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BIOTECHNOLOGY: WHERE FOOD MEETS INNOVATION



MEETING CONSUMER DEMAND FOR TRANSPARENCY

Biotechnology and genetically modified organisms (GMOs) are capturing the attention of food producers and consumers alike. Research shows that U.S. consumers demand greater access to information about where their food comes from, what’s in it and how it was made and sold. The food industry responded in 2014 with SmartLabel™, a technology introduced by food manufacturers and retailers that provides product information in a clear, accurate and accessible format. By 2017, SmartLabel is expected to offer detailed information on more than 34,000 products.¹ As the food industry continues to

adopt SmartLabel, consumers will be able to efficiently get answers to the questions they have about products when they need it – whether it’s through a QR code, a website or a customer service number or desk.

Over and above, the soybean industry understands that the food industry’s number one priority is supplying food products that are safe. When it comes to foods developed through modern biotechnology, the use of genetically modified (GM) ingredients are safe for the people and planet, and offer many benefits.



BIOTECHNOLOGY IS SAFE




Society has been manipulating plant genetics throughout the last century,³ and foods developed through modern biotechnology have been on grocery store shelves for 20 years. In fact, 70 to 80 percent of the food eaten in the United States contains GM ingredients.⁴

Traditional breeding techniques may select for a more flavorful tomato, a seedless watermelon or a higher-yielding corn variety. Transgenic plants, or genetically modified organisms, refer to a relatively recent technology that allows the transfer of one or a few specific gene sequences within an organism or closely related organisms. This technique has resulted in cotton varieties that resist insect pressure, soybeans with an improved fatty acid profile and even a disease-resistant papaya developed after a virus outbreak nearly wiped out entire Hawaiian plantations.

Many organizations endorse the responsible use of biotechnology to enhance food production:

- World Health Organization⁵
- Food and Agriculture Organization of the United Nations⁶
- U.S. National Academy of Sciences⁷
- American Medical Association⁸
- U.S. Food and Drug Administration⁹
- Academy of Nutrition and Dietetics⁹





“We will continue to advocate for the continued safe and effective use of agricultural biotechnology to increase the food supply while lowering cost. And we will continue to engage in an informative dialogue with our consumers so that they understand the safety, prevalence and benefits of GM technology and can make informed choices for themselves and their families.”¹⁰

-Grocery Manufacturers Association

DID YOU KNOW?

Higher-yielding crops developed through agricultural biotechnology can help meet the United Nations' estimated need for a 50% increase in world food production by 2030.¹¹



AGRICULTURE EMBRACES BIOTECHNOLOGY

When herbicide-tolerant crops became available to farmers, it soon became the fastest adopted crop technology in recent history.¹² And, for good reason. The benefits to farmers were tremendous - reduced herbicide applications, decreased weed and insect pressure, increased yields and profits, as well as a plethora of environmental benefits.¹³ Now, after 20 years since the introduction of the first GM crop, farmers still believe in biotechnology. Advances in the field aim to increase nutritional benefits for consumers, protect against extreme weather conditions and address malnutrition around the globe.

Farmers are the quintessential stewards of the land. Many will tell you their goal is to improve the soil on their farms for future generations. Biotechnology can contribute to that important goal of using environmentally sustainable farming practices.

- ◆ Reduction of pesticides allows for use of more environmentally-friendly herbicides.¹⁴
- ◆ Biotechnology preserves and improves soil quality through use of conservation tillage and no-till practices.¹¹
- ◆ Biotechnology reduces nutrients in farm runoff, increasing crops' fertilizer efficiency and conserving topsoil.¹⁴
- ◆ Agriculture's "carbon footprint" is reduced. Biotechnology reduced 58.9 billion pounds of carbon dioxide emissions between 1996 and 2012, equivalent to taking 11.8 million cars off the road for one year.^{11,14}



"On my Wisconsin farm, I plant both GMO and non-GMO seed. As an industry, we've been growing GMO seed for more than 20 years, and testing GMOs for more than 25 years. GMO seed is safe and enables us to achieve higher yields, use fewer chemicals and reduce carbon emissions – benefiting the environment."

–Nancy Kavazanjian, United Soybean Board Farmer- Director



QUALISOY SUPPORTS INNOVATION

QUALISOY® is an independent third party collaboration that promotes the development of and helps build the market for the latest soybean traits.

Products like U.S.-grown high oleic soybean oil and other trait-enhanced oils in the pipeline are largely developed through modern biotechnology. Biotechnology can add value for the consumer, such as a higher proportion of healthful fats, which support heart, brain and immune health. It also contributes improved functionality traits that directly benefit the food industry, including extended fry life and shelf life, and the ability to produce products that meet consumer expectations for flavor, color and texture.

◆ Advanced breeding and modern food production contributed to the development of canola, soybean and sunflower oils without trans fat. For example, high oleic soybean oil is commercially available and offers an improved fat profile – a greater amount of monounsaturated fats and lower saturated fat – as compared to conventional soybean oil.¹⁵

◆ Biotechnology can increase levels of the specific omega-3 fats that are most likely to lower the risk of chronic diseases.¹⁶ For example, a soybean oil is currently in development to increase the content of stearidonic acid (SDA), an omega-3 fatty acid. This SDA-rich soybean oil will provide the food industry with a functional ingredient that can be added to a variety of foods, such as soups, sauces, beverages, yogurts and breads. Incorporating this type of omega-3 in foods could have tremendous public health benefits.¹⁷⁻¹⁸

“The reality is that genetically engineered crops are safe, provide some benefits, and are an important part of the world’s agricultural system now and in the future.”¹⁹

- Gregory Jaffe, director of biotechnology at the Center for Science and the Public Interest





References:

1. “SmartLabel: A Simple Solution.” <http://www.gmaonline.org/issues-policy/health-nutrition/smartlabeltm-consumer-information-transparency-initiative/>. SmartLabel Transparency Initiative. Grocery Manufacturers Association. 2016.
2. “Frequently asked questions on genetically modified foods.” http://www.who.int/foodsafety/areas_work/food-technology/faq-genetically-modified-food/en/. Food Technology Program. World Health Organization. 2016.
3. “Biotechnology: Answers to Common Questions.” https://fbns.ncsu.edu/extension_program/documents/biotech_QA.pdf. North Carolina College of Agriculture & Life Sciences. 2016.
4. “Grocery Manufacturers Association Launches www.FactsAboutGMOs.org.” <http://www.gmaonline.org/news-events/newsroom/grocery-manufacturers-association-launches-wwwfactsaboutgmosorg/>. Grocery Manufacturers Association (GMA). Sept. 18, 2013.
5. “Modern food biotechnology, human health and development: an evidence-based study.” http://www.who.int/foodsafety/publications/biotech/biotech_en.pdf. World Health Organization. 2005.
6. “FAO Statement on Biotechnology.” <http://www.fao.org/biotech/fao-statement-on-biotechnology/en/>. Food and Agriculture Organization of the United Nations. March 2000.
7. “Safety of Genetically Engineered Foods: Approaches to Assessing the Unintended Health Effects.” http://www.nap.edu/openbook.php?record_id=10977&page=8. The National Academies Press. 2004.
8. “Report 2 of the Council on Science and Public Health: Labeling of Bioengineered Foods.” <http://download.ama-assn.org/resources/doc/csaph/a12-csaph2-bioengineeredfoods.pdf>. American Medical Association. 2012.
9. “The Scientific Consensus and GMOs.” <https://gmoanswers.com/studies/scientific-consensus-and-gmos>. GMO Answers. August 1, 2014.
10. “Grocery Manufacturers Association Launches www.FactsAboutGMOs.org.” <http://www.gmaonline.org/news-events/newsroom/grocery-manufacturers-association-launches-wwwfactsaboutgmosorg/>. Grocery Manufacturers Association (GMA). Sept. 18, 2013.
11. “A Guide to Understanding Modern Agricultural Biotechnology.” <http://www.foodinsight.org/LinkClick.aspx?fileticket=%2BcSNtZSVBbA%3D&tabid=1478>. International Food Information Council Foundation. 2014.
12. “The potential impacts of mandatory labeling for genetically engineered food in the United States.” CAST Issue Paper Number 54. April 2014.
13. “Biotechnology Frequently Asked Questions (FAQs).” <http://www.usda.gov/wps/portal/usda/usdahome?navid=AGRICULTURE&contentid=BiotechnologyFAQs.xml>. United States Department of Agriculture. February 8, 2016.
14. “Global Status of Commercialized Biotech/GM Crops: 2013. ISAAA Brief No. 46. ISAAA: Ithaca, NY.” <http://www.isaaa.org/resources/publications/briefs/46/topfacts/default.asp>. James, Clive. 2013.
15. Boyle and Anderson, Thomson and Wadsworth. Personal Nutrition, 6th ed. http://www.uccs.edu/Documents/danderso/fats_oils.pdf. 2007.
16. “Omega-3 fatty acids.” <http://umm.edu/health/medical/altmed/supplement/omega3-fatty-acids#ixzz2dygJvVyU>. University of Maryland Medical Center. 2013.
17. Burdge G. “Alpha-linolenic acid metabolism in men and women: nutritional and biological implications.” Curr Opin Clin Nutr Metab Care. 2004;7(2):137-144.
18. Pawlosky RJ, Hibbeln JR, Novotny JA, Salem N. “Physiological compartmental analysis of alpha-linolenic acid metabolism in adult humans.” J Lipid Res. 2001;42(8):1257-65.
19. “Industry expert claims GMOs are safe.” <http://newhope360.com/breaking-news/industry-expert-claims-gmos-are-safe>. Engredea News & Analysis. April 21, 2014.

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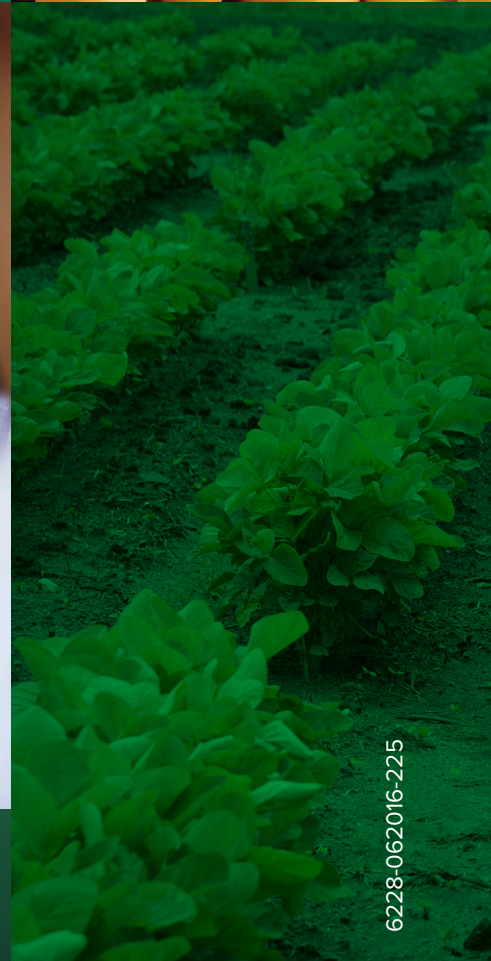
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16305 Swingley Ridge Road,
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