

BENEFITS OF BIOTECHNOLOGY



UNITED SOYBEAN BOARD



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NEW BIOTECH ADVANCE TO ADD HEART HEALTHY OMEGA-3S TO U.S. DIET

*U.S. Soybean Farmers are Applying the Technology to
Benefit the Environment, Human Health and Feed the World*

ST. LOUIS – A new heart-healthy, essential omega-3 fatty acid is about to improve an American pantry staple: soybean oil. The new scientific advance will move biotechnology onto the average consumer's daily radar. U.S. soybean farmers are also using biotechnology to deliver positive environmental impacts and increase production to feed a growing world population.

INCREASED OMEGA-3 CROPS ON HORIZON

Recently, the U.S. Food and Drug Administration issued a notice confirming that increased omega-3 soybean oil can be used in foods and beverages. Pending similar clearance from the U.S. Department of Agriculture, farmers can plant these new soybeans. The oil will lend itself well to a wide range of food products such as yogurts, salad dressings, breakfast cereals, baked goods, nut products and soups.

Omega-3s are known to protect the heart, and may also play a role in cancer prevention and brain health. While fish oil is the preferred current source of omega-3s, many Americans do not consume the recommended levels. Lead author of an American Heart Association human clinical study presented in 2009, Dr. William Harris, chief of cardiovascular health research and professor of medicine at Sanford School of Medicine, University of South Dakota, states that the increased omega-3 "soybean oil could be an effective alternative to fish oil as a source of heart-healthy omega-3 fatty acids."

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On the horizon are new soybeans that may help deliver more of soy's health benefits (from heart and bone health to some types of cancer prevention to easing symptoms of menopause) without having to dramatically eat more soy. Another soybean may help women and children with iron deficiency anemia absorb nutrients.

SOYBEANS WITH SIGNIFICANTLY LESS PESTICIDES/HERBICIDES

Soybean farmers have made major advances in production systems. Today, 92 percent of U.S. soybeans are derived from biotechnology. Lewis Bainbridge, a United Soybean Board (USB) director from South Dakota, says that farmers have embraced biotechnology and it impacts the average American, "The first generation of biotech soybeans focused on helping farmers control weeds. While this can seem a long way from the grocery store, it means that farmers are able to grow food for the public with significantly less pesticides and herbicides."

Laura Foell, a USB director from Iowa, adds, "As a parent and a farmer, I chose biotechnology because I wanted my kids eating safe, nutritious foods. After all, our vegetable garden for the family's meals is right next to our soybean fields, so it was important to reduce my farm's pesticide use. Biotechnology cut it by half."

BIOTECHNOLOGY CAN HELP FEED THE WORLD

The United Nations recognizes that biotechnology has the potential to improve the quantity and quality of food while protecting safety. It forecast the need to double food production by the year 2030 to prevent global catastrophe. An estimated 800 million people around the world suffer from chronic food shortages, and millions more could go hungry.

"Most farmers are humanitarians," notes Foell. "We want to grow enough food to feed the world. Since we're not making any more land, we have to produce more high-quality food on every inch of farm land we've got."

ABOUT THE UNITED SOYBEAN BOARD

The United Soybean Board (USB) is comprised of 68 farmer-directors who oversee the investments of the soybean checkoff on behalf of all U.S. soybean farmers. To learn more about the science supporting biotechnology's safety and benefits for human health, the environment and farm communities around the world, USB publishes a brochure in 13 languages, available here:

http://www.soyconnection.com/soybean_oil/benefits_of_biotechnology.php.

BIOTECHNOLOGY AT-A-GLANCE

The following pages provide an overview of agricultural biotechnology's role in increasing the global food supply, improving human health and heart health in particular, and promoting environmental sustainability. Take a quick glance here or dig into the area that interests you most.



INTERNATIONAL FOOD SCARCITY

- Crops improved through biotechnology produce higher yields worldwide – while using less land and water – to help feed a hungry and growing world.
- Biotechnology holds great promise for increasing the world's food supply and improving the quality of that food.
- It is estimated that 800 million people around the world suffer from chronic food shortages, and millions more could go hungry due to current and future food crises.
 - 25,000 people die from hunger daily and a child dies every six seconds of malnutrition or starvation.
- Farmers earn higher incomes in every country where biotech crops are grown. Worldwide, biotech crops have increased farmer incomes by an estimated \$4.8 billion to \$6.5 billion in a single year, with most gains experienced by farmers in the developing world.



HEART HEALTH

- While we can't control risk factors like a family history of heart disease, we can take control of other risk factors such as diet and exercise.
- In 2006, 424,892 Americans died of coronary heart disease (CHD), about 20 percent of all deaths in the U.S., making CHD the number one killer of Americans.
- Scientists are using biotechnology to increase the heart-healthy omega-3s in soybean oil – a land-based, renewable resource that food manufacturers will be able to add into a wide range of food products from breakfast bars and yogurts to salad dressings.
- Biotechnology also helps food companies create food products with less of the fats that consumers should limit or avoid for a healthy heart: trans fat and saturated fat.

BIOTECHNOLOGY AT-A-GLANCE

CONTINUED



HUMAN HEALTH

- In the 12-plus years that biotech crops have been commercially grown, there has not been a single documented case of an ecosystem disrupted or a person made ill by these foods.
- Biotech food products derived are exhaustively assessed for safety before their introduction into the food marketplace.
- Humans have been using biotechnology – whether they called it that or not – for more than 10,000 years. That's how humans first developed cheese, bread, wine and beer.
- The next generation of biotech foods is building in direct benefits to consumer nutrition, such as a high-isoflavone soybean, which could help deliver soy's many benefits without people having to dramatically increase the amount of soyfoods they eat.



BEING GREEN

- Crops derived from agricultural biotechnology significantly reduce the emission of carbon dioxide (CO₂) into the environment – the equivalent of removing 6.56 million cars from the roads for one year.
- Additionally, biotechnology results in better soil health and conservation, improved water retention/decreased soil erosion and decreased herbicide runoff from fields into streams.
- Biotech crops have helped farmers eliminate 379 million pounds of pesticide applications globally.

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BIOTECHNOLOGY & INTERNATIONAL FOOD SCARCITY



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TACKLING THE GLOBAL FOOD CRISIS WITH BIOTECHNOLOGY

World hunger is a growing problem, one that **President Barack Obama** has pledged to eliminate among children by 2015.

Other political leaders agree. Former **President Jimmy Carter** declared in 1997, “Responsible biotechnology is not the enemy; starvation is. Without adequate food supplies at affordable prices, we cannot expect world health or peace.” Under **President Ronald Reagan’s** administration, in 1988, Congress established a funding program for biotechnology training. From there, universities began building biotechnology training programs and the industry blossomed.

AN INTERNATIONAL CALL TO RAMP UP BIOTECHNOLOGY

Today, **biotechnology holds great promise for increasing the world’s food supply and improving the quality of that food.** It is estimated that **800 million people around the world suffer** from chronic food shortages, and millions more could go hungry due to current and future food crises. The world population continues to strain food supplies. Currently at 6.7 billion people, the world population is projected to grow to 9 billion by 2040.

UN Secretary General Ban Ki-moon warned in 2008 that **food production would have to rise by 50 percent by the year 2030 to prevent a global catastrophe.** The G8 leaders agreed to work to increase global agricultural yields by providing farmers with greater access to seed varieties developed through biotechnology.

Crops improved through biotechnology produce higher yields worldwide – while using less land and water – to help feed a hungry and growing world.

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BIOTECHNOLOGY & INTERNATIONAL FOOD SCARCITY

CONTINUED

Crops improved through biotechnology produce higher yields worldwide – while using less land and water – to help feed a hungry and growing world. Meanwhile, pests and weeds are two of the biggest destroyers of food crops meant to feed the hungry. Biotechnology gives farmers tools to combat these weeds and pests without using more pesticides.

In the case of soybeans, scientists are even using biotechnology to increase the amount of natural plant compounds (isoflavones) and soluble protein in two soybean varieties, so that people receive more of soy's health benefits and high-quality protein in every bite. Another type of biotech soybean (low-phytate) may help people suffering from iron deficiency anemia – often women and children – absorb more nutrients.

Farmers earn higher incomes in every country where biotech crops are grown.

SUPPORTING GLOBAL FARMERS AND COMMUNITIES

Since the first commercialized crop in 1996, the world's farmers have chosen to consistently increase their plantings of biotech crops by double-digit growth rates every year. In 2007, 12 million farmers in 23 countries – 12 developing and 11 industrialized – planted 252 million acres of biotech crops, primarily soybeans, corn, cotton and canola. Eleven million of these farmers were small or resource-poor farmers in developing countries. Farmers earn higher incomes in every country where biotech crops are grown. **Worldwide, biotech crops have increased farmer incomes by an estimated \$4.8 billion to \$6.5 billion in a single year, with most gains experienced by farmers in the developing world.**

When the farmer benefits, the rural community benefits economically, as dollars are invested locally (in Argentina, for example, 200,000 agricultural jobs were added). Plus, the community has access to a safe, nutritious and sustainable food supply. Although world hunger is a complicated problem, biotechnology can help supply food to feed the world, including those most at risk.

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For more information on Biotechnology and International Food Scarcity, please visit SoyConnection.com.

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BIOTECHNOLOGY & HEART HEALTH



“DO YOU HAVE A FAMILY HISTORY OF HEART DISEASE?”

This is the most common question asked in doctor visits. As well it should be. Heart disease – an umbrella term used to cover a number of diseases that affect the heart – is the leading cause of death in the United States and many other countries, including Canada and England. **While we can't control risk factors like a family history of heart disease, we can take control of other risk factors such as diet and exercise.**

LOWERING YOUR HEART DISEASE RISK

In 2006, an estimated 16.8 million Americans were affected by coronary heart disease (CHD), which includes heart attack and angina pectoris. Also, in 2006, 424,892 Americans *died* of CHD (about 20 percent of all deaths in the U.S.), making **CHD the number one killer of Americans.**

THE GOOD NEWS?

Despite these grim statistics, death rates have decreased by a remarkable 59 percent between 1950 and 1999 and by 33 percent between 1994 and 2004. While much of this is due to improved medical treatment, some of the credit goes to lifestyle changes made by ordinary Americans, like eating a balanced diet, avoiding “bad” fats, trying soyfoods and getting daily exercise to keep weight in check.

Scientists
are using
biotechnology
to increase
cardio-protective
omega-3s in
soybean oil.

ALL ABOUT OMEGA-3s

For a long time, the American Heart Association has recommended eating two servings per week of fish for the omega-3 fatty acids. **Eating fish containing omega-3 fatty acids is associated with a decreased risk of heart disease.** However, many Americans do not like to eat fish twice a week, whether due to taste or concern about mercury levels. Additionally, if everyone became a regular fish eater, our oceans could easily be over-harvested.

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BIOTECHNOLOGY & HEART HEALTH

CONTINUED

To meet this challenge, **scientists are using biotechnology to increase the omega-3s in soybean oil** – a land-based, renewable resource that food manufacturers will be able to add into a wide range of food products from breakfast bars and yogurts to salad dressings. A study presented at the American Heart Association's Scientific Sessions in 2009 showed that this biotech soybean oil was a good source, raising the EPA (a type of omega-3) in volunteers' red blood cells by 17.7 percent.

AVOIDING THE “BAD” FATS

Beyond boosting heart-healthy omega-3s, biotechnology also helps food companies create food products with less of the fats that consumers should limit or avoid: trans fat and saturated fat.

A range of biotech soybean oils are in use at major food companies to create products without trans fat. Different solutions are needed depending on the type of food – for example, a baked muffin vs. a fried tortilla chip. Other oils that seem to offer trans fat replacements sometimes raise unhealthy saturated fats, so it's important to use technology to develop innovative trans fat solutions with soybean oil.

Speaking of saturated fat, soybean oil is naturally relatively low in this type of fat, but there's always room for improvement. Soon, **biotechnology will help create a new soybean oil variety that's even lower in saturated fat for heart health.**

These biotech innovations will make it easier than ever to eat a heart-healthy diet. But, you can start now with lean meats, whole grains, fresh fruit, vegetables and “good” (unsaturated) fats from nuts and legumes like soy.

Biotechnology helps food companies create food products with less harmful fats such as trans and saturated fat.

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For more information on Biotechnology and Heart Health, please visit SoyConnection.com.

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BIOTECHNOLOGY & HUMAN HEALTH



Around the globe, biotech offers a world of promise. When farmers use biotechnology to grow more food with less water and land, consumers benefit with plentiful access to safe, healthy foods. But, it's natural to have questions about technology. Here are a few answers.

IS BIOTECHNOLOGY NEW TO OUR FOOD SUPPLY?

Humans have been using biotechnology – whether they called it that or not – for more than 10,000 years. In its earliest stages, biotechnology was recognized by humans in the form of microscopic organisms in bacteria and fungi that could be used in making food. **That's how humans first developed cheese, bread, wine and beer.**

Humans first developed cheese, bread, wine and beer through biotechnology.

Most foods we eat today come from plants or animals bred for better taste or increased productivity. Traditional crossbreeding produces changes in the genetic makeup of the resulting plant or animal, sometimes over centuries. Modern agricultural biotechnology, however, is different and substantially improved because it is much more precise.

IS IT SAFE?

In the 12-plus years that biotech crops have been commercially grown, there has not been a single documented case of an ecosystem disrupted or a person made ill by these foods.

The safety assessment of foods derived through biotechnology has actually been much more stringent than for conventionally derived products. In the U.S., new foods produced through conventional breeding or introduced into the marketplace from other parts of the world are not required to undergo exhaustive safety assessments. They are assumed to be safe because they are similar to other varieties or because they have been safely consumed elsewhere in the world. On the other hand, **biotech food products derived are exhaustively assessed for safety before their introduction into the food marketplace.**

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BIOTECHNOLOGY & HUMAN HEALTH

CONTINUED

National and international experts agree that biotechnology is safe.

The National Academy of Sciences published a landmark paper in 1987, which concluded that agricultural biotechnology does not create any unique hazards to food production. From 1991 to 2000, three joint United Nations (UN) Food and Agriculture Organization (FAO)/World Health Organization (WHO) consultations concluded that biotechnology has had a long history of use in food production and processing. Moreover, the UN FAO/WHO noted that **biotechnology has the potential to rapidly improve the quantity and quality of food and does not result in food that is less safe than food produced using conventional practices.** In 2008, the European Commission concluded that no demonstration of any negative health effect of biotech food products has ever been reported, and the use of more precise technology and its greater regulatory scrutiny very likely makes biotech foods even safer than conventional ones.

WHAT DO BIOTECH FOODS OFFER THAT CONVENTIONAL FOODS DO NOT?

The first generation of biotech foods focused on helping farmers grow pest or weed-resistant crops. While this can seem a long way away from the grocery store, it means that **farmers are able to grow food for U.S. and international consumers with significantly less pesticides.**

The next generation of biotech foods is building in direct benefits to consumer nutrition. This includes reducing harmful fats and increasing heart-healthy omega-3 fatty acids in the soybean oils used to bake and fry many foods. For more information, see our **Heart Health** page.

Biotechnology is also leading to a high-isoflavone soybean, which could help deliver soy's many benefits (from heart and bone health to some types of cancer prevention to reducing symptoms of menopause) without people having to dramatically increase the amount of soyfoods they eat. A low-phytate soybean may help people with iron deficiency anemia, especially women and children, absorb the nutrients they need.

The next generation of biotech foods is building in direct benefits to consumer nutrition.

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For more information on Biotechnology and Human Health, please visit SoyConnection.com.

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BIOTECHNOLOGY & BEING GREEN



Everywhere you look, from the biggest businesses to everyday families, people are making an effort to be “green” – whether it’s turning off lights and computers when leaving the office, recycling at home or adopting agricultural biotechnology as a farmer.

Farmers strive to find ways to provide enough food for current and future generations, while also being stewards of the environment. Biotechnology is a powerful way to accomplish feeding the world in a sustainable manner.

NO MORE PLOWING THE LAND ON TODAY’S SOY FARMS

Crops derived from agricultural biotechnology significantly reduce the emission of carbon dioxide (CO₂) into the environment.

Biotech crops like soybeans that are resistant to herbicides allow farmers to almost completely eliminate plowing on their fields, resulting in many environmental benefits: **better soil health and conservation, improved water retention/decreased soil erosion and decreased herbicide runoff.**

The practice of tillage – agricultural preparation of the soil by plowing, ripping or turning it – has practically become a thing of the past on U.S. soybean farms, largely thanks to herbicide-tolerant

crops developed through biotechnology. With no-till farming, the usage of machinery in fields and farms is drastically reduced, resulting in significantly reduced greenhouse emissions from farm equipment.

The reduction in CO₂ emissions from less plowing is two-fold: first, if you spray fewer pesticides, you drive your farm equipment less often, saving on fuel, and second, not plowing leads to an increase in the amount of carbon held in the soil rather than released into the environment. These factors contributed to a combined reduction equal to a 14.76 billion kg of CO₂ in 2006. **This is the equivalent of removing 6.56 million cars from the roads for one year.**

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BIOTECHNOLOGY & BEING GREEN

CONTINUED

With biotechnology, farmers have eliminated 379 million pounds of pesticide applications globally.

DECREASING PESTICIDE USE

Since biotech crops were introduced, farmers have eliminated 379 million pounds of pesticide applications globally. One reason is biotechnology allows farmers to more accurately target the specific pests attacking their farms, reducing the need for pesticides.

IMPROVING WATER QUALITY

Decreasing herbicide and pesticide usage on biotech crops means less runoff of these chemicals from fields to streams and improved water quality. Biotechnology is also being used in the development of low-phytate soybeans and corn. The resulting animal feed will allow livestock producers to reduce phosphorus pollution and improve water quality.

BIODIVERSITY

Sustainable agriculture encourages healthier soil, air and water, and also the growth of habitats with different types of wildlife. For example, songbirds return to fields in increasing numbers as biotech crop land increases.

Biotechnology provides an essential toolbox of solutions to ensure environmental sustainability. Biotech crops can help global farmers grow enough food at a good income so they stay in business, while saving water, energy, raw materials and reducing emissions and waste. As the world's industries look at ways to become greener, agriculture is leading the way with biotechnology. And it all starts at home: farmers live off the land and seek to build a greener future for generations to come.

Biotechnology uses fewer resources such as water and land, promoting growth of wildlife habitat.

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For more information on Biotechnology and Being Green, please visit SoyConnection.com.

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ASK THE EXPERT



Dr. CS Prakash of Tuskegee University is widely known as one of the world's foremost experts in the benefits and safety of agricultural biotechnology.

As a professor of plant molecular genetics at Tuskegee University in Alabama, Dr. Prakash oversees research on food crops of importance to developing countries and the training of scientists in plant biotechnology. His Web site – www.agbioworld.org – has become an important portal for scientists, policy makers, activists and journalists. Dr. Prakash has served on the USDA's Agricultural Biotechnology Advisory Committee and sits on the Advisory Committee for the Department of Biotechnology for the government of India.

The United Soybean Board asked Dr. Prakash to share some of his thoughts on what's most important to know about biotech crops and foods. Below are a few of his favorite facts.

IN A WORLD WITHOUT BIOTECHNOLOGY:

- World prices of corn, soybeans and canola would be 5.8, 9.6 and 3.8 percent higher, respectively.
- Prices of soybean meal and oil would be 9 percent higher.
- Global production of grains and oilseeds would fall by 17.7 million tons and global consumption by 15.4 million tons.
- Without production gains, 100 million acres of more crop land would be needed.

Source: Graham Brookes et al.

A LOOK AT THE U.S.

- More than 85 percent of U.S. acreage is planted with biotech varieties. Yields have increased 36 percent since 1995, the last year before biotech varieties were commercially planted.
- Looking at U.S. soybean acreage in particular, nearly 92 percent of U.S. soybean acreage is now planted with biotech varieties and soybean yields have increased 12 percent since 1995.
- Soybean farmers have saved nearly a billion tons of precious top soil from being eroded by using no-till farming. Biotechnology makes feasible the widespread adoption of no-till farming.

Source: United States Department of Agriculture's National Agricultural Statistics Service (USDA NASS)

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ASK THE EXPERT

CONTINUED

A LOOK AT THE U.S. (CONTINUED)

- By adopting conservation tillage, U.S. farmers have reduced soil erosion by 1 billion tons per year. As of 2002, farmers have also accrued \$3.5 billion savings in water treatment and storage, waterway maintenance, navigation, fishing, flooding and lost recreation costs.

Source: ConservationInformation.org

BIOTECH CROPS – A GLOBAL PHENOMENON

- Biotech crops are grown in 25 countries on 2 billion acres worldwide.
- Biotech maize (corn) is grown on 260,000 acres in Europe including Spain, Czech Republic, Romania, Portugal, Germany, Poland and Slovakia.
- By 2007, biotechnology helped produce an additional 68 million tons of soybeans and 63 million tons of corn, enough to feed about 402 million people for a year.
- Biotech crops are grown by more than 12 million poor farmers in developing countries such as India, China, South Africa, Argentina and the Philippines. This helps sustainable development by providing US\$44 billion in additional income (1996-2007), 44 percent due to yield gains and 56 percent due to reduced production costs.

Source: [International Service for the Acquisition of Agri-biotech Applications](http://InternationalServicefortheAcquisitionofAgri-biotechApplications)

INTERNATIONAL CASE STUDY

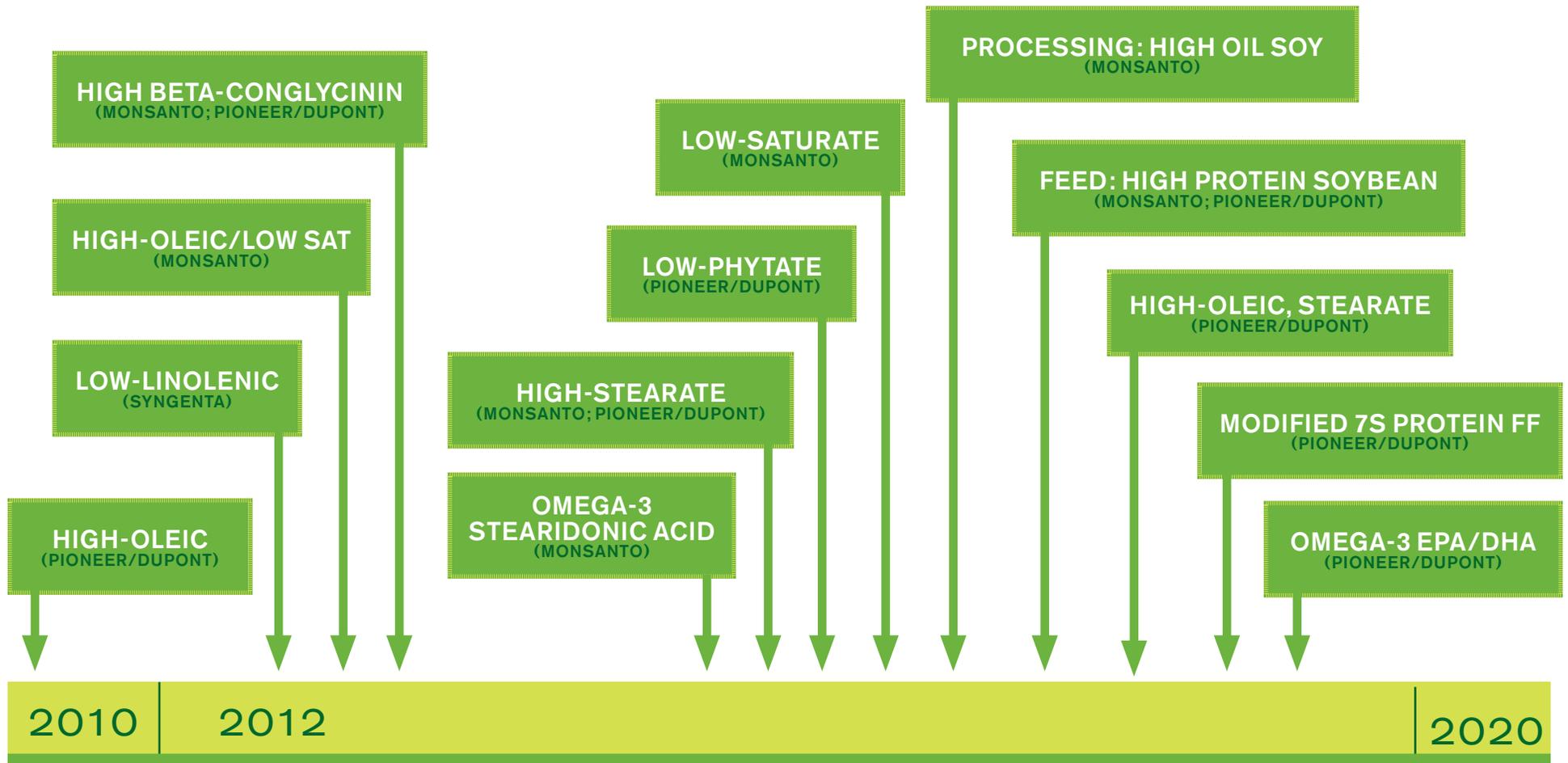
- Biotechnology can make a difference in the developing world, when more crops can be grown on less land with less water, pesticides and fuel costs. An excellent example is biotech cotton in India.
- At 81 percent of all cotton grown in India, biotech cotton has provided \$2 billion in additional income to more than 5 million farmers and textile workers.
- Yield increased by 31 percent, insecticide use decreased by 39 percent and profitability increased by 88 percent to US \$100 per acre.
- Pesticide sprays decreased from an average of 12 to now just three per year.

Source: [International Service for the Acquisition of Agri-biotech Applications](http://InternationalServicefortheAcquisitionofAgri-biotechApplications).

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SOYBEAN INDUSTRY PORTFOLIO

PIPELINE OF BIOTECH EVENTS AND NOVEL TRAIT RELEASES FOR QUALITY/FOOD TRAITS



Turn over for benefits details.

QUALITY/FOOD TRAITS

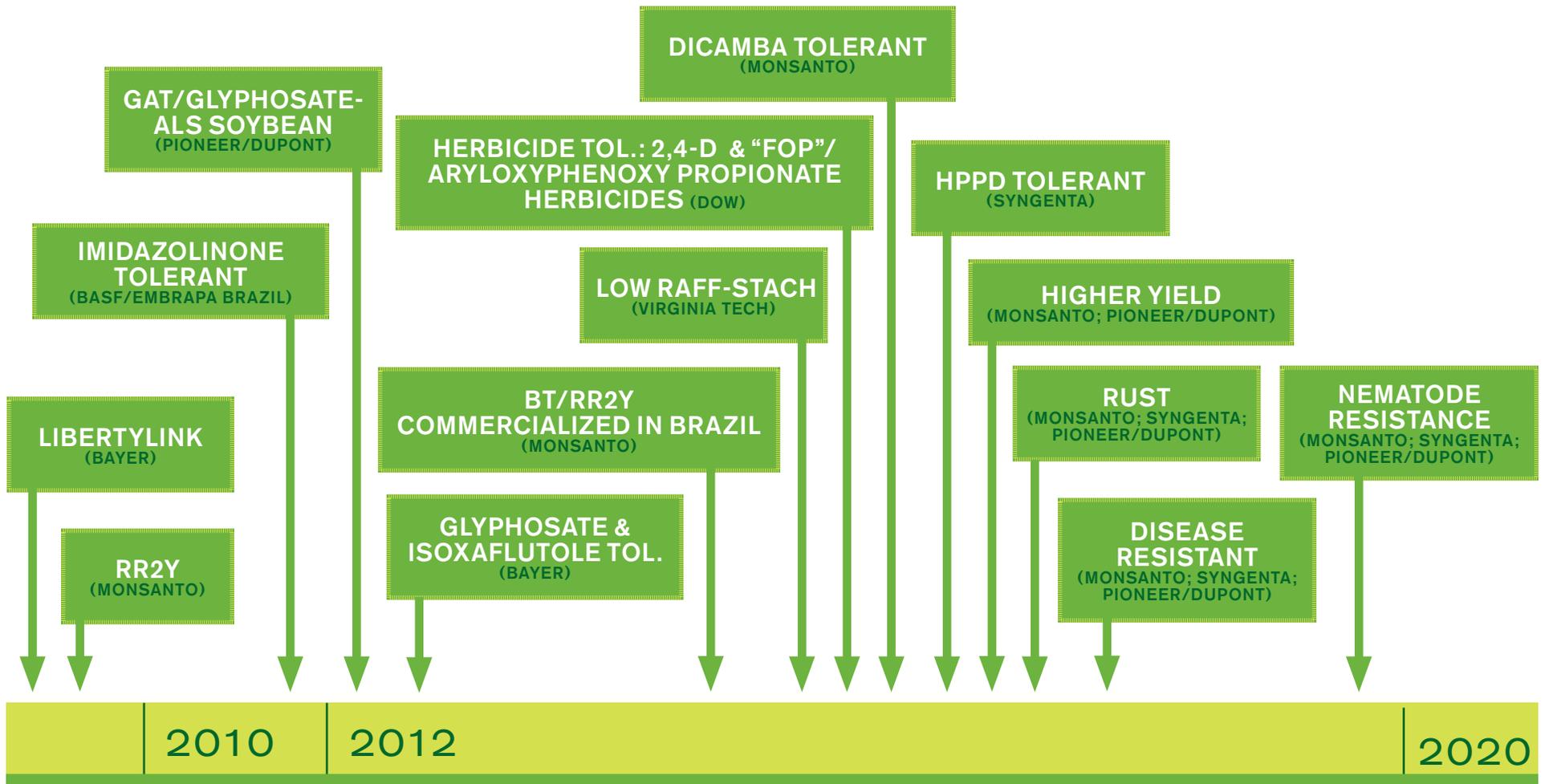
BENEFITS DETAILS

- **High-Oleic.** Oil made from these beans is an alternative to partially hydrogenated oils for edible applications where increased stability, no hydrogenation and a lower trans fat content is desired.
- **Low-Linolenic.** Oil made from these beans reduces the need for hydrogenation. Foods cooked in this oil have low to no trans fat, increased oxidative stability, good end product flavor and excellent shelf life characteristics.
- **High-Oleic/Low-Saturates.** The high-oleic content provides an alternative to partially hydrogenated oils. The lower saturated fat component is designed to further reduce cardiovascular health risk.
- **High Beta-Conglycinin.** Increased levels of this protein provide greater emulsion stability, useful for protein containing drinks. They may also provide physiological benefits of lowering cholesterol and triglycerides.
- **Low Phytate.** Soybean meal from these beans will contain a more digestible form of phosphorus, reducing phosphate pollution from animal agriculture. Increased bioavailability of several minerals (i.e. zinc, iron) and may be used to alleviate human nutritional deficiencies in some developing countries.
- **Omega-3, Stearidonic Acid.** This omega-3 fatty acid can help protect people from heart disease. It is readily converted to EPA and to a lesser extent DHA. These oils are typically found in fish, but with decreasing fish supplies and increasing cost, an alternative plant derived source of this important fatty acid is desirable.
- **High-Stearate.** This viscous oil is a healthier solution for food products requiring solid fat such as margarines and shortenings. Stearate is a saturated fatty acid, but has a lower impact on blood cholesterol levels than other saturated fatty acids, such as palmitic acid.
- **Processing: High Oil Soy.** These beans may be economically advantageous due to their higher oil content.
- **Low-Saturate.** Decreased level of saturated fat aimed at reducing cardiovascular health risk.
- **Feed: High Protein Soybean.** Increased meal quality with a reduced need to add synthetic amino acids to feed rations or increase possibility of using full-fat soybean rather than meal. Soybean with better digestibility can increase food energy and decrease pollutants.
- **High-Oleic, Stearate.** The high-oleic/high-stearic oils will be stable oils with added functionality for the preparation of many foods where a certain amount of solids are needed.
- **Modified 7S Protein FF.** Reduction of this protein is predicted to reduce human allergenicity to soy protein. In addition it may be a preferred meal ingredient for aquaculture feed particularly for salmonids.
- **Omega-3 EPA/DHA.** EPA and DHA are omega-3 fatty acids that can help protect people from heart disease. These oils are typically found in fish. With decreasing fish supplies and increasing cost, an alternative plant derived source of this important fatty acid is desirable.

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SOYBEAN INDUSTRY PORTFOLIO

PIPELINE OF BIOTECH EVENTS AND NOVEL TRAIT RELEASES FOR AGRONOMIC TRAITS



Turn over for benefits details.

- **Liberty Link.** Tolerant to Ignite and Liberty (glufosinate) herbicide.
- **RR2Y.** New version of Round Up (glyphosate) resistant plants with predicted higher yields, compared to the original Round Up Ready soybeans.
- **Imidazolinone Tolerant.** Imidazolinone is a broad-spectrum herbicide.
- **GAT (Glyphosate ALS Tolerance).** The GAT trait is aimed at achieving both glyphosate and ALS crop safety.
- **Glyphosate and isoxaflutole tolerance.** Both herbicides are broad spectrum. Technology developed by Bayer and MS Technologies.
- **Bt/RR2Y.** Bt technology stacked with glyphosate tolerance. This is being commercialized only in Brazil.
- **Low Raff-Stach.** Raffinose and stachyose are anti-nutritional oligosaccharides for non-ruminant animals. Decreasing levels of these two compounds may result in a more digestible feed component.
- **Herbicide tol: 2,4-D and “fop”(aryloxyphenoxypropionate) herbicides.** Offers broadleaf tolerance 2,4-D and tolerance to grasses via fop; herbicides.
- **Dicamba Tolerant.** Wide broadleaf weed spectrum including glyphosate-tolerant weeds.
- **HPPD Tolerant.** Inhibition of this enzyme results in wide spectrum weed control.
- **Higher Yield.** Heritable yield continues to be a valued trait for soybean producers.
- **Rust.** Transgenic resistance and/or tolerance to Asian Soybean Rust.
- **Disease Resistant.** Breeding and transgenics may be used to increase resistance to diseases such as aphids, Asian Soybean Rust and other soybean diseases.
- **Nematode Resistance.** Monsanto intends to stack SCN resistance with RR2Y.