

**Frequently Asked Questions  
about Food Labeling and Safety**

March 2011

**1. Is biotechnology less safe than other plant breeding techniques?**

No. Biotechnology is safe. It is a refinement of breeding techniques that have been used to improve plants for thousands of years. Biotechnology is simply a more precise science, so scientists are able to isolate a specific gene to make exact changes to a crop (for example, to make a corn plant resistant to the corn borer insect.)

Scientists around the world agree that the risks associated with crop plants developed using biotechnology are the same as those for similar varieties developed using traditional breeding methods.

**2. Are foods derived from biotechnology as safe to eat as foods produced using conventional crops?**

Yes. Federal regulatory agencies ensure the safety of biotechnology foods, and biotech plants and foods are among the most tested in history.

The ultimate scientific authorities recognized in this country, such as the National Research Council of the National Academies of Science<sup>1</sup>, the American Dietetic Association<sup>2</sup>, the American Medical Association<sup>3</sup>, the United Nations Food and Agriculture Organization<sup>4</sup> and the World Health Organization<sup>5</sup> have concluded that foods with biotech-derived ingredients pose no more risk to people than any other foods.

Biotech crops have been cultivated for more than 15 years, and foods derived from agricultural biotechnology have been eaten by billions of people without a single documented health problem. This is a remarkable food safety record, but not surprising, given the pre-market scrutiny and testing of biotech crops and foods.

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<sup>1</sup> *Safety of Genetically Engineered Foods: Approaches to Assessing Unintended Health Effects*, National Academies Press (2004), wherein the National Research Council of the National Academies concluded that genetic engineering "...poses no unique health risks that cannot also arise from conventional breeding and other genetic alteration methods..." [http://www.nap.edu/catalog.php?record\\_id=10977](http://www.nap.edu/catalog.php?record_id=10977)

<sup>2</sup> *J.Am.Diet Assoc.* 2006; 106:285-293.

<sup>3</sup> <http://www.ama-assn.org/ama/no-index/about-ama/13595.page>

<sup>4</sup> <http://www.fao.org/BIOTECH/stat.asp>

<sup>5</sup> FAO/WHO 2000. *Safety aspects of genetically modified foods of plant origin*; [http://www.who.int/foodsafety/publications/biotech/ec\\_june2000/en/index.html](http://www.who.int/foodsafety/publications/biotech/ec_june2000/en/index.html)

### 3. Are crops developed using biotechnology safe for the environment?

Yes. Extensive scientific evaluation worldwide has not found any examples of ecological damage from biotechnology crops. In fact, the National Research Council<sup>6</sup> has documented that, in addition to their safety, biotech crops contribute positively to farm sustainability in the United States, due to their environmental benefits and economic benefits to farmers.

Current crops designed to resist pests and tolerate herbicides have already cut chemical usage on farms significantly. Herbicide-tolerance promotes practices like no-tillage farming that reduce soil erosion, prevent water loss, and even limit release of greenhouse gases.

To ensure that a new plant is safe for the environment, extensive field-testing is conducted under USDA and EPA oversight.

### 4. Are the products of agricultural biotechnology regulated?

Yes. Biotechnology products in the United States are regulated according to the 1986 Coordinated Framework for the Regulation of Biotechnology.

Under the Coordinated Framework, agricultural biotechnology products are regulated by three agencies:

- **U.S. Department of Agriculture** oversees the interstate movement and field-testing of biotechnology-derived plants “regulated articles” to ensure that the environment is protected. A petition for “nonregulated status” must be granted by the USDA prior to commercial growth and sale of any bioengineered crop.
- **The Environmental Protection Agency** is responsible for ensuring that pest-resistant biotech varieties are safe to grow and consume. It regulates environmental exposure to these crops to ensure there are no adverse effects to the environment or any beneficial, non-targeted insects and other organisms.
- **The Food and Drug Administration** imposes on foods developed through biotechnology the same regulatory requirements FDA uses to safeguard all foods in the marketplace. The FDA has both premarket and postmarket authority to regulate the safety and labeling of all foods and animal feed.

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<sup>6</sup> *Impact of Genetically Engineered Crops on Farm Sustainability in the United States*, National Academies Press (2010), wherein the National Research Council of the National Academies concluded that “...crops with traits that provide resistance to some herbicides and to specific insect pests have benefited adopting farmers by reducing crop losses to insect damage, by increasing flexibility in time management, and by facilitating the use of more environmentally friendly pesticides and tillage practices.” [http://www.nap.edu/catalog.php?record\\_id=12804](http://www.nap.edu/catalog.php?record_id=12804)

## 5. Do foods produced using biotechnology require special labeling?

No. The FDA's evaluation of a biotechnology food focuses on its characteristics, not the method used to develop it. A new biotechnology food that is “substantially equivalent” (meaning it has the same chemical composition and nutritional value to conventional varieties) does not require a special label.

The U.S. Food and Drug Administration’s regulations state that requiring the labeling of foods that are indistinguishable from foods produced through traditional methods would mislead consumers by falsely implying differences where none exist.

According to the 2010 Consumer Survey by the International Food Information Council (IFIC), consumer satisfaction with current information on food labels remains high. Only 18 percent of consumers supported additional info on food labels, with only three percent supporting the labeling of biotech foods<sup>7</sup>.

## 6. Do most foods contain biotech ingredients?

More and more farmers in the United States and around the world are turning to biotechnology so they can grow plants that yield more per acre and are resistant to diseases and insect pests while reducing production costs and contributing to more environmentally friendly farming practices.

- In the United States, the majority of all the corn (86 percent), soybeans (93 percent) and cotton (93 percent) are grown using biotechnology<sup>8</sup>.
- In 2010, biotech crop area **globally** grew ten percent to reach 366 million acres<sup>9</sup>.
- In the United States, more than 165 million acres of biotech crops were planted in 2010, up from 158 million acres in 2009<sup>10</sup>. The primary biotech crops grown in the United States are corn, cotton, and soybeans, but also canola, squash, papaya, alfalfa, and sugarbeet.
- A record 15.4 million farmers in 29 countries are using agricultural biotechnology. Ninety percent (14.4 million) of these are resource-poor farmers in developing countries<sup>11</sup>.

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<sup>7</sup> [http://www.foodinsight.org/Resources/Detail.aspx?topic=2010\\_Consumer\\_Perceptions\\_of\\_Food\\_Technology\\_Survey](http://www.foodinsight.org/Resources/Detail.aspx?topic=2010_Consumer_Perceptions_of_Food_Technology_Survey)

<sup>8</sup> <http://www.ers.usda.gov/Data/BiotechCrops/>

<sup>9</sup> <http://isaaa.org/resources/publications/briefs/42/pressrelease/default.asp>

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

## 7. Do biotech foods cause allergies?

To date, no allergic reactions have been attributed to any food product of biotechnology. Every crop produced through biotechnology is screened in advance for its potential to cause allergic reactions, and none have demonstrated any potential to be allergenic.

In fact, advanced techniques are being used to remove allergens from certain foods. Hypoallergenic rice and soybeans have already been developed, and researchers are at work on wheat. The removal of allergens from foods will open up a broader range of products for those with food allergies to enjoy.

## 8. Do farmers use more pesticides when they grow biotech crops?

No. In fact, biotech crops have helped reduce pesticide spraying (1996-2008) by 352 million kg (a decrease of 8.4 percent), and as a result, decreased the environmental impact associated with herbicide and insecticide use on the area planted of biotech crops by 16.3 percent<sup>12</sup>.

In addition, herbicide tolerant biotech crops have led to the adoption of no/reduced tillage production systems. This has reduced soil erosion and improved soil moisture levels.

## 9. Do biotech crops “contaminate” other crops?

No. The fact is, nature has used pollen to carry genes between plants for hundreds of millions of years.

In recent years, some growers (usually of organic crops) have sought to distinguish their produce from conventional agricultural harvests by claiming there are no biotech derived materials present, even though the USDA organic standard allows for substantial material of biotech or conventional origin to be present in organic harvests as long as the organic grower did not knowingly plant biotech derived seed:

“As long as an organic operation has not used excluded methods and takes reasonable steps to avoid contact with the products of excluded methods as detailed in their approved organic system plan, the unintentional presence of the products of excluded methods will not affect the status of the organic operation.”<sup>13</sup>

**Not one organically certified farm has lost its USDA certification** due to the presence of unintended plant DNA (from either conventional or biotech varieties) since the beginning of the Federal National Organic Program.

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<sup>12</sup> <http://www.pg-economics.co.uk/page/19/Biotech-crops-continue-to-make-important-contributions-to-sustainable-farming-and-to-global-food-affordability>

<sup>13</sup> <http://www.ams.usda.gov/NOP/Q&A.html#Production/Handling>

## 10. Can agriculture biotechnology help feed a growing global population?

Yes. Agricultural biotechnology can be a key element in the fight against hunger and malnutrition in the developing world.

According to the United Nations Food and Agriculture Organization, feeding a world population of 9.1 billion in 2050 will require raising overall food production by 70 percent (nearly 100 percent in developing countries)<sup>14</sup>.

To meet this challenge, farmers will need to find ways to grow more food more sustainably.

The U.S. National Academy of Sciences, along with the Royal Society of London, the Brazilian Academy of Sciences, the Chinese Academy of Sciences, the Indian National Science Academy, the Mexican Academy of Sciences and the Third World Academy of Sciences issued a report discussing the role of biotechnology in meeting global food needs. It concluded:

**“GM technology, coupled with important developments in other areas, should be used to increase the production of main food staples, improve the efficiency of production, reduce the environmental impact of agriculture, and provide access to food for small-scale farmers.”<sup>15</sup>**

Biotechnology has already helped increase food and feed production. For example, biotechnology traits have added 74 million tonnes and 79.7 million tonnes respectively to global production of soybeans and corn since its introduction in 1996.<sup>16</sup>

In the United States alone, corn yield has increased 36 percent, soybean yield has increased 12 percent, and cotton yield has increased about 31 percent since 1995, in part due to biotechnology.<sup>17</sup>

### **High-level government officials and ag policy experts agree on agricultural biotechnology’s contribution to increasing agricultural productivity:**

- “We need to do a better job of working with scientists and farmers and political leaders to make sure there is a consistent message that comes from this country about the importance of biotechnology as a strategy for meeting world demand.”

*U.S. Agriculture Secretary Tom Vilsack, February 24, 2011*

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<sup>14</sup> <http://www.fao.org/news/story/0/item/36193/icode/en/>

<sup>15</sup> <http://www.nationalacademies.org/webextra/crops/>

<sup>16</sup> <http://www.pg-economics.co.uk/page/19/Biotech-crops-continue-to-make-important-contributions-to-sustainable-farming-and-to-global-food-affordability>

<sup>17</sup> <http://www.ers.usda.gov/Briefing/Corn/Gallery/Background/CornDataTable.htm>

- “We believe that biotechnology has a critical role to play in increasing agricultural productivity, particularly in light of climate change. We also believe it can help to improve the nutritional value of staple foods.”

*U.S. Secretary of State Hillary Clinton, October 16, 2009*

- “I became a scientist because one of my goals was to develop disease-resistant crops that require fewer chemical inputs than non-resistant crops – disease-resistance that didn’t need a chemical treatment. When that solution came through biotechnology, I considered it a sustainable outcome. Others define ‘sustainability’ as not involving biotechnology. We disagree.”

*Dr. Roger Beachy, NIFA Director and USDA Chief Scientist, February 18, 2010*

- “New technologies - like biotechnology, conservation tillage, drip irrigation, integrated pest management, and new multiple-cropping practices - have improved the efficiency and productivity of agricultural resources over the last decade. Around the world some 14 million small and resource poor farmers in the developing world have already benefited from biotechnology crops.”

*Jose Fernandez, Assistant Secretary, U.S. Department of State, January 21, 2011*

- “Biotech is going to be absolutely critical...what we haven’t done is shown people how different modern biotechnology can make farming.”

*Nina Fedoroff, Science and Technology Advisor to the Secretary of State and to the Administrator of USAID, February 12, 2010*

**FOR MORE INFORMATION:**

[http://en.wikipedia.org/wiki/Genetically\\_modified\\_food\\_controversies](http://en.wikipedia.org/wiki/Genetically_modified_food_controversies)