

## Summary of Materials in Support of GE Labeling

### Health Risks

Scientific studies, articles, reports, federal agency documents, and expert testimony discuss the health impacts and risks associated with foods produced through genetic engineering. Categories include general health risks, food allergies and sensitivity, toxicity, and uncertainty. For example:

- European Network of Scientists for Social & Environmental Responsibility, *No Scientific Consensus on GMO Safety* (Oct. 21, 2013) – a statement by 300 scientists, medical professionals, and academics explaining that “the claimed consensus on GMO safety does not exist” and that the claim could “lead to a lack of regulatory and scientific rigour and appropriate caution, potentially endangering the health of humans, animals, and the environment.”
- Aziz Aris & Samuel Leblanc, *Maternal & Fetal Exposure to Pesticides Associated to Genetically Modified Foods in Eastern Townships of Quebec, Canada*, *Reproductive Toxicology* (2011) – evaluates relationship between maternal and fetal exposure levels to certain pesticides and finds CryAb1 toxin in pregnant women, their fetuses, and non-pregnant women.
- David Schubert & William Freese, *Safety Testing & Regulation of Genetically Engineered Foods*, *Biotechnology & Genetic Engineering Reviews* (Nov. 2004) – notes that “claims regarding the safety of these crops are based largely on assessments by government regulators, which in turn are founded mostly on unpublished studies conducted by the crop developer.” Conducts a science-based critique of corporate scientific practices and regulatory systems in the United States, with a case study on Bt corn, and finds “serious deficiencies in both regulatory oversight and corporate testing procedures.”
- Judy A. Carman et al., *A Long-term Toxicology Study on Pigs Fed a Combined Genetically Modified (GM) Soy & GM Maize Diet*, *Journal of Organic Systems* (2013) – finds that female pigs fed GM diet had uteruses 25% heavier than those fed non-GM diet; also finds that male and female pigs fed GM diet were more likely to have severe stomach inflammation than control pigs, with males being 4 times more likely.
- Mezzomo et al., *Hematotoxicity of Bacillus thuringiensis as Spore-crystal Strains CryIAa, CryIAb, CryIAc or Cry2Aa in Swiss Albino Mice*, *Journal of Hematology & Thromboembolic Diseases* (2013) – recommends: “Taking into account the increased risk of human and animal exposures to significant levels of these toxins, especially through diet, our results suggest that further studies are required to clarify the mechanism involved in the hematotoxicity found in mice, and to establish the toxicological risks to non-target organisms, especially mammals, before concluding that these microbiological control agents are safe for mammals.”
- Jose L. Domingo & Jordi Gine Bordonaba, *A Literature Review on the Safety of Genetically Modified Plants*, *Environment International* (May 2011) – finds that “[s]tudies specifically addressing safety assessment of GM plants are still limited,” that “[p]ublished literature on GM plants over the past 4 years concerns only 3 products, and that “[m]ore efforts are required to build confidence in the evaluation/acceptance of GM plants.”
- M. Malatesta et al. *A Long-term Study on Female Mice Fed on a Genetically Modified Soybean: Effects on Liver Ageing*, *Histochem Cell Biology*, 130: 967–977 (2008) – finding that mice fed genetically modified soybeans over their entire lifetimes had greater signs of aging in their livers than mice fed a non-GM soybean.

### Consumer Confusion & Deception

Materials show that consumers have the wrong information about whether the food products they consume are GE. Additionally, the fact that products currently do not have labels means that consumers do not know whether their food products are GE. These factors show that there is consumer confusion & deception when it comes to GE foods. E.g.,:

- New York Times poll, reported by Alison Kopicki, *Strong Support for Labeling Modified Foods* (July 27, 2013) – shows that fewer than half of those polled knew a large amount of the processed foods they buy at supermarkets is genetically engineered. Also finds that almost half said that they thought most or a lot of their fruits and vegetables were genetically engineered, even though there are relatively few GE fruits and vegetables on the market.

- Thomson Reuters, *National Survey of Healthcare Consumers: Genetically Engineered Food* (Oct. 2010) – finds that only 69.2% of those polled knew that some of the food available in stores had been genetically engineered.

### **Environmental Harms**

Studies and reports document the environmental harms associated with GE foods, including increased herbicide and pesticide use, cross-contamination, and loss of biodiversity. For example:

- Charles M. Benbrook, *Impacts of Genetically Engineered Crops on Pesticide Use in the U.S.-the First Sixteen Years*, Environmental Sciences Europe (2012) - finds that “the spread of glyphosate-resistant weeds in herbicide-resistant weed management systems has brought about substantial increases in the number and volume of herbicides applied.”
- John M. Pleasants & Karen S. Oberhauser, *Milkweed Loss in Agricultural Fields Because of Herbicide Use: Effect on the Monarch Butterfly Population*, Insect Conservation and Diversity (2012) – examines relationship between decline in monarch butterfly population and loss of milkweed population in agricultural fields in the Midwest.

### **Information on Costs**

Several studies and reports discuss the economic impacts and benefits associated with mandatory labeling requirements for GE foods. Overall, they find that labeling would have little impact on the price of food products, but that costs would vary depending on specific labeling requirements and other factors. For example:

- W.K. Jaeger, *Economic Issues & Oregon Ballot Measure 27: Labeling of Genetically Modified Foods 1-5* (2002) – finds that Oregon’s Measure 27, which would have imposed strict labeling requirements, would likely only cost consumers between \$3 and \$10 annually.
- Joanna Shepherd-Bailey, *Economic Assessment: Proposed California Right to Know Genetically Engineered Food Act (Prop 37) Likely to Cause No Change in Food Prices, Minor Litigation Costs, & Negligible Administrative Costs 3-4* (2012) – finds that labeling requirement would have little or no impact on consumer food prices as a result of relabeling expenses, because the cost of compliance would be too small for companies to justify passing on those costs to their consumers.

### **Religious Concerns**

Documents and materials explain that various religious groups oppose or have concerns about GE foods. For example:

- Working Group on Genetic Engineering of the Justice, Peace and Creation Team, *Caring for Life: Genetics, Agriculture & Human Life*, World Council of Churches (Geneva 2005) - explains how genetically engineered foods “mess with” the WCC’s goal of “caring for life” in important ethical-theological respects.
- Emmanuel B. Omobowale, Peter A. Singer, & Abdallah S. Daar, *The Three Main Monotheistic Religions & GM Food Technology: An Overview of Perspectives*, BMC International Health and Human Rights (2009) – among other things, discusses several groups within Judaism, Islam, and Christianity that specifically advise against the consumption of GM foods.

### **“Natural” as Misleading**

Polls, surveys, reports, and official statements find that labeling genetically engineered food as “natural” is misleading and incorrect. For example:

- Cornucopia Institute, *Cereal Crimes: How “Natural” Claims Deceive Consumers & Undermine the Organic Label—A Look Down the Cereal & Granola Aisle 29* (Oct. 2011) (citing 2010 Hartman Group Poll) - shows that “61% of consumers erroneously believed that the ‘natural’ claim implied or suggested the absence of genetically engineered foods.”
- Memo from Dr. Mitchell Smith, Ph.D, to Jim Maryanski, FDA Biotechnology Coordinator, on the “Draft Federal Register Notice on Food Biotechnology” (Jan. 8, 1992) – concludes that public should be made aware of the fact that the food they purchase is produced from genetically modified organisms, because in order to create these organisms the natural biological barriers to breeding must be breached.