

2017

# A Chronicle of Economic Botany

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## Recommended Citation

Smith, James P. Jr, "A Chronicle of Economic Botany" (2017). *Botanical Studies*. 9.  
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# **A CHRONICLE OF ECONOMIC BOTANY**

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**26<sup>th</sup> Edition • 15 February 2017**

The purpose of this compilation is to identify the dates of various critical discoveries, events, voyages, inventions, publications, etc. that relate to economically important plants. I begin by setting the stage, so to speak, with cosmological considerations -- the formation of the universe, solar system, and our planet. The next several entries relate to the appearance of life on the earth, beginning about 4 billion years ago. The evolution of our immediate ancestors began about 4 million years ago, with the first true human beings appearing in Africa approximately 1.5 million years ago. Our use of plants begins at about that point, with such discoveries as fire-making, the building of shelters, and the cosmetic use of dyes. About 150,000 years ago we began incorporating flowers into ritual burials; there is some evidence that 60,000 years ago we started using various herbs because of their medicinal properties. Farming of cultivated plants began about 16,000 years ago; the domestication of various plants and animals approximately 10,000 years ago. Most of our important crop plants were domesticated over the next few thousand years. Only a handful of plants have been domesticated in the last two millennia.

In about A. D. 800, Irish voyagers reached Iceland, beginning an age of exploration that would last for a thousand years. Among the many notable accomplishments of Marco Polo, Christopher Columbus, James Cook, and others was a dramatic increase in our knowledge of the natural history of our planet and the exchange of plants and plant products around the

globe. As the sixteenth century came to a close, newly developed instruments and techniques in the fields of botany and chemistry formed the basis of our modern understanding of the plant kingdom. This was followed by the appearance of a series of inventions designed to extract various products from plants and to process them.

The nineteenth century saw the refinement of chemical extraction procedures that allowed us to isolate and purify a number of economically important materials, especially certain alkaloids with medicinal and psychoactive properties.

In the twentieth century, we have witnessed the growth of giant industries based upon the supplying of a long list of plant products to the consumer. It was a little over a hundred years ago that the field of genetics was founded with the investigations of Strasburger and von Beneden into the mechanisms of mitosis and meiosis. For the last several decades, we have developed the techniques needed to control the genetic heritage of many of our most important crops and to create entirely new ones in our laboratories. Our studies have also shown how dangerous plant products such as alcohol, tobacco, and the opiates can be; how destructive to the natural environment our conversion of land for the growing of crops can be; and how we have become increasingly dependent upon a relatively short list of genetically-impoverished plants.

**DATE                      EVENT, DISCOVERY, PUBLICATION, ETC.**

**Years Ago:**

13,800,000,000	The "Primordial Explosion" or "The Big Bang"
12,500,000,000	Galaxies form
6,000,000,000	Sun forms
5,000,000,000	Solar system forms
4,500,000,000	Earth forms
4,000,000,000	Beginning of life on Earth (bluegreen algae)
3,700,000,000	Oldest microbial life (stromatolites in Greenland)
1,600,000,000	Multicellular plant life evolves
425,000,000	Terrestrial plant life evolves
395,000,000	Insects evolve
380,000,000	Ferns evolve
350,000,000	Gymnosperms (cone-bearing plants) evolve
216,000,000	Mammals evolve
200,000,000	Continental drift begins
123,000,000	Flowering plants evolve
69,000,000	Primates evolve
67,000,000	Extinction of the dinosaurs
60,000,000	Grasses evolve (oldest fossils)
14,000,000	Ramapithecus, oldest human-like primate, evolves in Africa and India
11,000,000	Grazing animals evolve
7,000,000	Sahelanthropus tchadensis ("Toumai man"), oldest hominid species, evolves in Africa
4,400,000	Ardipithecus ramidus ("ardi") evolves in Africa
4,000,000	Australopithecus afarensis ("Lucy") evolves in Africa
3,700,000	Modern horses evolve
3,400,000	Early human diet now involves consuming grasses and sedges of the savannah
3,200,000	Large ice sheets build up over northern continents
2,400,000	Paleolithic (Old Stone Age) begins
2,400,000	Hominids in Africa make first stone tools
2,000,000	Australopithecus boisei and A. robustus evolve
1,900,000	Homo habilis ("Handy Man") evolves in Africa; first hand axes
1,800,000	First stone dwellings (Tanzania)
1,760,000	More advanced stone tools in use in present day Kenya
1,600,000	Apes and prehumans use red ochre as a cosmetic
1,500,000	Homo erectus, first true human, emerges in Africa
1,400,000	Discovery of fire (Kenya)
1,000,000	Earliest evidence of campfires for cooking and socializing
1,000,000	Homo erectus migrates through the Old World tropics
900,000	First stone tool use in Europe (southeastern Spain)
800,000	Homo erectus populates temperate zones; makes shelters from branches
700,000	Humans in northern Europe, based on 32 black flint artifacts
420,000	First huts (France); first fishermen (France)
200,000	Homo sapiens ("Thinking Man") evolves
200,000	Artistic hand axes appear
150,000	Neanderthal Man emerges in Paleolithic Europe; ritual burials there and in Far East
127,000	Last glaciation and associated warming period
79,000	Oil-burning lamps made of stone in use
72,000	Early humans use fire to heat rocks during tool making

- 60,000 Earliest evidence of herbal medicine
- 50,000 Humans first populate Australia
- 45,000 Music and oral literature developed (Asia)
- 40,800 Oldest cave paintings (El Castillo, Spain)
- 35,000 Oldest written records
- 35,000 Asian hunters cross Bering Strait
- 35,000 Cro-Magnons appear; Neanderthals decline
- 35,000 Flute, first known musical instrument, discovered in a cave in Germany
- 30,000 Earliest use of flour from tubers (perhaps potato) in Italy, Russia, and Czech Rep.
- 30,000 Human settlements in Mexico
- 27,000 Cave art (France); ceramics and sculpture (Czechoslovakia)
- 27,000 First humans colonize Japan
- 20,000 Barley milled, the oldest evidence of food processing (Israel)
- 21,000 Sewing needle invented
- 18,000 Bow and arrow invented (Europe)
- 18,000 Laurentide and Scandinavian ice sheets attain their greatest extent
- 16,000 Mesolithic begins
- 16,000 Farming of cultivated plants begins
- 15,000 Ropes invented (France)
- 13,000 Grinding stones for grain developed (Egypt)
- 11,000 Pottery developed (Japan)
- 11,000 Bottle gourd domesticated (Africa ?)
- 10,000 Dog domesticated (Iraq/Palestine)
- 10,000 World population reaches 4,000,000
  
- 9000 Neolithic (New Stone Age) begins
- 9000 Emmer wheat and barley domesticated (Palestine)
- 9000 Sheep domesticated (Iran/Afghanistan)
  
- 8500 First town built (Jericho, north of the Dead Sea)
- 8500 Lima bean domesticated (South America)
- 8000 Flax, the oldest textile fiber, first used
- 8000 Last Ice Age ends
- 8000 Bering Land Bridge severed
- 8000 Dog domesticated (North America)
- 8000 Goat domesticated (Iran and Iraq)
- 8000 Potato domesticated (Peru)
- 8000 Pumpkin domesticated (Mesoamerica)
- 8000 Sweet potato domesticated (Peru)
- 8000 Common bean domesticated (South America)
- 8000 Ulluco domesticated (South America)
- 8000 World population reaches 5 million
  
- 7500 Rice domesticated (Indochina)
- 7500 Water buffalo domesticated (Indochina)
- 7500 Pig domesticated (E. Asia)
- 7500 Rye domesticated (Syria)
- 7000 Agriculture begins to replace hunting-gathering
- 7000 Village life in the Near East
- 7000 Einkorn wheat domesticated (Syria)
- 7000 Durum wheat domesticated (Anatolia)
- 7000 Yams domesticated (Indonesia)
- 7000 Banana domesticated (Indonesia)
- 7000 Coconut domesticated (Indonesia)
- 7000 Cattle domesticated (Anatolia)
- 7000 First metalworking (Anatolia)
- 7000 Sugar cane domesticated (New Guinea)

- 6800 Lentils in cultivation (Israel)
- 6500 Beans and gourds domesticated (Mexico)
- 6500 Earliest domestication of plants in Andes
- 6500 Flax domesticated (Silesia)
- 6500 Weaving and printed textiles developed (Anatolia)
- 6300 Quinoa domesticated (South America)
- 6000 Copper Age begins
- 6000 Bread wheat domesticated (Southwest Asia)
- 6000 Citrus fruits domesticated (Indochina)
- 6000 Lentil domesticated (Southwest Asia)
- 6000 Squashes domesticated (Mexico)
- 6000 Brewing of malted beer begins
- 6000 Bulrush millet domesticated (Algeria)
- 6000 Finger millet domesticated (Ethiopia)
  
- 5500 Maize domesticated (Mesoamerica)
- 5500 Foxtail millet domesticated (Central China)
- 5500 Peach domesticated (Central China)
- 5000 Maize a major crop in Tehuacan Valley of Mexico
- 5000 Avocado domesticated (Mexico)
- 5000 Chicken domesticated (Southern Asia)
- 5000 Llama and alpaca domesticated (Peru)
- 5000 Horse domesticated (Kazakhstan)
  
- 4500 Date palm domesticated (India)
- 4500 Sorghum domesticated (Sudan)
- 4500 Hunting/gathering and fishing in Japan
- 4300 Cotton domesticated (Mexico)
- 4300 Tepary bean domesticated (Mexico)
- 4004 Year of Creation in the Christian calendar
- 4000 Bronze Age begins
- 4000 Grape domesticated (Turkestan); wine making begins
- 4000 Oil palm domesticated (Sudan)
- 4000 Silkworm domesticated (China)
  
- 3760 Year of Creation in the Hebrew calendar
- 3641 Year of Creation in the Mayan calendar (10 February)
- 3500 Wheel invented (Sumeria)
- 3500 First writing
- 3500 Olive domesticated (Crete)
- 3500 Zebu cattle domesticated (Thailand)
- 3300 Jack bean domesticated (South America)
- 3300 Coca domesticated (South America)
- 3000 Cities spread into Nile Valley
- 3000 Plow invented (Near East)
- 3000 Accurate stellar calendar invented (Egypt)
- 3000 Cotton domesticated (India)
- 3000 Peanut domesticated (Peru)
- 3000 Donkey domesticated (Palestine)
- 3000 Two-humped camel domesticated (Iran)
- 3000 Elephant domesticated (India)
- 3000 Mule domesticated (Palestine)
- 3000 Rice under cultivation in China
  
- 2800 Hemp rope invented (China)
- 2800 Major flood covers much of Mesopotamia
- 2800 Sickle invented (Sumeria)

- 2800 Emperor Shen Nung publishes "Pen Tsao," the first herbal
- 2700 Tea first used in China
- 2600 Pyramids built in Egypt; cities in the Indus Valley
- 2600 Egyptian bakers develop more than 50 varieties of bread
- 2600 Egyptian voyage to Byblos to gather cedar
- 2500 Cat domesticated (Egypt)
- 2500 Yak domesticated (Tibet)
- 2500 Egyptians use papyrus as writing material
- 2500 Pharaoh Sahure sends fleet to Punt for myrrh
- 2500 African yam domesticated (West Africa)
- 2000 Alfalfa domesticated (Iran)
- 2000 Tea and banana cultivated in India
- 2000 Apples cultivated in Indus Valley
- 2000 Figs cultivated in Arabia
- 2000 Guinea pig domesticated (Peru)
- 2000 Watermelon cultivated (Africa)
- 2000 World population reaches 50 million
  
- 1750 Code of Hammurabi regulates beer
- 1700 Rye cultivated in eastern Europe
- 1680 Egyptians develop leavened bread
- 1500 Soybean domesticated (Manchuria)
- 1500 Bronze sickles and scythes used in Europe
- 1500 African rice domesticated (West Africa)
- 1495 Queen Hatshepsut sends team to Land of Punt to collect spices
- 1450 Mesopotamians use seed drill
- 1400 First alphabet completed
- 1400 Glass invented
- 1400 Smelting and forging of iron (Anatolia)
- 1300 Manioc domesticated (South America)
- 1300 Sunflower domesticated (North America)
- 1200 Iron Age begins
- 1000 Oats domesticated (Central Europe)
- 1000 Phoenicians terrace hillsides to prevent erosion
- 1000 Maize with large ears domesticated (Mexico)
- 1000 Millets domesticated (Korea)
  
- 800 Oldest New World pyramids
- 800 Widespread flood appears to destroy much of Mesopotamia
- 700 Founding of Rome
- 700 Hoe invented (North America)
- 600 Rise of science in Greece, China, etc.
- 500 Tea domesticated (Tibet)
- 500 Cloves domesticated (Indonesia)
- 500 Selection and breeding of maize in South America
- 500 Currant domesticated
- 500 Reindeer domesticated (Central Asia)
- 500 Bronze sickles and scythes in use in Europe
- 484 Herodotus sees cotton in India
- 400 Tobacco domesticated (South America)
- 400 Hippocrates compiles list of uses for herbs and spices
- 399 Socrates commits suicide, presumably using poison hemlock (*Conium maculatum*)
- 350 Tobacco first used in North America
- 300 Turkey domesticated (Mexico)
- 300 Greek farmers rotate crops to main soil fertility
- 200 Pearl millet cultivated in sub-Saharan Africa
- 250 Cacao cultivated by Maya in Belize

- 100 Vertical and horizontal waterwheels in use
- 100 Chinese use dried chrysanthemum flowers as first insecticide
- 85 Seed-drill plough invented (China)
- 50 Herodotus publishes "Histories" of his Mediterranean journeys
- 40 Rotary winnowing machine invented (China)

### **Beginning of the Current or Christian Era:**

- 65 Year's supply of cinnamon used at funeral of Poppaea Sabina, wife of Emperor Nero
- 70 Pliny the Elder publishes 37-volume "Natural History"
- 78 Dioscorides publishes "De Materia Medica"
  
- 100 Sieva bean domesticated (Mexico)
- 105 T'sai Lun invents first true paper from paper mulberry, hemp, and scrap fibers
- 190 Galen extracts juices from plants for medicinal uses
  
- 200 Potato domesticated (Peru and Bolivia)
- 290 Moche priest interred with gold and silver ornaments shaped like the peanut (Peru)
  
- 301 Theophrastus describes caprification of figs
- 327 Alexander the Great finds bananas growing in Indus Valley
- 350 First written Greek reference to wheat
- 350 First written account of tea processing
  
- 410 Alaric the Visigoth demands 3000 lbs. of pepper to ransom Rome
- 432 Earliest recorded use of tobacco (Mexico)
- 450 Whisky developed (attributed to St. Patrick)
  
- 500 Sweet potato domesticated (Polynesia)
- 590 Epidemic of ergot poisoning hits France
- 593 Tea introduced into Japan
  
- 600 Mayans establish earliest known cacao plantations in northern South America
- 620 Greeks pass law calling for death penalty for stealing fruits or molesting fruit trees
- 644 Windmill for grinding grain invented (Persia)
  
- 700 Mayan civilization reaches its zenith
- 700 Achira (*Canna edulis*) domesticated (Mexico)
- 746 Hops first added to beer (Bavaria)
- 748 First printed newspaper (Peking)
- 750 Polynesians begin long range ocean voyages
- 780 Lu Yu publishes "First Tea Classic"
  
- 800 Irish voyagers reach Iceland
- 812 Emperor Charlemagne orders imperial farms to grow flax and various spices
- 850 First reference to use of coffee (Kaffe Province of Ethiopia)
- 857 Ergot poisoning reported in Germany
  
- 900 First shipment of spices from East Indies arrives in England
- 985 Bjarni Herjulfsson lands in Nova Scotia or Newfoundland
- 941 Ergot fungus kills 40,000 in France
  
- 1000 Iroquois form village communities and cultivate maize and beans
- 1000 Colonization of Oceania complete
- 1002 Leif Eriksson lands in New World
- 1096 First Crusade begins
- 1099 Crusaders plant sugar cane in Holy Land

- 1148 Returning Crusaders bring sugar to Europe
- 1150 First European paper factory opens (Spain)
- 1191 Tea introduced in Japan from China
  
- 1212 Tofu introduced from China to Japan
- 1227 Oldest extant botanical garden founded (Vatican City)
- 1250 Roger Bacon invents magnifying glass
- 1253 Linen first made in England
- 1271 Marco Polo travels through Asia [to 1295]
  
- 1300 Arnau de Villanova discovers distillation of wine to brandy
- 1328 First sawmill constructed
- 1347 "Black Death" kills one-third of Europe
- 1350 Shogun of Japan prohibits drinking of tea
- 1391 First paper mill opens (Nuremberg, Germany)
  
- 1400 Coffee domesticated (Arabia)
- 1400 Sir John Maundiville publishes accounts of his travels and the plants he encountered
- 1420 Bottom-fermentation of beer invented in Germany
- 1470 "The Age of Herbals" begins [to 1670]
- 1476 Oca domesticated (South America)
- 1492 Columbus lands in New World, believing it to be India
- 1492 Jews forbidden to serve as spice dealers
- 1493 Columbus introduces European grape and sugar cane into New World
- 1493 Second voyage of Columbus to New World [to 1496]
- 1493 Columbus founds Isabella, the first European settlement in the New World
- 1493 Columbus observes Indians using tobacco as medicine
- 1497 Vasco de Gama sails around Cape of Good Hope (Africa)
- 1497 Romano Pane describes tobacco and its use by Indians
- 1498 Third voyage of Columbus [to 1500]
- 1498 John Cabot explores North America
- 1499 Amerigo Vespucci makes first written observation of coca use
  
- 1500 World population reaches 500 million
- 1502 Fourth voyage of Columbus to New World [to 1504]
- 1503 Refinement process for raw sugar developed
- 1509 Sugar cane first harvested in the New World (Hispaniola)
- 1510 First Black slaves arrive in the New World (Cuba)
- 1510 Spanish introduce sunflower to Europe as an oil crop
- 1511 Portuguese capture Malacca, center of East Indies spice trade
- 1511 Coffee houses in Mecca closed
- 1512 Portuguese discover nutmeg trees in Moluccas
- 1513 Ptolemy's "Geography" recognizes two continents in New World
- 1513 Juan Ponce de Leon introduces orange and lemon trees in Florida
- 1514 Pineapple introduced into Europe
- 1516 Indigo introduced into Europe
- 1516 Maize first planted in China
- 1516 Spanish introduce banana into the New World
- 1517 Coffee introduced into England
- 1519 Hernán Cortes lands in Mexico
- 1519 Ferdinand Magellan sails from Spain in search of Spice Islands
- 1519 Hernan Cortes records use of cacao in the court of Emperor Montezuma
- 1520 Ferdinand Magellan circumnavigates globe [to 1524]
- 1520 Spanish bring wheat to New World
- 1520 Hernan Cortes introduces chocolate into Europe
- 1521 Tenochtitlán, capital of the Aztec Empire, falls to Cortes



- 1523 Sugar first grown in Cuba
- 1523 Anthony Fitzherbert publishes "Book of Husbandry," first English agricultural manual
- 1525 Paracelsus develops laudanum (opium dissolved in alcohol)
- 1525 Portuguese introduce chili peppers to India
- 1529 Sweet orange introduced into Europe
- 1530 Spinning wheel in general use in Europe
- 1532 Inka Empire falls to Francisco Pizarro
- 1532 Sugar cane first grown in Brazil
- 1534 First written description of tomato published (Italy)
- 1536 Gonzalo de Oviedo publishes "Historia General y Natural de Las Indias"
- 1540 Francisco de Orellano explores South America
- 1540 Francisco Basquez de Coronado explores American Southwest and Great Plains
- 1540 Benzoni describes cacao preparation
- 1545 Spanish introduce hemp into New World
- 1551 William Turner publishes "New Herball"
- 1556 Tobacco cultivation begins in Europe
- 1556 Spain's Council of the Indies prohibits plant exploration by foreigners
- 1556 André Thevet introduces tobacco seeds into Europe
- 1558 Portuguese introduce cassava into Africa
- 1561 Jean Nicot sends tobacco to Catherine de' Medici
- 1562 Witchcraft made capital offense in England
- 1564 John Hawkins introduces sweet potato into England
- 1564 Jesuit priests introduce European grape vine into California
- 1565 Oranges introduced into Florida
- 1565 John Hawkins introduces tobacco from Florida into England
- 1566 First European seed drill patented
- 1568 Alexander Nowell, Dean of St. Paul's Cathedral in London, invents bottled beer
- 1569 Gerhardus Mercator prepares first comprehensive world map
- 1569 Bernardino de Sahagun publishes "Historia General de las Cosas de la Nueva Espana"
- 1569 Pope Pius V declares that chocolate is a beverage and could be consumed during fasting
- 1575 Sir Francis Drake begins circumnavigation of globe [to 1580]
- 1579 Sir Francis Drake reaches East Indies by sailing around South America
- 1580 Prospero Alpino establishes that flowering plants have two sexes
- 1582 Ergot cited as means for quickening childbirth
- 1583 Andre Caesalpino publishes "De Plantis"
- 1585 First shipment of cacao beans from Vera Cruz, Mexico arrives in Seville
- 1587 Thousands die from ergot poisoning in German states
- 1587 Eggplant introduced into England (now seen as a tragic event!)
- 1589 Elbert de Veer invents hemp mill
- 1590 Hans & Zacharias Janssen invent compound microscope
- 1590 Tomato introduced into England
- 1595 Dutch establish colonies in East Indies
- 1596 Li Shih-Chen publishes 52-volume "Catalogue of Medicinal Herbs"
- 1597 John Gerard publishes "Herbal or General Historie of Plantes"
- 1597 Ergotism found to be caused by infected rye
  
- 1600 England's East India Company founded
- 1600 Spanish make rum from molasses (Barbados)
- 1600 Seeds and unroasted coffee beans smuggled out of the Arabian port of Mocha
- 1601 The word "coffee" first appears in an English account of William Parry's Persian travels
- 1602 Oat introduced into the U. S.
- 1602 Dutch East India Company founded
- 1604 King James I publishes (anonymously) "Counterblaste to Tobacco"
- 1605 King James I authorizes London's Worshipful Company of Gardeners
- 1610 Tea introduced to Europe by Dutch East India Company
- 1612 John Rolfe plants Caribbean tobacco at the Jamestown Colony in Virginia
- 1615 Coin-operated vending machines for dispensing tobacco leaves appear in English taverns

1615 Chocolate paste from the New World introduced into Europe  
 1616 Coffee introduced into Europe  
 1616 Dutch smuggle a coffee tree from Aden to Holland  
 1616 Schouter and Lemaire discover new route from Europe to Pacific, around Cape Horn  
 1618 Wheat cultivated in Virginia  
 1618 David Ramsay and Thomas Wildgoose invent ploughing machine  
 1619 First Black slaves arrive in Virginia  
 1619 Burgandy bans the growing of potatoes because they cause leprosy  
 1620 Pilgrims arrive in Plymouth, Massachusetts  
 1621 Potato planted in Germany for first time  
 1621 Potato introduced into North America  
 1621 European grapes planted on east coast of U. S.  
 1621 Dutch cut down three-quarters of clove trees in the Moluccas  
 1621 Jamestown colonists build first American grist mill to process wheat  
 1623 Dutch establish first commercial brewery  
 1623 Gaspard Bauhin publishes "Pinax," a compilation of plant names from herbals and other sources  
 1624 Pope Urban VIII threatens snuff users with excommunication  
 1625 Francis Bacon publishes "Of Gardens," in which he describes the ideal garden  
 1629 John Parkinson publishes "Paradisi in Sole Paradisus Terrestris"  
 1630 Lemonade invented  
 1630 Kikkoman soy sauce invented  
 1632 Jesuits introduce quinine powder into Spain and Rome  
 1633 Bananas first sold in London  
 1635 Jesuits introduce grapes into California  
 1635 Louis XIII founds Jardin des Plantes in Paris  
 1635 French restrict tobacco sales to physician's prescription  
 1636 Tulipmania strikes in the Netherlands  
 1636 Dutch seize Ceylon and impose cinnamon quotas  
 1640 John Parkinson publishes "Theatrum Botanicum"  
 1641 Dutch seize Spice Islands from Portuguese  
 1641 Czar Michael Romanov of Russia forbids sale and use of tobacco  
 1642 Pope Urban VIII bans tobacco, saying that it causes hallucinations and bad behavior  
 1642 Abel Tasman reaches New Zealand  
 1643 Abel Tasman reaches Fiji and New Guinea  
 1645 Richard Weston publishes first description of crop rotation  
 1647 Rice cultivation begins in the Carolinas  
 1650 First coffee house opens in Oxford, England  
 1651 Francisco Hernandez publishes "Rerum Medicarum Novae Hispaniae Thesaurus..."  
 1651 Frederick Wilhelm of Prussia orders cultivation of potatoes  
 1652 First coffee houses open in London  
 1652 British fell pine trees for ship masts in their American colonies  
 1653 Nicholas Culpeper publishes "The English Physician, or Herball"  
 1655 Robert Hook observes structure of cork; first use of "cell"  
 1656 William Coles publishes "Art of Simpling"  
 1657 First chocolate shop, called the Coffee Mill and Tobacco Roll, opens in London  
 1658 Dutch begin to grow coffee in Ceylon  
 1658 Dutch oust Portuguese from Ceylon, thereby gaining control over cinnamon  
 1658 Oliver Cromwell dies of malaria after having refused quinine bark treatment  
 1660 Samuel Pepys notes in his secret diary that he has drunk a "cup of tee...."  
 1661 Robert Boyle extracts methyl alcohol  
 1663 Robert Hooke reports microscopic structure of petrified wood  
 1670 Covent Garden, famous produce market, opens in London  
 1672 John Josselyn publishes "New England Rarities Discovered," a treatise on herbal cures  
 1674 Severe outbreak of ergotism in Gatinais, France  
 1674 "Women's Petition Against Coffee" published  
 1676 Antoni von Leeuwenhoek discovers microorganisms ("animacules")  
 1676 Nehemiah Grew determines that higher plants reproduce sexually

1676 British troops poisoned by jimson weed in Jamestown, Virginia  
 1676 Compagnie de Limonadiers (lemonade vendors) founded in Paris  
 1677 London Pharmacopoeia recognizes cinchona, jalap, and ipecacuanha  
 1682 Nehemiah Grew describes function of stamens and carpels in "Anatomy of Plants"  
 1683 Antoni von Leeuwenhoek discovers bacteria  
 1686 John Ray develops concept of plant species in "Historia Plantarum"  
 1688 Dom Pierre Perignon makes champagne  
 1690 Physick Garden founded in Edinburgh  
 1692 Witch trials in Salem, Massachusetts  
 1694 Rudolph Camerarius distinguishes male and female floral parts  
 1695 Rice introduced (accidentally through shipwreck) into U. S.  
 1696 Dutch plant coffee trees in Java  
 1697 Czar Peter of Russia permits open sale and use of tobacco  
  
 1701 Jethro Tull invents seed drill  
 1706 One coffee tree from Java reaches Amsterdam Botanic Garden  
 1710 British Parliament passes act preserving trees in American colonies for ship's masts  
 1712 Cotton Mather publishes 13 letters on natural history and biology  
 1716 Cotton Mather observes hybridization in maize  
 1717 Giovanni Lancisi suggests that malaria transmitted by mosquitos  
 1719 Rem de Reaumer suggests that paper can be made from wood fiber  
 1720 Coffee introduced into New World  
 1721 Ergot poisoning prevents Peter the Great's attack on the Ottoman Empire  
 1722 Philip Miller begins management of the Chelsea Physic Garden in England  
 1724 Paul Dudley describes cross-pollination in maize  
 1727 Stephen Hales discovers root pressure  
 1727 Coffee trees planted in Brazil  
 1728 Vitus Bering sails through Arctic strait, proving Asia and North America not joined  
 1728 Failure of oat crop in Ireland prompts Jonathan Swift's "A Modest Proposal..."  
 1729 China bans the importation of opium  
 1730 John Bartram founds first U. S. botanical garden (near Philadelphia)  
 1732 J. S. Bach composes the "Coffee Cantata"  
 1732 Dubuisson of France invents a table mill for grinding cacao beans  
 1733 John Kay invents flying shuttle that speeds the weaving process  
 1735 French Academy of Sciences sends expedition to South America  
 1737 Carolus Linnaeus publishes "Genera Plantarum"  
 1738 Charles Marie de la Condamine sees quinine trees in Ecuador  
 1739 John Bartram experiments with cross-breeding in flowers  
 1739 Potato crop fails in Ireland, resulting in about a half million deaths  
 1740 Oat crop fails in Ireland  
 1741 Elizabeth Pinckney begins indigo cultivation  
 1742 Pehr Kalm begins exploration and plant collecting in North America [to 1745]  
 1743 Charles Marie de la Condamine explores the Amazon  
 1743 Sir Joseph Banks born in London  
 1744 Frederick II distributes free potatoes to Prussian peasants  
 1747 Andreas Margraff discovers sugar in sugar beets  
 1750 Brussel sprouts appear as a "sport" (Belgium)  
 1752 Joseph Koelreuter publishes his studies on sex in plants  
 1753 Carolus Linnaeus publishes "Species Plantarum," the starting point for scientific names  
 1753 Sugar cane first grown in the U. S. (Louisiana)  
 1753 James Lind discovers that lemon juice cures scurvy  
 1755 Pierre Poivre smuggles pepper and cinnamon into Mauritius  
 1756 Joseph Black discovers carbon dioxide  
 1758 Jedidiah Strutt invents machine to knit hose  
 1759 Arthur Guinness opens a brewery in Dublin  
 1760 Royal Botanic Gardens at Kew (England) opens  
 1761 John Hill notes development of nasal "polypusses" after excessive use of snuff

1763 Josef Kohlreuter discovers pollination  
 1764 James Hargreaves invents spinning jenny  
 1765 Date introduced into California  
 1765 James Baker and John Harmon set up chocolate factory in Massachusetts  
 1765 Potato now Europe's most widely used food  
 1765 Lazzaro Spallanzani discovers that food can be preserved in air-tight bottles  
 1765 James Watt improves steam engine  
 1766 Louis Antoine de Bougainville begins round-the-world voyage [to 1769]  
 1767 George Washington plants potato at Mount Vernon  
 1768 Capt. James Cook begins his first voyage to the South Pacific [to 1771]  
 1768 Richard Arkwright invents machine to spin cotton  
 1768 Lazzaro Spallanzani disproves theory of spontaneous generation  
 1769 Father Junipero Serra plants grapes, olives, sweet oranges, and figs in California  
 1769 The water frame, for spinning yarn, invented  
 1769 Baron Alexander von Humboldt born in Berlin  
 1770 Dutch destory a year's supply of nutmeg and cloves to maintain their high price  
 1770 Apricot introduced into California  
 1770 Governor Pierre Poivre smuggles nutmegs from Dutch E. Indies and plants them on Mauritius  
 1770 Sir Joseph Banks discovers and names Botany Bay in Australia  
 1770 Joseph Priestly coins the term "rubber" for the Pará rubber latex  
 1771 Joseph Priestley discovers that plants release oxygen  
 1771 Arkwright opens first spinning factory in England  
 1771 Faculte de Paris declares potato not only safe to eat, but useful  
 1772 King George III appoints Joseph Banks as his scientific advisor for the royal gardens  
 1772 Second voyage of Capt. James Cook [to 1775]  
 1772 Daniel Rutherford discovers difference between oxygen and nitrogen  
 1772 Karl Scheele isolates oxygen  
 1772 Joseph Priestley ("Father of the soft drink") demonstrates carbonating apparatus  
 1773 Boston Tea Party  
 1773 East India Company obtains monopoly on production and sale of opium  
 1773 Richard Arkwright produces first cloth made entirely of cotton  
 1773 Tea Act passed by Parliament, allowing East India Co. to export tea to colonies  
 1774 Andreas Marggraf demonstrates that cane sugar and beet sugar are identical  
 1775 Frederick the Great prohibits importation of green coffee into Prussia  
 1775 British Navy replaces French brandy with West Indian rum as its daily grog  
 1776 Third voyage of Capt. James Cook [to 1779]  
 1778 Joseph Banks elected President of the Royal Society in England  
 1779 Jan Ingenhousz discovers that sunlight essential for oxygen production in leaves  
 1779 Samuel Crompton invents spinning mule  
 1780 John Hannon opens first chocolate factory in the U. S. (Dorchester, MA)  
 1780 James Watt develops steam-driven flour mill  
 1780 Abbe Felix Fontana demonstrates that curare poison acts on voluntary muscle, not the heart  
 1784 Andrew Meikle invents threshing machine  
 1784 Richard March invents rope-making machine  
 1784 Karl Scheele discovers citric acid  
 1785 Cartwright invents power loom  
 1785 Ransome invents cast iron plow  
 1785 William Withering publishes "An Account of the Foxglove and Some of Its Medical Uses..."  
 1785 Louis XVI promotes use of potato in France  
 1785 Oliver Evans invents automatic grist mill  
 1786 Sugar beet cultivated in France  
 1786 Rice riots in Edo (Tokyo)  
 1787 Lt. William Bligh sails to Tahiti on H. M. S. Bounty to collect breadfruit seedlings  
 1787 Calcutta Botanic Garden founded  
 1787 William Curtis begins publishing "Botanical Magazine," world's longest running journal  
 1788 Sir James Edward Smith founds Linnean Society (London)  
 1789 Johann W. von Goethe suggests that all plant parts are modified leaves

- 1789 First cotton factory powered by steam opens (Manchester, England)
- 1789 Elijah Craig, a Baptist minister, distills bourbon whisky (Kentucky)
- 1789 Antoine Laurent de Jussieu publishes "Genera Plantarum"
- 1789 Ninety percent of Americans engaged in farming and food production
- 1790 Pineapples introduced into Sandwich Islands (Hawai'i)
- 1790 Vatican opens its own tobacco factory
- 1790 Johann Wolfgang von Goethe publishes his theory of the similar nature of leaves and floral parts
- 1791 First cotton mill in U. S. (Rhode Island)
- 1791 Samuel Peel patents India rubber cloth
- 1792 William Bligh sets out on his second "breadfruit voyage" to Tahiti on H. M. S. Providence
- 1792 Robert Thomas publishes first "Famer's Almanack"
- 1793 Eli Whitney invents cotton gin
- 1793 Karl Sprengel establishes that some plants wind-pollinated
- 1793 Franz Achard extracts sugar from sugar beets
- 1793 Captain William Bligh arrives in St. Vincent with 722 breadfruit seedlings
- 1795 Hydraulic press invented
- 1795 F. A. Chalons-sur-Marne develops sterilization and bottling/canning of food
- 1795 British Navy eliminates scurvy by supplying sailors with lemon juice
- 1795 Joseph Fry of England uses steam engine to grind cacao beans, which leads to large scale production
- 1795 King of Spain grants Don Jose Maria Guadalupe de Cuervo license to produce mezcal wine
- 1796 J. Lowitz prepares pure ethyl alcohol
- 1796 Edict of Peking forbids importation of opium into China
- 1796 British take Ceylon from Dutch, thereby gaining control of cinnamon
- 1797 United States enters world spice trade by importing Sumatra pepper
- 1798 Nicholas Robert invents machine for making continuous lengths of paper
- 1798 Thomas Malthus publishes "An Essay on the Principle of Population..."
- 1799 Alexander von Humboldt and Aimée Bonpland explore South America [to 1804]
- 1799 John Ferriar suggests correlation between digitalis and heart disease
- 1799 Dutch East India Company fails
  
- 1800 Jute domesticated (India)
- 1800 Humboldt and Bonpland observe curare preparation on Orinoco
- 1800 Sugar beet introduced into U. S.
- 1800 Matthew Koops develops vegetable fiber paper
- 1801 Sugar beet domesticated (Silesia)
- 1802 Franz Achard designs first sugar beet factory
- 1802 Soybean introduced into United States
- 1803 Friedrich Sertürner isolates morphine from crude opium latex
- 1803 Andrew Duncan isolates cinchonine
- 1804 A. D. Thaer develops concept of crop rotation
- 1804 England's Royal Horticultural Society founded
- 1804 Meriwether Lewis and William Clark begin exploration of western U. S. [to 1806]
- 1804 World population reaches 1 billion
- 1805 Leschenault describes preparation of upas tieute, a Javanese dart poison
- 1805 J.-M. Jacquard invents draw power loom
- 1806 Benjamin Thompson invents coffee pot with metal sieve
- 1806 Partial failure of potato crop in Ireland
- 1806 Napoleon Bonaparte offers 100,000 franc prize for creating sugar from a native plant
- 1807 Baron von Humboldt publishes first of 30 volume treatise on travels in Spanish America
- 1808 Joseph-Louis Proust identifies glucose, fructose, and sucrose in plant juices
- 1808 John Stearns demonstrates efficacy of ergot extracts during child birth
- 1809 Louis Vaquelin isolates atropine
- 1809 J. B. Lamarck suggests that organs are improved with use and acquired traits are inherited
- 1809 Nicholas Appert develops heat-bottled foods
- 1809 Louis Vauquelin identifies nicotianine as active principle in tobacco
- 1810 J. L. Gay-Lussac discovers that sugar breaks down into alcohol and carbon dioxide
- 1810 Philippe de Girard invents hemp and flax spinning machine

1811 Napoleon decrees that sugar beets grown in France and that processing factories be built  
 1811 Louis Figuier develops bone charcoal filtering technique for sugar purification  
 1812 Austria passes law allowing for confiscation of contaminated rye  
 1812 James Mease publishes first recipe for tomato catchup  
 1812 Gottlieb Lorchoff demonstrates that starch breaks down to glucose  
 1813 Augustin de Candolle coins "taxonomy," for the science of classification of organisms  
 1813 John Clark invents air and water beds made of India rubber cloth  
 1813 Humphry Davy publishes "Elements of Agricultural Chemistry"  
 1814 John Lunan introduces term "grapefruit" in his "Hortus Jamaicaensis"  
 1814 Donkin, Hall, & Gamble introduce first commercially available canned food  
 1815 J. B. Lamarck, French naturalist, introduces a modern species concept  
 1817 Robiquet isolates narcotine  
 1817 P.-J. Pelletier and Magendie isolate emetine  
 1818 Lane invents harvester/thresher  
 1818 P.-J. Pelletier and J. Caventou extract a green pigment and call it "chlorophyll"  
 1818 P.-J. Pelletier and J. Caventou isolate strychnine  
 1818 British plant tea in India  
 1818 Johann Siegert formulates Angostura bitters  
 1819 U. S. government instructs its foreign diplomats to send home seeds of useful plants  
 1819 François-Louis Cailler produces first commercially available chocolate for eating  
 1819 P.-J. Pelletier and J. Caventou isolate brucine  
 1819 Oersted isolates piperine  
 1819 François Louis Callier open first Swiss chocolate factory  
 1820 P.-J. Pelletier and J. Caventou isolate colchicine and quinine  
 1820 Col. Robert Johnson eats tomato before crowd of 2000 people and lives!  
 1820 Thomas Hancock opens England's first rubber factory  
 1821 Runge isolates caffeine from coffee  
 1820 U. S. Pharmacopoeia published  
 1820 Thomas Hancock invents rubber masticator  
 1820 P.-J. Pelletier and J. Caventou isolate cinchonine  
 1822 John Chapman (Johnny Appleseed) plants orchards  
 1823 Charles Macintosh discovers solubility of rubber in naphtha  
 1823 Royal Horticultural Society sends David Douglas to collect fruit trees in North America  
 1824 British Navy distributes Cocoa Issue (1 oz. chocolate block) to sailors  
 1825 David Douglas explores western United States  
 1825 Coffee cultivation begins in Hawai'i  
 1826 Otto Unverdorben develops distilled indigo dye (aniline)  
 1826 Michael Faraday establishes the empirical formula for Pará rubber  
 1827 Salicin isolated from willow bark  
 1827 Heinrich Merck begins commercial production of morphine  
 1828 Coenrad van Houten develops process for removing fat from cacao beans  
 1829 Sylvester Graham develops the Graham Cracker  
 1830 Robert Brown discovers cell nucleus while working on orchids  
 1831 Robiquet and Colin isolate alizarine red from madder  
 1832 Charles Darwin begins his voyage on H. M. S. Beagle [to 1835]  
 1832 Pierre Robiquet isolates codeine  
 1832 Aeneas Coffey invents the alcohol still  
 1832 Karl von Reichenbach discovers creosote in coal tar  
 1833 Avocado introduced into Florida  
 1833 Payen and Persoz isolate first enzyme  
 1834 Cyrus McCormick invents reaper  
 1834 John and Hiram Pitts invent an efficient thresher  
 1834 Anselme Payen extracts cellulose from wood and gives it its name  
 1835 Thiboumery isolates thebaine  
 1836 Asa Gray publishes "Elements of Botany," first American botany textbook  
 1836 Grain combine invented  
 1836 Theodor Schwann demonstrates sugar fermentation the result of yeast activity

1836 Charles Cagniard de la Tour observes yeast growth during fermentation  
 1837 John Deere invents the steel-bladed plow  
 1838 Schleiden and Schwann develop cell theory  
 1838 Captain Charles Wilkes leads U. S. Navy expedition to Pacific  
 1838 Viceroy in Canton orders destruction of almost 3 million pounds of British opium  
 1839 Charles Goodyear develops vulcanized rubber  
 1839 Opium Wars in China begin [to 1842]  
 1839 Jan Purkinje coins the term "protoplasm"  
 1839 John Lawes develops artificial fertilizer  
 1839 U. S. Congress appropriates \$1000 to provide free seed to farmers  
 1839 Assam tea auctioned off in London  
 1840 Friedrich Keller makes first all-wood paper  
 1840 Justus von Liebig establishes that some minerals can limit growth in plants  
 1840 Jean-Baptise-Joseph Dieudonne shows that plants obtain nitrogen from soil nitrates  
 1840 J. Schweppes Co. develops tonic water  
 1840 Grapefruit trees from Spain introduced into Florida  
 1841 William Jackson Hooker becomes first official Director of Kew Botanic Gardens  
 1842 English develop first chemical fertilizers  
 1843 Franciscans introduce almond into California  
 1843 Smoking of opium banned in China  
 1843 Charles Goodyear patents process for vulcanization of rubber  
 1844 F. Keller invents wood-pulp paper  
 1844 John Mercer invents process that improves cotton's durability and sheen  
 1845 E. B. Bigelow invents power loom for carpet manufacture  
 1845 J. Heilman invents machine for combing cotton  
 1845 Late blight of potato causes famine in Ireland and Europe [to 1848]  
 1845 Stephen Perry invents rubber bands from vulcanized rubber  
 1846 Elias Howe invents sewing machine  
 1846 Christian Schonbein discovers solubility of cotton cellulose  
 1846 H. von Mohl describes protoplasm  
 1846 U. S. repeals Corn Laws, imposing import duties  
 1846 Figuiet and Purmarède invent vegetable-based parchment paper  
 1846 Charles Hancock invents sponge rubber  
 1847 Sir William Hooker's Museum of Economic Botany opens to public at Kew Gardens  
 1847 Herbert reports that crossing of some plants yields fertile offspring, but others sterile  
 1847 Fry & Sons in England develop chocolate for eating  
 1848 Heinrich Merck isolates papaverine  
 1848 Explorer Richard Spruce trains in tropical botany at Kew [to 1849]  
 1849 David Livingstone begins exploration of Africa [to 1871]  
 1849 Magnus Huss coins the term "alcoholism"  
 1849 William Lobb collects plants of horticultural potential on the Pacific coast of North America  
 1850 Claude Bernard discovers that curare blocks nerve impulses to muscle tissue  
 1850 John Heath invents the grain binder  
 1850 Sorghum introduced into U. S. from Africa  
 1850 Marijuana listed in the U. S. Pharmacopeia  
 1850 Milo or Kaffir-corn introduced into U. S.  
 1850 Delicious red apple found in Iowa  
 1850 American Vegetarian Society founded  
 1850 Frist transatlantic cable, protected by gutta-percha, laid between Dover, England and Calais, France  
 1850 William Alcott, a cousin of Louisa May, opens America's first health food store (Boston)  
 1851 Robert Fortune brings 2000 tea plants and 17,000 seeds out of China  
 1852 Ephraim Bull develops Concord grape, a cross between European and catawba grapes  
 1852 Nelson Goodyear and Charles Macintosh develop vulcanite and ebonite (hard rubber)  
 1853 Alexander Wood and Charles Pravaz invent the hypodermic syringe  
 1853 Chef George Crum develops the potato chip  
 1853 Concord grape exhibited by Massachusetts Horticultural Society  
 1854 John Polson develops corn flour

1856 John Dauglish develops aerated bread  
 1856 Ghirardelli's California Chocolate Manufactory established  
 1856 Louis Pasteur discovers process now called pasteurization  
 1856 Second Opium War; Britain and France defeat Manchu armies [to 1860]  
 1856 N. Pringsheim observes entrance of sperm into ovum  
 1857 Louis Pasteur publishes "Mémoire sur la Fermentation Appelee Lactique"  
 1857 Count Agoston Harszthy de Moksa establishes California wine industry in the Valley of the Moon  
 1858 Remak and Virchow develop theory that cells arise from divisions of pre-existing cells  
 1858 Hyman Lipman invents the pencil with attached eraser  
 1858 Mace and nutmeg crops planted on Grenada  
 1858 J. Schweppes patents quinine tonic water  
 1858 Treaty of Tientsin legalizes importation of opium into China  
 1858 Charles Darwin reads paper on plant and animal domestication before Linnean Society  
 1859 Charles Darwin publishes "The Origin of Species by Means of Natural Selection..."  
 1859 Franz Knop and Julius von Sachs establish that plants can grow in nutrient solutions  
 1859 Karl von Scherzer isolates cocaine from coca leaves  
 1860 Richard Spruce and Robert Cross send cinchona seeds from S. America to England  
 1860 Louis Pasteur publishes "Mémoire sur la Fermentation Alcoolique"  
 1860 Frederich Walton invents linoleum  
 1860 Charles Baudelaire publishes "Les Paradis Artificiels..."  
 1860 Henry Shaw opens garden in St. Louis; it would become the Missouri Botanical Garden  
 1860 Richard Spruce ships plants and seeds of Cinchona from Ecuador to London  
 1861 Louis Pasteur publishes "Mémoire sur les Corpuscles Organisés Qui Existent dans l' Atmosphere"  
 1861 Robert Cross brings 637 cases of cinchona to London from Ecuador  
 1862 Julius von Sachs establishes that starch a product of photosynthesis  
 1862 Ebenezer Stevens invents the bread-making machine  
 1862 John Leighton invents the rubber stamp  
 1862 Charles Darwin publishes "On the Various Contrivances by which ... Orchids are Fertilized..."  
 1862 U. S. Congress passes Morrill Land-Grant Act  
 1862 U. S. Congress prohibits distillation of alcohol without a license  
 1862 U. S. Navy abolishes rum ration for its sailors  
 1862 United States Department of Agriculture established  
 1863 Root louse (*Phylloxera vasatrix*) attacks European vineyards  
 1863 Emperor Louis Napoleon asks Pasteur to study maladies of wine  
 1863 Pasteur discovers that heat kills bacteria  
 1863 Peter Smirnoff, a former Russian serf, open charcoal-process distillery in Moscow, Russia  
 1864 Pasteur shows that organism causing fermentation not spontaneously generated  
 1864 Jobst and Hesse isolate physostigmine from calabar bean (*Physostigma venenosum*)  
 1865 Gregor Mendel publishes "Experiments in Plant Hybridization"  
 1865 David Livingstone publishes "Narrative of an Expedition to the Zambesi..."  
 1865 Adolphus Busch and Eberhard Anheuser open a brewery in St. Louis, Missouri  
 1865 Charles Ledger of England smuggles cinchona out of Bolivia  
 1865 Sir Joseph Dalton Hooker, son of William Hooker, becomes second director of Kew Gardens  
 1866 Richard and George Cadbury sell pure cocoa in Britain  
 1866 Louis Pasteur publishes "Etudes sur le Vin"  
 1866 Jack Newton Daniel opens the distillery that bears his name in Tennessee  
 1866 Thomas Dickson opens a distillery in Essex, CT to manufacture witch hazel extract  
 1867 Atropine shown to block effects of vagal nerve stimulation  
 1867 Britain introduces tea into Ceylon  
 1868 Charles Darwin publishes "The Variation of Animals and Plants Under Domestication"  
 1868 James Arnold's estate finances the establishment of Harvard University's Arnold Arboretum  
 1868 John Cadbury mass-markets first boxes of chocolate candies  
 1869 Schneider discovers navel orange in Brazil  
 1869 Digitoxin isolated from foxglove plant  
 1869 Charles Fleishmann founds yeast-production industry in USA  
 1869 Thomas Welch pasteurizes Concord grape juice to make unfermented sacramental wine  
 1870 Thomas Adams develops chicle-based chewing gum



1870 Friederich Miescher discovers DNA  
 1870 MacIntosh apple propagated  
 1870 Ground wood paper pulp first made (Germany)  
 1870 Benjamin Franklin Goodrich opens rubber factory in Akron, Ohio  
 1872 Ebers Papyrus (1500 B. C.) discovered in Thebes  
 1872 Pará rubber (*Hevea brasiliensis*) domesticated (South America)  
 1872 Carl Ekman develops the sulphite processing of wood pulp  
 1872 Luther Burbank develops the Burbank potato  
 1873 Don Cenobia Sauza distillery exports first tequila to the U. S.  
 1873 Asa T. Soule of Rochester, NY invents hop bitters, the most successful patent medicine  
 1874 Mennonites introduce Turkey red wheat into the U. S.  
 1874 Othman Zeidler develops DDT  
 1875 Pilocarpine isolated from jaborandi leaf  
 1875 Eugen Langen invents the sugar cube  
 1875 Richard Joshua Reynolds founds tobacco company in Winston, North Carolina  
 1875 Luther Burbank establishes experimental garden in Santa Rosa, California  
 1875 Bing cherry developed in Oregon  
 1875 Ferdinand Tiemann patents process for synthetic vanilla  
 1875 Machine invented that strips corn kernels from cobs  
 1875 Henry Wickham delivers Pará rubber seeds from Brazil to Royal Botanic Gardens at Kew  
 1875 First Agricultural Experiment Station established in the U. S. (Connecticut)  
 1876 Charles Darwin publishes "The effects of Cross and Self-fertilisation ... "  
 1876 Henry J. Heinz develops catsup  
 1876 Daniel Peter and Henri Nestlé create milk chocolate  
 1876 Henry Wickam smuggles seeds of Pará rubber out of Brazil  
 1876 John Henry Kellogg develops flake cereal, to curb sex drive  
 1876 Eduard Strasburger describes mitosis in plants  
 1876 Lydia Estes Pinkham patents "Mrs. Lydia E. Pinkham's Vegetable Compound"  
 1876 Charles E. Hires promotes "Hires Rootbeer Household Extract"  
 1876 Thomas Johnstone Lipton opens his first tea shop  
 1876 Phylloxera destroys more than 1 million acres of France's vineyards  
 1877 Wilhelm Pfeffer discovers osmosis  
 1877 John Harvey Kellogg develops a cereal he calls "Granula"  
 1878 Caleb Chase & James Sanborn form company specializing in coffee and tea  
 1879 John Appleby invents grain binder  
 1879 P.-M.-A. Millardet develops Bordeaux mixture to protect grapes against fungi  
 1879 Constantine Fahlberg and Ira Remsen invent saccharin  
 1879 Thomas Edison successfully tests carbonized bamboo filament in incandescent light bulb  
 1879 Rudolphe Lindt invents conching, a procedure for improving smoothness of chocolate  
 1876 Daniel Peter and Henri Nestlé form the Nestlé Company  
 1879 Daniel Peter develops first milk chocolate candy bar  
 1880 Sugar beets raised commercially for first time in U. S.  
 1880 Rodolfe Lindt invents conching machine used to process cacao beans  
 1880 Canned fruits become commercially available  
 1881 James Logan develops loganberry, a raspberry and blackberry hybrid  
 1881 John Boyd Dunlop invents hollow tire made of rubber latex and cloth  
 1882 A. P. De Candolle publishes "L'Origine des Plantes Cultivees"  
 1882 Albert King discovers that mosquitos transmit malaria  
 1883 Edouard J. L.-M. von Beneden discovers meiosis  
 1883 French develop rayon, first synthetic fiber  
 1883 James Buchanan Duke begins making machine-manufactured cigarettes  
 1884 William S. Halsted discovers anesthetic property of cocaine  
 1884 Carl Dahl invents sulfate (Kraft) pulp  
 1885 Karl Benz invents first gas-powered automobile  
 1885 John S. Pemberton markets Coca Cola  
 1886 R. S. Lazenby develops Dr. Pepper  
 1886 Hires Root Beer marketed

1887 Nagai Nagayoshi isolates ephedrine from mahuang (*Ephedra sinica*)  
 1887 U. S. Congress passes Hatch Act, providing funds for agricultural experiment stations  
 1888 John Boyd Dunlop invents pneumatic tire for bi- and tricycles  
 1888 Heinrich von Waldeyer-Hartz discovers chromosomes and coins term for them  
 1888 Angus Campbell invents cotton picker  
 1889 Gottlieb Wilhelm Daimler invents gasoline-powered automobile  
 1889 James Buchanan Duke founds American Tobacco Company  
 1889 United States Department of Agriculture founded  
 1899 United Fruit Company founded  
 1890 John H. Kellogg develops peanut butter for his toothless patients  
 1891 W. Rimpan describes spontaneous fertile wheat x rye hybrids  
 1892 Asa Chandler founds Coca-Cola Co.  
 1893 Henry Perky develops Shredded Wheat  
 1893 Charles Post develops Postum, a coffee substitute  
 1893 Thomas Lipton takes out a trademark on his tea  
 1893 O. Hesse develops heroin from morphine and acetic anhydride  
 1893 U. S. Supreme Court declares the tomato to be a vegetable, not a fruit  
 1893 Luther Burbank publishes "New Creations in Fruits and Flowers"  
 1894 W. A. Burpee introduces "iceberg" lettuce  
 1895 John Harshberger coins the term "ethnobotany"  
 1895 John and Will Kellogg develop wheat flake cereal  
 1896 Arthur Heffter isolates mescaline from peyote cactus  
 1896 Pineapple introduced into Hawai'i  
 1896 George Washington Carver begins his studies of products made from peanuts  
 1896 New York Botanical Garden founded  
 1897 Ronald Ross identifies protozoan as cause of malaria  
 1897 Felix Hoffmann of Bayer synthesizes stable form of acetylsalicylic acid  
 1898 Richard Willstätter determines structure of atropine and cocaine  
 1898 M. W. Beijerinck discovers that tobacco mosaic disease caused by virus  
 1898 Bayer introduces heroin as a cough suppressant  
 1899 Hermann Dreser and Felix Hoffmann develop aspirin  
 1899 Mexican boll weevil, a beetle, enters U. S.  
  
 1900 United Fruit Company founded  
 1900 Spinal anesthetic using cocaine developed  
 1900 Beitter isolates alkaloids from khat  
 1900 Milton Hershey opens factory to produce chocolate bars  
 1900 H. de Vries, C. E. Correns, and E. Tschermak von Seysenegg rediscover Mendel's work  
 1900 David Barrows awarded first doctorate in ethnobotany  
 1900 David Wesson markets first edible cottonseed oil  
 1901 Hugo De Vries coins term "mutation"  
 1901 Gerrit Grijns discovers that berberi caused by nutrient-poor, polished rice  
 1901 James Dole establishes first pineapple plantation on Oahu, Hawai'i  
 1901 Ludwig Roselius develops 97% caffeine-free coffee  
 1901 Satori Kato develops soluble instant coffee  
 1902 Nagai Nagayoshi of Japan isolates rotenone from *Derris elliptica*  
 1902 U. S. bans use of coca leaf extracts in Coca Cola  
 1902 James Dole founds Hawaiian Pineapple Co.  
 1902 Caleb Bradham founds Pepsi Cola Co.  
 1903 Walter Sutton shows that chromosomes carry hereditary material  
 1903 Christian Gray and Thomas Sloper invent cross-ply rubber tire  
 1903 Ludwig Roselius introduces Sanka Coffee  
 1904 Postum Co. introduces "Elijah's Manna," later to be called "Post Toasties"  
 1905 A. E. Douglass develops technique of dating tree rings  
 1905 Heinrich Braun introduces novocaine into clinical use  
 1905 Vick's Magic Croup Salve introduced  
 1905 Ludwig Roselius develops decaffeination process

1906 U. S. Congress passes Pure Food and Drug Act  
 1906 William Bateson coins "genetics" for new science  
 1906 Gerrit Grijns suggests beriberi caused by nutrient deficiency in rice  
 1906 William Keith Kellogg (brother of J. H. Kellogg) founds W. K. Kellogg  
 1907 American Spice Trade Association founded  
 1907 President Theodore Roosevelt declares Maxwell House coffee "good to the last drop"  
 1908 C. W. Post develops "Post Toasties"  
 1908 Melita Bentz invents once-through coffee brewing filter using linen towel  
 1908 MSG (monosodium glutamate) isolated from seaweed  
 1908 Jacques Brandeneberger, a Swiss chemist, invents cellophane  
 1908 Henry Wickham publishes "On the plantation, cultivation, and curing of Pará Indian rubber"  
 1909 U. S. prohibits importation of opium  
 1909 U. S. Bureau of Soils declares soil an indestructible  
 1909 Pictet and Gams synthesize papaverine  
 1909 Wilhelm Johannsen coins "gene," "genotype," and "phenotype"  
 1909 Aaron Levene discovers RNA  
 1909 Karl Hofmann makes synthetic rubber from butadiene  
 1909 Sir Thomas Lipton begins blending and packaging of tea leaves  
 1909 George Washington develops soluble coffee powder  
 1910 Thomas Hunt Morgan discovers specific genes occur on specific chromosomes  
 1910 U. S. D. A. establishes its Agricultural Research Center at Beltsville, MD  
 1910 William Cadbury urges companies not to purchase cacao beans from slave-based plantations  
 1910 Harvey Firestone invents non-skid tire  
 1911 A. H. Sturtevant produces first chromosome map  
 1911 U. S. Supreme Court dissolves American Tobacco Co.  
 1911 Procter Gamble introduce "Crisco," the first solid vegetable shortening  
 1911 Henry Ginaca invents the pineapple processing machine  
 1911 Polish chemist Casimir Funk discovers "vitamines," a rice hull extract, that cures beriberi  
 1911 Kudzu is introduced from Japan for erosion control and forage  
 1912 J. Suzuki, T. Shimamura, and S. Ohdake extract anti-beriberi substance from rice hulls  
 1912 Casimir Funk coins the term "vitamin"  
 1913 Richard Willstatter determines structure of chlorophyll  
 1914 U. S. Congress passes Harrison Narcotic Act  
 1914 U. S. Congress passes Smith-Lever Act, establishing agricultural extension service  
 1914 Chaim Weizmann uses a bacterium to ferment sugars to yield acetone, butanol, and ethanol  
 1915 Absinthe with wormwood banned  
 1916 Quaker Oats develops instant oatmeal  
 1917 Donald Jones develops double-cross hybrid maize  
 1917 Clarence Birdseye develops freezing techniques for preserving foods  
 1918 Brazil bans export of Pará rubber seeds  
 1918 First use of airplane in crop dusting  
 1920 Alcohol use in U. S. prohibited by 18th Amendment to Constitution  
 1920 K. Spiro and A. Stoll extract ergotamine  
 1920 Joseph Krieger invents the tea bag  
 1920 Rudolf Boysen develops the boysenberry (blackberry x raspberry x loganberry)  
 1920 George Washington Carver testifies before U. S. Congress on uses for the peanut  
 1921 Thomas Hunt Morgan develops chromosome theory of heredity  
 1921 "Nobilized" form of sugar cane produced (Java)  
 1921 E. M. East and G. M. Shull produce hybrid maize  
 1922 First U. S. soybean refinery opens (Illinois)  
 1924 "Wheaties" introduced into U. S. market  
 1925 W. K. Kellogg develops Rice Crispies  
 1925 Robert Robinson synthesizes morphine  
 1925 Automatic potato-peeling machine invented  
 1926 N. I. Vavilov publishes "Centers of Origin of Cultivated Plants"  
 1926 Henry Wallace founds Pioneer Hi-bred International  
 1926 Maize hybrid seed becomes available

1926 H. J. Mueller discovers that X-rays induce genetic mutations  
 1926 I. G. Farben invents Buna S (synthetic rubber)  
 1926 Ergot poisoning in U. S. S. R.  
 1927 John and Mack Rust perfect the mechanical cotton picker  
 1927 World population reaches 2 billion  
 1927 Thomas Edison, Henry Ford, and Harvey Firestone found Edison Botanic Research Foundation  
 1928 Sir Alexander Fleming discovers that Penicillium spores kill certain bacteria  
 1928 Albert Szent-Györgyi isolates Vitamin C from paprika pepper  
 1928 Josef Stalin orders collectivization of Soviet farms  
 1928 Adolf Otto Reinhold Windaus reports chemical structure of digitoxin  
 1928 Henry Ford establishes Fordlandia, a 2.5 million acre rubber plantation in South America  
 1929 A. Harden and H. von Euler-Chelpin win Nobel Prize for work on sugar fermentation  
 1929 E. Murphy and W. Chapman invent foam rubber  
 1929 Wonder Bread (Continental Bakery) introduces sliced bread  
 1929 American Maize Products develops first genetically modified maize  
 1929 General Foods develops Minute Rice  
 1929 R. T. French develops instant mashed potatoes  
 1930 U. S. Congress passes Plant Patent Act  
 1930 Postum Co. markets frozen foods  
 1930 Castetter establishes masters program in ethnobotany at Univ. of New Mexico  
 1930 Sydney Smith isolates digoxin from Digitalis lanata  
 1930 Clarence Birdseye patents a process for the quick freezing of food  
 1930 Norman Haworth, English chemist, synthesizes Vitamin C  
 1931 Louis Lewin publishes "Phantastica..."  
 1931 Indian snakeroot reported as useful in treatment of certain mental disorders  
 1931 First plant hormone (indole acetic acid) discovered  
 1931 Wallace Carothers develops Du Prene (later called neoprene), first synthetic rubber  
 1932 Du Pont markets synthetic rubber  
 1932 Walter Haworth synthesizes Vitamin C  
 1932 Germans develop atabrine (quinachrine hydrochloride), a synthetic quinine  
 1932 Charles King isolates Vitamin C (ascorbic acid) from lemon juice  
 1933 Prohibition repealed by 20th Amendment to U. S. Constitution  
 1933 Golden Cross Bantam corn, first widely planted hybrid, introduced  
 1933 Ernest and Julio Gallo build winery in Modesto, California  
 1933 Soil Erosion Service established in U. S. Department of Interior  
 1933 Sanforization, a technique for reducing shrinkage in cotton fibers, developed by Sanford L. Cluett  
 1934 J. P. Lent isolates coumarin from spoiled clover  
 1934 Wallace Carothers invents nylon, an artificial fiber  
 1934 Philip White and Roger Gautheret get plant tissue culture to survive  
 1935 Ergonovine proven effective in obstetrics  
 1935 Trofim Lysenko's "scientific" views become official Soviet policy  
 1935 Alcoholics Anonymous founded  
 1935 Rudolph Hass patents his avocado cultivar  
 1936 Andrei Belozersky isolates pure DNA  
 1936 Tadeusz Reichstein isolates cortisone  
 1937 Pierre Givaudon discovers colchicine induces chromosome doubling  
 1937 U. S. Congress passes Marijuana Tax Act  
 1937 Michael Sveda and L. F. Audrieth invent the artificial sweetener "Cyclamate"  
 1937 Albert Szent-Györgyi awarded Nobel Prize (Chemistry) for discovery of vitamin C  
 1938 Arthur Stoll and Albert Hofman synthesize LSD (lysergic acid diethylamide)  
 1938 Nestlé Co. develops instant coffee (Switzerland)  
 1938 Richard Gill discovers that curare made from Chondrodendron tomentosum  
 1939 Paul Müller of Geigy Pharmaceuticals discovers insecticidal properties of DDT  
 1939 U. S. D. A. successfully tests DDT against Colorado potato beetle  
 1939 F. H. Muller relates smoking and lung cancer  
 1939 Japanese beetles threaten U. S. crops  
 1940 Automatic hay baler invented

1940 T. D. Lysenko becomes Director of Institute of Genetics in Soviet Union  
 1940 N. I. Vavilov arrested by Soviet government for being British spy  
 1941 George Beadle and Edward Tatum develop "one-gene, one-enzyme" hypothesis  
 1941 Stem rust devastates Mexican wheat crop  
 1942 R. E. Marker synthesizes human sex hormones from Japanese yams  
 1942 U. S. Congress passes Opium Poppy Control Act  
 1942 President Franklin D. Roosevelt declares "modern war cannot be won without rubber"  
 1943 N. I. Vavilov dies in Soviet labor camp  
 1943 Albert Hofmann discovers LSD, a powerful hallucinogen  
 1943 DDT introduced to fight insects in U. S.  
 1943 Rockefeller Foundation and Mexican government found CIMYT  
 1943 U. S. distilleries produce alcohol for synthetic rubber  
 1944 Robert Woodward and William Doering synthesize quinine  
 1944 Avery, McCarty, & McLeod identify DNA as molecular basis of heredity  
 1944 Chiquita banana introduced by United Fruit Co.  
 1945 2, 4-D introduced for general use  
 1945 Alton Ochsner relates smoking and lung cancer at Duke Univ. address  
 1945 Food and Agriculture Organization (FAO) of the United Nations founded in Rome  
 1945 Samuel Salmon discovers semi-dwarf wheat variety (NORIN 10)  
 1945 Univ. of California develops long-season strawberry  
 1946 Self-rising corn meal first marketed in U. S.  
 1946 Dutcher isolates d-tubocurarine  
 1947 Thor Heyerdahl's sails on the raft "Kon Tiki" from Peru to an island near Tahiti  
 1947 NORIN 10 gene introduced into North American wheat  
 1947 Herbicide 2,4-D introduced  
 1947 Karl Link develops Warfarin from an anticoagulant in sweet clover  
 1948 Cortisone found effective in treatment of rheumatoid arthritis  
 1948 Liberty Hyde Bailey coins the term "cultivar"  
 1948 Paul Müller receives Nobel Prize for his discovery of the toxic properties of DDT  
 1949 Robert Boyer patents vegetable protein fibers derived from soybeans  
 1950 Barbara McClintock publishes "The Origin and Behavior of Mutable Loci in Maize"  
 1950 Hoagland and Arnon develop balanced mixture of 11 nutritional salts  
 1950 Cyclamate introduced  
 1950 General Mills introduces "Minute Rice"  
 1950 Richard Doll, British physician, presents first statistical proof linking smoking and lung cancer  
 1950 National Science Foundation established  
 1951 Woodward synthesizes cortisone  
 1951 J. Watson, F. Crick, and M. Wilkins propose DNA structure  
 1952 Emil Schlitter isolates reserpine from Indian snakeroot  
 1953 James Watson and Francis Crick publish "Molecular Structure of Nucleic Acids"  
 1953 Evarts Graham and Ernest Wyder show that cigarette tars may cause cancer  
 1954 Woodward synthesizes strychnine  
 1954 Nathan Kline develops reserpine (anti-depressant)  
 1954 Wheat stem rust destroys 75% of Durum wheat crop  
 1954 Ernest Sears demonstrates that wheat chromosomes can be substituted  
 1955 Hurricane Janet destroys 75% of Grenada's nutmeg trees (about 40% of world crop)  
 1955 Severo Ochoa synthesizes RNA  
 1955 James Schlatter develops aspartame, an artificial sweetener  
 1956 Sorghum hybrid seed becomes commercially available  
 1956 Arthur Kornberg synthesizes DNA  
 1956 Pincus discovers that wild yams will stop ovulation in humans  
 1956 U. S. Congress passes Narcotic Drug Control Act  
 1957 Gibberellins (plant growth hormones) isolated  
 1957 Vinca alkaloids from periwinkle found effective against leukemia  
 1957 Eli Lilly releases "Darvon," a codeine alternative  
 1958 Kiwi fruit domesticated  
 1958 Robert Noble and Charles Beer isolate vinblastine, one of the vinca alkaloid, from the periwinkle

1958 U. S. Congress requires enrichment of rice  
 1958 Sweet 'n Low introduced  
 1958 Mass of cultured cells gives rise to complete plants  
 1958 George Beadle and Edward Tatum win Nobel Prize for one gene-one enzyme work  
 1959 National Seed Storage Laboratory founded at Fort Collins, CO  
 1959 Society for Economic Botany founded  
 1959 U. S. Dept. of Agriculture seizes 25% of cranberry crop, fearing weed-killer contamination  
 1960 Georges Morel clones cultured cells  
 1960 FDA approves Enovid for birth control  
 1960 World population reaches 3 billion  
 1961 J. A. Wilson and W. M. Ross develop stable cytoplasmic-male-sterile wheat  
 1961 Melvin Calvin wins Nobel Prize (Chemistry) for work on photosynthesis  
 1962 James Watson and Francis Crick win Nobel Prize (Medicine) for DNA work  
 1962 International Rice Research Institute (IRRI) opens in Philippines  
 1962 Coby Lorenzen, Jr. invents tomato harvester  
 1962 Rachel Carson publishes "Silent Spring"  
 1964 Edwin Mertz develops high-lysine maize  
 1964 World Health Organization warns of psychological dependence on khat  
 1964 Mutant opaque-2 gene increases lysine and tryptophan content of maize  
 1964 IRRI begins "Green Revolution" with new strains of high-yield rice  
 1964 Surgeon General Luther Terry links cigarette smoking and lung cancer  
 1965 T. D. Lysenko dismissed as Director of Soviet Institute of Genetics  
 1965 V. Vasil and A. G. Hildebrandt regenerate complete tobacco plant from single cells  
 1965 Standard Malaysian Rubber grading system comes into use  
 1967 Raphael Mechoulam of Israel synthesizes tetrahydrocannabinols  
 1965 U. S. Congress requires warning labels on cigarettes  
 1965 U. S. Congress passes Drug Abuse Control Amendment  
 1966 International Rice Research Institute releases IR8 "Miracle Rice"  
 1966 Michael Sporn and coworkers report highly toxic aflatoxins on peanuts  
 1966 General Mills introduces flavored protein that tastes like bacon  
 1967 U. S. D. A. begins tests of irradiating food to kill insects  
 1967 A. E. Porsild and Charles Arington germinate 10,000 year old lupine seeds  
 1967 Clinton Corn Processing Co. introduces high fructose corn syrup  
 1967 James Faria & Robert Wright patent AstroTurf, an artificial grass  
 1968 W. Gaud, head of the U. S. Foreign Aid Program, coins the phrase "green revolution"  
 1970 Norman Borlaug receives Nobel Prize (Peace) for development of dwarf wheat  
 1970 Male sterile strains of maize hit by southern leaf blight  
 1970 Rust hits Brazilian coffee crops causing \$3 billion loss  
 1970 Barley hybrid seed becomes commercially available  
 1971 Centro Internacional de la Papa (CIP) founded  
 1971 Canadian Int. Development Agency investigates triticale as food for humans  
 1971 First Starbucks opens in Seattle's Pike Place Market  
 1972 Wild rice domesticated  
 1972 Black sigatoka fungus attacks Central American bananas  
 1972 Use of DDT banned in the U. S.  
 1973 High lysine strains of sorghum developed  
 1973 Herbert Boyer and Stanley Cohen create DNA with sticky ends  
 1973 Stanley Cohen and Herbert Boyer recombine and duplicate DNA from two species  
 1974 Wheat hybrid seed becomes commercially available  
 1975 Endorphins (naturally occurring morphine-like hormones) discovered  
 1975 Miller Brewing Company introduces "Lite" beer  
 1975 Soft drinks now more popular than coffee  
 1975 World population reaches 4 billion  
 1975 Schell & Van Montagu find crown gall genes occur in plasmids  
 1975 Seed Savers Exchange founded  
 1976 Soft drinks now more popular than milk  
 1976 HFCS (high fructose corn syrup) developed

1976 Herbert Boyer and Robert Swanson found Genentech, first genetic engineering company  
 1979 Raphael Guzman discovers perennial teosinte (Mexico)  
 1980 Coca Cola switches from sugar to high fructose corn sweeteners  
 1980 U. S. Supreme Court rules that genetically-engineered bacteria may be patented  
 1981 Liza Hohenschutz et al. isolate castanospermine, useful in HIV treatment, from Moreton Bay chestnut  
 1981 Whitely & Schnepf find gene in *Bacillus thurgensis* that kills insects  
 1982 Horst Binding and Jonathan Gressel develop protoplast fusion  
 1983 Barbara McClintock receives Nobel Prize for discovery of "jumping genes"  
 1983 N. Murai inserts protein from bean plant into a sunflower  
 1983 NutraSweet, a synthetic sugar substitute, introduced  
 1983 Functioning bacterial plasmid transferred into plant cell  
 1983 Murray & Szostak construct first artificial chromosome  
 1985 T. Fujimara regenerates rice protoplasts  
 1985 U. S. Board of Patent Appeals rules that plants may be patented  
 1985 Coca Cola replaces its traditional recipe with a new, sweeter version  
 1986 Coca Cola pulls "New Coke" from market  
 1986 U. S. D. A. approves irradiation of fruits and vegetables  
 1986 U. S. D. A. approves field-testing of genetically altered, high-yield tobacco  
 1986 World population reaches 5 billion  
 1987 Genetically-engineered, frost-resistant potatoes field-tested in California  
 1987 Genetically modified tobacco with herbicide-tolerance, gene field-tested  
 1988 Carol Rhodes inserts foreign gene into maize  
 1988 U. S. carries out experiments using robots to pick fruits  
 1988 Monsanto Corporation field-tests Roundup-resistant tomato  
 1988 James Anderson discovers that oat bran lowers cholesterol levels  
 1989 Taxol, from the Pacific yew, found effective in treatment of human breast cancer  
 1991 U. S. Government declares second-hand smoke a health hazard  
 1991 Sale of salsa in the U. S. exceeds that of catsup  
 1992 One hundred ninety-two countries sign Convention on Biodiversity  
 1994 Food and Drug Administration approves sale of genetically-engineered "Flavr Savr" tomato  
 1994 First genetically-engineered food goes on sale in California and Illinois  
 1994 U. S. Congress passes Dietary Supplement Health & Education Act  
 1995 Food and Drug Administration declares nicotine a drug  
 1995 Monsanto introduces Newleaf potato, genetically engineered to kill potato beetle  
 1995 Environmental Protection Agency approves marketing of genetically-engineered maize  
 1996 California passes Proposition 215, thereby legalizing medicinal use of marijuana  
 1997 John Pezzato discovers anti-cancer properties of resveratrol in grapes and other fruits  
 1997 The Liggett Group admits that tobacco is addictive  
 1997 U. S. District judge rules F. D. A. can regulate tobacco as a drug  
 1998 Delta & Pine Land Co. & U. S. D. A. patent "terminator gene"  
 1999 Institute of Medicine calls for clinical trials of medical marijuana  
 1999 Dupont purchases Pioneer Hi-Bred, world's largest seed corn company  
 1999 Food and Drug Administration approves use of "Olestra" in processed foods  
 1999 World population reaches 6 billion  
 1999 John Losey finds Bt corn pollen toxic to butterflies  
 1999 Plum pox found for first time in North America  
 1999 Monsanto releases "terminator seeds"  
  
 2000 Human genome decoded  
 2000 Royal Botanic Garden, Kew establishes Millenium Seed Bank at Ardingly, England  
 2001 Aventis CropScience is ordered to pay millions in compensation for genetically altered corn  
 2001 Syngenta and Myriad Genetics decode rice genome  
 2001 U. S. Congress passes "Fruit, Vegetable, and Plant Smuggling Act"  
 2001 U. S. Supreme Court rules that use of medicinal marijuana violates federal law  
 2001 Environmental Protection Agency renews authorization for use of genetically modified corn  
 2002 California Supreme Court ruling protects medicinal use of marijuana  
 2003 U. S Congress renames the french fry as freedom fry

- 2003 Virgin Airlines cancels flight to Australia because of smell of durian fruit in passenger cabin
- 2004 Ninth Circuit Court rules D. E. A. lacks authority to ban foods derived from hemp
- 2004 FDA bans ephedra – first ban of a dietary supplement
- 2005 Swiss government allows limited production of absinthe
- 2005 Complete genome sequence of rice mapped (37,544 genes)
- 2006 FDA declares no scientific support for medicinal use of marijuana
- 2007 Global Seed Vault established on the Norwegian Island of Spitsbergen
- 2007 FDA requires tests of ingredients in herbal supplements, but not their safety or effectiveness
- 2007 French and Italian researchers map the pinot noir grape genome (about 30,000 genes)
- 2007 The Netherlands bans sale of hallucinogenic mushrooms
- 2008 California bans use of khat
- 2008 Mars Candy Co. purchases William J. Wrigley, Jr. chewing gum
- 2009 American Med. Assoc. urges federal government to remove marijuana from Schedule 1 list
- 2009 U. S. Department of Energy publishes sorghum genome
- 2009 Air New Zealand conducts test of jet fuel made partially from jatropha oil
- 2009 Keerti Rathore of Texas A & M Univ. discovers how to inactivate gossypol gene in cotton
- 2010 Kraft purchases Cadbury Chocolate for \$19B
- 2010 USDA, IBM, and Mars Candy Co. complete preliminary cacao gene sequence
- 2010 Drought destroys 20% of Russian wheat crop
- 2010 Apple genome decoded; 57,000 genes identified
- 2010 U. S. Navy orders 150,000 gals. of fuel made from algae
- 2010 U. S. Supreme Court lifts ban on genetically engineered alfalfa
- 2010 California voters defeat Proposition 19, which would have legalized recreational use of marijuana
- 2010 Earliest evidence of wine making (6100 years ago) found in Armenian cave
- 2011 Potato genome decoded; 39,000 genes
- 2011 U. S. D. A. approves growing genetically engineered sugar beets
- 2011 U. S. D. A. approves Enogen, genetically engineered corn for use in ethanol production
- 2012 Tomato genome decoded; 31,760 genes
- 2013 U. S. Supreme Court rules that farmers must pay Monsanto for each use of its modified soybeans
- 2014 Human genome now estimated at 19,000 genes
- 2014 U. S. D. A. approves genetically engineered potato with less acrylamide, a suspected carcinogen.
- 2016 United Airlines begins use of a biofuel made from feed stocks, natural oils, and agricultural waste
- 2016 World population reaches 7.4 billion

### **PRINCIPAL SOURCES**

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