply and produce better foods.

 Our long, gradual learning process about foods and food production has spanned several centuries and continues today.

 Hundreds of thousands of years ago, people wandered the earth, collecting and eating only what they found growing in nature. By about 8000 B.C., however, the first farmers decided to stay in one place and grow certain plants in crops — creating agriculture and civilization, in that order.

 Since that time, people have continued to select, sow and harvest seeds to produce...
“They did not know it, but they were practicing a rudimentary form of genetic engineering – a fundamental process used in biotechnology.”

“Mendel’s laws of heredity were widely used to assist the breeding programmes, pointing the way to hybridization.”

A “new development of traditional cross breeding which has been employed for centuries.”

The Corporate Narrative

Ancient agriculture  Mendelian genetics  Recombinant DNA technology

Nothing much happened  Nothing much happened
Geoff Spriegel, Research Director for Sainsburys: “In this scenario, technical development has continued apace, almost without reference, or even a means of reference to the consumer. This leads to difficulties when we [in the industry] try to explain new technology to consumers as enhancements to previous production techniques, when knowledge of the techniques which are being replaced is very limited.”
Complicating the Narrative

- complex reception of Mendelian genetics
- privatization of plant breeding and seed distribution

1900-

- application of X-rays, chemicals and hormones to plant breeding
- large-scale hybridization in certain contexts

1950

- Plant Breeders’ Rights, Plant Varieties and Seeds Act

2000-

- cell fusion as an alternative form of genetic biotechnology
- transfer of genetic biotechnology patents and expertise from university to private sector
Concluding Thoughts

• Contemporary appeals to the similarities between gene editing and natural variation are a modern effort to build a sense of continuity between past and future.

• This strategy was tried during the 1980s and 1990s with appeals to the long history of plant breeding.

• Its failure can be explained through its inherent contradictions and the sheer amount expected of it.

• OR perhaps this was a doomed enterprise – what about public mistrust of corporations and government?

• What does it the failure of GM mean for future forms of agricultural biotechnology

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