



Mr. Fred DeLuca, CEO
Subway
325 Bic Drive
Milford, Connecticut 06461-3059

March 20, 2015

Dear Mr. DeLuca,

The undersigned food safety, consumer, parent and environmental organizations would like to acknowledge Subway's efforts to expand its offerings of healthier menu options, including fresh fruits and vegetables. **We ask Subway, as one the nation's top restaurant chains serving pre-cut apple slices, to commit to not use genetically engineered apples in its products.** This decision would be consistent with your company's commitments to offer healthier and more sustainable options. In addition, Subway would be taking on additional risks, from consumer rejection to possible unintended health or environmental impacts, without any real benefit, by sourcing GMO apples.

As you may know, despite consumer and apple grower opposition, the new genetically engineered Arctic Apple® was recently approved by the USDA to enter the U.S. market. 93 percent of Americans believe that genetically engineered foods should be labeled¹, however the GMO apple will not be required to be labeled as such and will not have undergone independent safety testing—regulators will rely on the company's own assessment that the apple is safe for human consumption.²

This unlabeled and unregulated GMO apple was genetically engineered via a new, virtually untested experimental technique called RNA interference (RNAi) which many scientists are concerned may have negative unintended impacts on human health and the environment.³ Apple growers and consumer alike have said they don't need or want this GMO apple, but it could end up in everything from baby food to school lunches to fast food snack packs, posing risks to our health, our environment and apple farmers across the US.⁴

The Arctic Apple® was not designed for increased nutritional value, but for purely cosmetic purposes—it was genetically engineered to lack the enzymes which cause apples to brown when cut. However, browning in apples can be prevented naturally by applying lemon juice or another source of vitamin C, making this new risky genetically engineered apple unnecessary. In fact, this is the preferred method used by Crunch Pak, the largest processor and supplier of sliced apples in the U.S. market.⁵ Crunch Pak has stated that its current methods are more effective at preventing browning over a longer period than Okanagan Specialty Fruit's technology, making this GMO apple completely unnecessary.⁶

In addition, industry leaders, including McDonald's and Gerber, have already made statements that they do not plan on selling the GMO apple.^{7,8}

Genetically engineered apples pose numerous human health, environmental and economic concerns that are of concern to consumers and other stakeholders:

2150 Allston Way • Suite 240 • Berkeley, CA 94704-1379
510.900.3150 • 510.900.3155 fax • 866.217.8499 toll free
1100 15th Street, NW • 11th Floor • Washington, DC 20005
202.783.7400 • 202.783.0444 fax • 877.843.8687 toll free • www.foe.org

Health and environmental concerns:

Potential increase in pesticide use:

Conventionally produced, non-GMO apples already carry some of the highest levels of toxic pesticide residues of any fresh produce.^{9,10} These pesticides, including organophosphates, are linked to adverse health impacts including hormone disruption, reproductive disorders and even developmental disorders including ADHD^{11, 12} and have been found in 90% of Americans by the Centers for Disease Control, with the highest levels found in children.¹³ The Arctic Apple[®] has been engineered to lack the natural browning enzyme that may help fight diseases and pests,¹⁴ meaning that these apples might be more susceptible to diseases and pests, and therefore farmers may have to use even more pesticides in growing this apple. Pound for pound, children eat more food and have higher levels of pesticide exposure -- and we know that early life exposures to toxic pesticides can be especially harmful because children's brains and bodies are still developing and can be irreversibly impacted. Increased pesticide use will also mean that communities and ecosystems surrounding GMO apple orchards will also face increased exposures to potentially harmful pesticides.

RNAi genetic engineering poses safety concerns:

The Arctic Apple[®] was genetically engineered using a new and poorly studied genetic engineering technique called RNA interference (RNAi), which has raised serious concerns within the scientific community and poses novel and unpredictable environmental and food safety risks, beyond those normally considered for genetically engineered crops.¹⁵ Recent research has shown that double stranded RNA (dsRNA) used in RNAi can remain intact through the digestion process, can enter the bloodstream and cells and may affect gene expression in ways that have not yet been investigated.¹⁶

The mechanisms of RNAi, and in particular the mode in which RNAi products can be toxic to consumers, are currently the subject of intense scientific investigation and speculation. Given the early stage of scientific investigation, no risk assessment can be comprehensive.¹⁷ It is unclear what the unintended impacts on human health might be, and according to Dr. Judy Carman, whose research focuses on genetically modified plants, "we won't know (about the impacts) until we do thorough assessments, and these assessments have not yet been done."¹⁸

USDA scientists are also concerned about the unintended risks of RNAi products when used for pest control purposes. In a recent study, several USDA researchers cited potential hazards from RNAi-based GMO crops including silencing of unintended genes in target and non-target organisms, and possible impacts on these organisms' immune systems.¹⁹ The USDA approved the GMO apple despite the fact that the EPA's Scientific Advisory Panel raised questions about this technology, when used for pest control purposes, and said that more data are needed to answer critical questions.²⁰

Economic risks for farmers and companies selling apple products:

Genetically engineered apples may be rejected by consumers domestically and internationally. As with other genetically engineered products, this new GMO apple will not be required to be labeled, and it has been opposed by major apple trade associations including the Northwest Horticultural Council (representing Washington apple growers) and the British Columbia Fruit Growers Association that fear the introduction of this GMO fruit would force them to implement costly measures to protect against cross-contamination and would decrease sales to foreign markets where GMO labeling and other restrictions exist.^{21,22}

It is clear that this new GMO apple may pose numerous risks and has no benefits to companies like like Subway. That's why the following undersigned organizations are urging Subway and other restaurants, retailers and food companies to commit to not sell this unnecessary and potentially problematic GMO apple.

We will highlight companies that commit to this policy on our websites, in social media, and in the press, so that consumers can see which restaurant and food companies have made a commitment to not use this controversial new GMO apple.

Please contact Dana Perls, Food and Technology Campaigner at Friends of the Earth at foodtech@foe.org by April 3, 2015 so that we may discuss how Subway can demonstrate its leadership in this area.

Thank you for your attention to this critical issue. We look forward to highlighting Subway's commitment to ensuring the sustainability and safety of one of our most nutritious foods.

Sincerely,

Dana Perls
Food and Technology Policy Campaigner
Friends of the Earth

Alisa Gravitz
President and CEO
Green America

Michael Hansen
Senior Staff Scientist
Consumers Union

Nicole McCann
Food Campaigns Director
GMO Inside

Jaydee Hanson
Senior Policy Analyst
Center for Food Safety

Kelly Herman
Program Director
Healthy Child Healthy World

Scott Faber
Executive Vice President of Federal Affairs
Environmental Working Group

Ronnie Cummins
International Director
Organic Consumers Association

Dave Murphy
Founder/Executive Director
Food Democracy Now!

Judy Hatcher
Executive Director
Pesticide Action Network

Wenonah Hauter
Executive Director
Food & Water Watch

Becky Bond
Political Director
CREDO

CC:

Elizabeth Stewart, Marketing Director
Christopher Carroll, Senior Vice President of Marketing

-
- ¹ *National Survey of Healthcare Consumers: Genetically Engineered Food*. Thomson Reuters. Oct. 2010. Available at http://www.factsforhealthcare.com/pressroom/NPR_report_GeneticEngineeredFood.pdf
- ² Pollack, A. (2012, July 12). "That fresh look, genetically buffed". Retrieved June 14, 2013, from New York Times website: http://www.nytimes.com/2012/07/13/business/growers-fret-over-a-new-apple-that-wont-turn-brown.html?pagewanted=all&_r=1&
- ³ Heinemann, Jack. A., et al. (2013, May). "A comparative evaluation of the regulation of GM crops or products containing dsRNA and suggested improvements to risk assessments". *Environment International*. Vol 55: 43-55. <http://www.sciencedirect.com/science/article/pii/S0160412013000494>
- ⁴ Pollack, A. (2012, July 12).
- ⁵ Kraemer, Kara "Cashmere-based Crunch Pak beats out Chiquita for sliced apple market." Examiner.com, 16 Sept 2011.
- ⁶ Pollack, Andrew. "Growers Fret Over a New Apple That Wont Turn Brown." The New York Times, 13 July 2012.
- ⁷ Johnson-Askew, Wendy. (2013) Personal Communication. Nestlé Nutrition U.S. http://libcloud.s3.amazonaws.com/93/a7/5/3312/Friends_of_the_Earth_response_10_31_13.pdf
- ⁸ Scandridge, Jill. (2013, November) Personal communication. McDonald's USA. http://libcloud.s3.amazonaws.com/93/78/b/3309/McDonalds_response.pdf
- ⁹ "Apples Top EWG's Dirty Dozen". (2013, April 22). Environmental Working Group. <http://www.ewg.org/release/apples-top-ewgs-dirty-dozen>
- ¹⁰ Kilman, Scott. "Pesticide Residues Taint Apples." *Wall Street Journal*. N.p., 13 June 2011. Available at <http://online.wsj.com/article/SB10001424052702303848104576381671610587348.html>
- ¹¹ "Organophosphates & Childhood Exposure." Pesticide Action Network. <http://www.panna.org/resources/organophosphates>
- ¹² Laskawy, T. "Biotech's Latest Creation: Franken-Apples Coming to a Store Near You." *Grist*. <http://grist.org/article/2010-08-12-study-kids-exposure-to-toxic-pesticides-may-be-underestimates/>
- ¹³ "CDC Body Burden Study Finds Widespread Pesticide Exposure." July 22, 2005. Pesticide Action Network. http://www.panna.org/legacy/panups/panup_20050722.dv.html
- ¹⁴ Mayer, Alfred M. "Polyphenol Oxidases in Plants and Fungi: Going Places? A Review." *Phytochemistry* 67.21 (2006): 2318-331.
- ¹⁵ Heinemann, Jack. A., et al. (2013, May). "A comparative evaluation of the regulation of GM crops or products containing dsRNA and suggested improvements to risk assessments". *Environment International*. Vol 55: 43-55. <http://www.sciencedirect.com/science/article/pii/S0160412013000494>
- ¹⁶ Zhang et al. (2012) "Exogenous plant MIR168a specifically targets mammalian LDLRAP1: evidence of cross-kingdom regulation by microRNA". *Cell Research*. 22:107-126. <http://www.nature.com/cr/journal/v22/n1/pdf/cr2011158a.pdf>
- ¹⁷ Rockett, Caitlin. (2014, April). "Muzzled by Monsanto: Is Big Ag squelching research showing its new RNAi GMOs may be dangerous?" Boulder Weekly. <http://www.boulderweekly.com/article-12640-muzzled-by-monsanto.html>
- ¹⁸ Press Release. (2013, March 22) "New Kinds of Genetically Modified Plants and Pesticides Not Being Assessed for Safety." European Network of Scientists for Social and Environmental Responsibility. <http://www.ensser.org/media/0313/>
- ¹⁹ Lundgren JG and JJ Duan. (2013). "RNAi-based insecticidal crops: potential effects on nontarget species". *BioScience*, 63(8): 657-665.
- ²⁰ "A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding: RNAi Technology; Program Formulation for Human Health and Ecological Risk Assessment". (2014, January 28). FIFRA Scientific Advisory Panel Meeting. <http://www.epa.gov/scipoly/sap/meetings/2014/january/012814minutes.pdf>
- ²¹ Thompson, H. (2012, September 26). If genetically modified apples don't brown, can you tell if they're rotten? Retrieved June 14, 2013, from NPR website: <http://www.npr.org/blogs/thesalt/2012/09/17/161295119/if-gm-apples-dont-brown-how-can-you-tell-if-theyre-rotten>
- ²¹ Pollack, A. (2012, July 12). That fresh look, genetically buffed. Retrieved June 14, 2013, from New York Times website: http://www.nytimes.com/2012/07/13/business/growers-fret-over-a-new-apple-that-wont-turn-brown.html?pagewanted=all&_r=1&