



Food Biotechnology Timeline

The following timeline shows the progression of food biotechnology from the earliest domestication of crops and animals to modern, efficient methods of selecting and producing plants and animals with the most desirable qualities. These dates are benchmarks of scientific and regulatory breakthroughs and highlight the important role of food biotechnology, a modern way of improving crops, food, and animals.



8500–5500 B.C. People begin to settle in one place and raise plants and animals; the best of their crop is saved to use as seed the next year.

1800 B.C. The Babylonians improve the quality of date palms by pollinating female trees with pollen from male trees with desirable characteristics.

1863 From observing pea plants in a garden, renowned scientist Mendel concludes that certain “unseen particles” (later described as genes) pass traits from parents to offspring in a predictable way—the laws of heredity begin to be understood.

1875 The first higher-yield, hardier wheat-rye hybrid grain is created.



1953 The structure of DNA is described by Watson and Crick.

1973 Scientists Cohen and Boyer successfully transfer genetic material from one organism to another.



1961 USDA registers *Bacillus thuringiensis* (Bt) as the first biopesticide.

1986 EPA approves commercial growing of the first genetically engineered crop—tobacco plants resistant to tobacco mosaic virus.

1992 FDA issues a policy stating that foods from biotech plants would be regulated in the same manner as other foods. Pre-market consultation with FDA is encouraged, consistent with industry practice.



1993 Recombinant bovine somatotropin (rbST)—a naturally occurring protein that is reproduced using biotechnology and used in cows to increase milk production—is approved in the U.S.



1994 The first whole food produced using biotechnology—the FlavrSavr® tomato—enters the marketplace after FDA issues its advisory opinion on safety. Virus resistant squash is also planted.

1998 Virus resistant papaya, developed through biotechnology to save the crop from devastation, is planted in Hawaii. Insect-protected sweet corn is also planted.



1996 Biotech varieties of soybean, cotton, corn, canola, tomato, and potato seed are planted on 4.5 million acres in Argentina, Australia, Canada, China, Mexico, and the U.S.

1999 The Enviropig™ is genetically engineered in Canada to produce an enzyme in its saliva that would allow it to get more phosphorus from its feed. This would reduce phosphorus runoff into waterways.



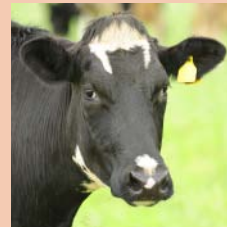
1996 Dolly the sheep is the first animal clone to be born.



2008 FDA releases its risk assessment on animal clones, concluding that food from clones is as safe as other food.



2008 Sugar beets produced with biotechnology are commercialized.



2012 Researchers report that the first “hypoallergenic” cow, Daisy, has been genetically engineered to remove a protein that can trigger whey allergy in humans.

2011 “High-oleic” soybean varieties higher in heart-healthy monounsaturated fats are available in the U.S.

2012 Biotech crops are planted on 420.8 million acres by 17.3 million farmers in 28 countries. More than 90% of farmers planting biotech seed are small, resource-poor farmers in developing countries.



2011 Additional whole foods enhanced by biotechnology are submitted for government review, including non-browning apples, and low-acrylamide potatoes.

