Consumption of Genetically Engineered (=GMO[1]) Crops: Examples of Quotes from Position Papers of Scientific Organizations

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"Genetic engineering…poses no health risks that cannot also arise from conventional breeding and other methods used to create new foods." *Safety of Genetically Engineered Foods: Approaches to Assessing Unintended Health Effects, Report in Brief* (2004). National Academies Press, National Academy of Sciences. http://nas-sites.org/teachers/files/2012/05/ge_foods_final.pdf, accessed 22 Nov 2014.

"The committee…found no substantiated evidence that foods from GE crops were less safe than foods from non-GE crops." *Genetically Engineered Crops: Experiences and Prospects,* Committee on Genetically Engineered Crops: Past Experience and Future Prospects (2016). National Academies Press, National Academy of Science. ISBN 978-0-309-43738-7. http://www.nap.edu/catalog/23395/genetically-engineered-crops-experiences-and-prospects

"There is no validated evidence that GM crops have greater adverse impact on health and the environment than any other technology used in plant breeding." *EASAC Policy Report No. 21, The Science Advisory Council of the National Science Academies of the EU Member States* (2013). ISBN: 978-3-8047-3181-3. http://www.easac.eu/home/reports-and-statements/detail-view/article/planting-the.html, accessed 1 Jan 2016.

"The main conclusion to be drawn from the efforts of more than 130 research projects, covering a period of more than 25 years of research, and involving more than 500 independent research groups, is that biotechnology, and in particular GMOs, are not per se more risky than e.g. conventional plant breeding technologies." *A Decade of EU-funded GMO Research (2001-2010)* (2013). European Commission, doi 10.2777/97784. http://ec.europa.eu/research/biosociety/pdf/a_decade_of_eu-funded_gmo_research.pdf, accessed 22 Nov 2014.

"Data from scientific studies have overwhelmingly demonstrated that foods obtained from GE crops are as safe and nutritious as foods obtained from non-GE (i.e., conventional) crops." *Food and Feed Safety of Genetically Engineered Food Crops (2017),* Approved by the Council of the Society of Toxicology,

[1] "GMO" or "genetically modified organism" is an imprecise term that is commonly understood to refer to genetically engineered crops. In fact, biotech crops can originate from a wide variety of distinct crop-improvement techniques, including genetic engineering. Furthermore, even genetic engineering is accomplished using diverse laboratory techniques. It is important to understand that "GMO" crops differ greatly amongst themselves.

https://www.toxicology.org/pubs/statements/SOT_Safety_of_GE_Food_Crops_Issue_Statement_FINAL.pdf, accessed 20 Dec 2017.

"It is possible that GM technology could lead to unpredicted harmful changes in the nutritional status of foods. Such alterations might also occur in the course of conventional breeding… There is at present no evidence that GM foods cause allergic reactions. The allergenic risks posed by GM plants are in principle no greater than those posed by conventionally derived crops or by plants introduced from other areas of the world… One concern associated with GM foods is the possibility that genes introduced into GM plants might become incorporated into the consumer's genetic make-up... Given the very long history of DNA consumption from a wide variety of sources, we conclude that such consumption poses no significant risk to human health, and that additional ingestion of GM DNA has no effect." *Genetically Modified Plants for Food Use and Human Health* (2002). The Royal Society ISBN 0 85403 576 1. https://royalsociety.org/~/media/royal_society_content/policy/publications/2002/9960.pdf, accessed 24 Nov 2014.

"A previous Royal Society report (2002) and the Government's GM Science Review (2003/2004) assessed the possibilities of health impacts from GM crops and found no evidence of harm. Since then no significant new evidence has appeared. There is therefore no reason to suspect that the process of genetic modification of crops should per se present new allergic or toxic reactions." *Reaping the Benefits: Science and the Sustainable Intensification of Global Agriculture* (2009). The Royal Society, ISBN: 978-0-85403-784-1. https://royalsociety.org/policy/publications/2009/reaping-benefits/, accessed 22 Nov 2014.

"The available scientific evidence indicates that the potential adverse health effects arising from biotechnology-derived foods are not different in nature from those created by conventional breeding practices for plant, animal, or microbial enhancement, and are already familiar to toxicologists." *The Safety of Genetically Modified Foods Produced through Biotechnology, Report of the Ad Hoc Working Group of the Society of Toxicology*, published in *Toxicological Sciences* (2003) Volume 71, pages 2-8.

"The World Health Organization, the American Medical Association, the U.S. National Academy of Sciences, the British Royal Society, and every other respected organization that has examined the evidence has come to the same conclusion: consuming foods containing ingredients derived from GM crops is no riskier than consuming the same foods containing ingredients from crop plants modified by conventional plant improvement techniques." *Statement by the AAAS Board of Directors On Labeling of Genetically Modified Foods* (2012). American Association for the Advancement of Science. http://www.aaas.org/sites/default/files/AAAS_GM_statement.pdf, accessed 22 Nov 2014.

"To date, no documented and reproducible studies have shown harm to human or animal health associated with GM crops. Current scientific evidence supports the conclusion that approved GM plants pose no greater safety risk than traditionally developed plants." *Compulsory Labeling of Plants*

and Plant Products Derived from Biotechnology, American Phytopathological Society. http://www.apsnet.org/members/outreach/ppb/positionstatements/Pages/BiotechnologyPositionStatement.aspx, accessed 22 Nov 2014.

"GM technology, where adopted, is widely regulated and no evidence has been reported of adverse consequences for human health." *Genetic Modification for Disease Resistance: A Position Paper*, International Society for Plant Pathology, http://link.springer.com/article/10.1007/s12571-016-0591-9 Accessed 7 Jul 2016.

"The process of the development of transgenic organisms presents no new categories of risk compared with conventional methods for improving plants, animals or microorganisms. However, specific traits introduced by either approach might pose unique risks, which need to be identified." *Statement on Benefits and Risks of Genetically Modified Foods for Human Health and Nutrition*, International Union of Nutritional Sciences. http://www.iuns.org/statement-on-benefits-and-risks-of-genetically-modified-foods-for-human-health-and-nutrition, accessed 22 Nov 2014.

"The AMA believes that as of December 2000, there is no scientific justification for special labeling of genetically modified foods, as a class, and that voluntary labeling is without value unless it is accompanied by focused consumer education. The AMA supports efforts for the systematic safety assessment of genetically modified foods…" *Genetically Modified Crops and Foods: Report 10 of the Council on Scientific Affairs (I-00)* (2000). American Medical Association. http://www.ilsi.org/NorthAmerica/Documents/AMA_2000InterimMeeting.pdf, accessed 22 Nov 2014.

"(1) Our AMA recognizes the continuing validity of the three major conclusions contained in the 1987 National Academy of Sciences white paper "Introduction of Recombinant DNA-Engineered Organisms into the Environment." [The three major conclusions are: (a) There is no evidence that unique hazards exist either in the use of rDNA techniques or in the movement of genes between unrelated organisms; (b) The risks associated with the introduction of rDNA-engineered organisms are the same in kind as those associated with the introduction of unmodified organisms and organisms modified by other methods; (c) Assessment of the risk of introducing rDNA-engineered organisms into the environment should be based on the nature of the organism and the environment into which it is introduced, not on the method by which it was produced.)" […and…] "6) Our AMA recognizes the many potential benefits offered by bioengineered crops and foods, does not support a moratorium on planting bioengineered crops, and encourages ongoing research developments in food biotechnology." *Policy H-480.958 Bioengineered (Genetically Engineered) Crops and Foods.* American Medical Association. https://www.ama-assn.org/ssl3/ecomm/PolicyFinderForm.pl?site=www.ama-assn.org&uri=/resources/html/PolicyFinder/policyfiles/HnE/H-480.958.HTM, accessed 19 April 2015.

"…individual GM foods and their safety should be assessed on a case-by-case basis and…it is not possible to make general statements on the safety of all GM foods. GM foods currently available on the international market have passed risk assessments and are not likely to present risks for human health. In addition, no effects on human health have been shown as a result of the consumption of

such foods by the general population in the countries where they have been approved." *Twenty Questions on Genetically Modified (GM) Foods*, World Health Organization. http://www.who.int/foodsafety/areas_work/food-technology/faq-genetically-modified-food/en/, accessed 22 Nov 2014.

"In our view, the potential for GM foods to cause harmful health effects is very small and many of the concerns expressed apply with equal vigour to conventionally derived foods. However, safety concerns cannot, as yet, be dismissed completely on the basis of information currently available. The BMA has identified several areas where we believe more research is needed…" [allergens, nutritional status, genetic transfer] *Genetically Modified Foods and Health: A Second Interim Statement* (2004). Board of Science and Education, British Medical Association. http://www.argenbio.org/adc/uploads/pdf/bma.pdf, accessed 22 Nov 2014.

"FAO recognizes that genetic modification can help in some circumstances to increase production and productivity and thus contribute to food security. However, FAO is also aware of the concern about the potential risks that GMOs pose regarding the effects on human and animal health and the environment. FAO underlines the need to carefully evaluate the potential benefits and possible risks associated with the application of modern technologies to increase plant and animal productivity and production. However, the responsibility for formulating policies and making decisions regarding these technologies rests with the Member Governments themselves." *Frequently Asked Questions about FAO and Agricultural Biotechnology* (2011). UN Food and Agriculture Organization. http://www.fao.org/fileadmin/user_upload/biotech/docs/faqsen.pdf, accessed 22 Nov 2014.

"There is nothing intrinsic about the use of GE technologies for crop improvement that would cause the plants themselves or the resulting food products to be unsafe." *Transgenic Plants for Food Security in the Context of Development*. Conference Statement of the Pontifical Academy of Science. *New Biotechnology,* 2010, Vol. 27, Issue 5, Pages 445-718. http://ac.els-cdn.com/S1871678410005911/1-s2.0-S1871678410005911-main.pdf?_tid=22392318-ef93-11e4-b9d6-00000aab0f6c&acdnat=1430437774_5ca253ae3d816b7e171b9dffd92715e9, accessed 30 April 2015.

"It is the position of the American Dietetic Association that agricultural and food biotechnology techniques can enhance the quality, safety, nutritional value, and variety of food available for human consumption and increase the efficiency of food production, food processing, food distribution, and environmental and waste management." *Position of the American Dietetic Association: Agricultural and Food Biotechnology.* Journal of the American Dietetic Association. 2006, Vol. 106, pp. 285-293.

"Hundreds of independent studies have shown that there are no safety or health differences between GM crops and those modified by traditional breeding techniques. Claims that the potential risks of GM crops are unknown are also inaccurate. In fact, because of the strict regulations of GM foods by governments worldwide, GM crops are among the most well-studied and tested items in our food supply. Dozens of acclaimed scientific and health organizations, including the American Association for the Advancement of Science, the World Health Organization, the American Medical Association,

and the European Commission, have all conducted similar reviews of the current research and have come to the same conclusion: foods from GM crops are safe for consumption and do not present any health risks." *Position Statement* (2014), Crop Science Society of America. https://www.crops.org/files/science-policy/issues/reports/cssa-gmo-statement.pdf, accessed 22 Nov 2014.

Meat, milk and eggs from animals fed biotech feeds are safe for human consumption." *FASS Facts: On Biotech Crops – Impact on Meat, Milk and Eggs*. Federation of Animal Science Societies. http://www.fass.org/geneticcrops.pdf, accessed 5 Jan 2015.

"Scientists should communicate with public and policy makers about the safety and benefits of GM crop products and remove the undue fears and apprehensions about GM crop adoption." *GM Crops for Nutritional Security* (2014). Indian National Academy of Agricultural Sciences. http://naasindia.org/documents/GM%20Crop%20Round%20Table%20Resolution%20website.pdf, accessed 22 Nov 2014.

"[We] observe that presently some available scientific evidence shows that Genetically Modified Organisms (GMOs) are reasonably safe; hence African countries should encourage research on and utilization of GMOs…" *Declaration of the 9th Annual Meeting of African Science Academies* (2013). http://www.eas-et.org/AMASA9_Doc/English%20Declaration.pdf, accessed 22 Nov 2014.

"Approval of new transgenic organisms for environmental release, and for use as food or feed, should be based on rigorous scientific assessment of their potential for causing harm to the environment or to human health. Such testing should replace the current regulatory reliance on 'substantial equivalence' as a decision threshold." *Elements of Precaution: Recommendations for the Regulation of Food Biotechnology in Canada* (2001). The Royal Society of Canada. https://rsc-src.ca/sites/default/files/pdf/GMreportEN.pdf, accessed 27 Nov 2014.

"The Biochemical Society recognises that GM crops are not a magic bullet that will feed the whole world or eliminate poverty. However, the application of molecular biology will allow more targeted, precise, predictable and controllable improvement of crops…" *Modified Crops, Feed and Food* (2011), The Biochemical Society. http://www.biochemistry.org/Portals/0/SciencePolicy/Docs/GM%20Position%20Statement%202011%20Final.pdf, accessed 5 Jan 2015.

"Nothing in life is totally free of risk. However, to minimize risk it is important to rely on fact rather than on fear, and ASM is not aware of any acceptable evidence that food produced with biotechnology and subject to FDA oversight constitutes high risk or is unsafe." *Statement of the American Society for Microbiology on Genetically Modified Organisms* (2000). http://www.asm.org/index.php?option=com_content&view=article&id=3656&Itemid=341, accessed 22 Nov 2014.

"The precision of this technology, coupled with the knowledge of the specific nature of the manipulated genetic information, makes the risks of unintended consequences of this type of gene transfer comparable to or less than the random mixing of genes that occurs during classical breeding." *Statement on Plant Genetic Engineering*, American Society of Plant Biologists. https://c.ymcdn.com/sites/aspb.site-ym.com/resource/group/6d461cb9-5b79-4571-a164-924fa40395a5/Statements/ASPB_GE_revision.APPROVED_ed.pdf, accessed 30 Jul 2017.

"Decisions regarding safety should be based on the nature of the product, rather than on the method by which it was modified. It is important to bear in mind that many of the crop plants we use contain natural toxins and allergens. The potential for human toxicity or allergenicity should be kept under scrutiny for any novel proteins produced in plants with the potential to become part of food or feed. Health hazards from food, and how to reduce them, are an issue in all countries, quite apart from any concerns about GM technology." *Transgenic Plants and World Agriculture* (2000). Report Prepared Under the Auspices of the Royal of London, U.S. National Academy of Sciences, Brazilian Academy of Sciences, Chinese Academy of Sciences, Indian National Academy of Sciences, Mexican Academy of Sciences, and the Third World Academy of Sciences. http://www.nap.edu/catalog/9889/transgenic-plants-and-world-agriculture, accessed 27 Nov 2014.

"GM products have been in several foods for many years and consumed without any substantiated evidence of ill effects on health, and their safety confirmed by many peer-reviewed studies world-wide. The regulatory system in Australia is designed to enable unexpected, undesirable effects, such as the production of toxins or allergens, poor nutritional properties or serious environmental damage, to be identified during the laboratory phase or during the several seasons of field trials that precede commercial production." *Statement on Gene Technology and GM Plants* (2007). Australian Academy of Science. https://www.science.org.au/statement-gene-technology-and-gm-plants, accessed 5 Jan 2015.

"Currently available genetically modified foods are safe to eat. Food safety assessments by national regulatory agencies in several countries have deemed currently available GM foods to be as safe to eat as their conventional counterparts and suitable for human consumption. This view is shared by several intergovernmental agencies, including the FAO/WHO Codex Alimentarius Commission on food safety, which has 162 member countries, the European Commission (EC), and the Organization for Economic Cooperation and Development (OECD). Further, there is no evidence of any ill effects from the consumption of foods containing genetically modified ingredients. Since GM crops were first cultivated commercially in 1995, many millions of meals have been made with GM ingredients and consumed by people in several countries, with no demonstrated adverse effects. Although currently available GM foods are considered safe to eat, this does not guarantee that no risks will be encountered as more foods are developed with novel characteristics. Ongoing evaluation of emerging products is required to ensure that new foods coming to market are safe for consumers." *New Genetics, Food and Agriculture: Scientific Discoveries –Societal Dilemmas* (2003). International Council for Science. http://www.icsu.org/publications/reports-and-reviews/new-genetics-food-and-agriculture-scientific-discoveries-societal-dilemas-2003/ICSU_GMO_report_May_2003.pdf, accessed 27 Nov 2014.

"Safety evaluation is conducted by the United States Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA-APHIS), and, in some cases, the Environmental Protection Agency (EPA). Under the auspices of these agencies, all crop and animal products that result from biotechnology are demonstrated to be safe as non-engineered versions of that plant or animal product, prior to their use by the public." *Position Statement on Crop Genetic Engineering*. Society for In-Vitro Biology. http://www.sivb.org/publicPolicy_CropEngineering.asp, accessed 27 Nov 2014.

"Foods from genetically engineered plants intended to be grown in the United States that have been evaluated by FDA through the consultation process have not gone on the market until the FDA's questions about the safety of such products have been resolved." *Questions & Answers on Food from Genetically Engineered Plants*, U.S. Food and Drug Administration. http://www.fda.gov/food/foodscienceresearch/biotechnology/ucm346030.htm, accessed 8 Mar 2015.

"The report concludes that food derived from GM plants approved in the EU and the US poses no risks greater than those from the corresponding conventional food. On the contrary, in some cases food from GM plants appears to be superior with respect to health." *Are There Health Hazards for the Consumer from Eating Genetically Modified Food?* Union of the German Academies of Science and Humanities. http://www.fbae.org/2009/FBAE/website/special-topics_are_there_health_hazards.html, accessed 24 Jan 2016

"The presence or absence of GMO or GE ingredients is not an indication of quality or food safety." *AVMA [American Veterinarian Medical Association] supports safety of GMO and GE foods*. https://www.avma.org/News/JAVMANews/Pages/170601j.aspx, accessed 12 May 2017.

"Genetic modification does not introduce unique risks." *Frequently Asked Questions - Biotechnology and Genetically Modified Foods, Health Canada.* https://www.canada.ca/en/health-canada/services/food-nutrition/genetically-modified-foods-other-novel-foods/factsheets-frequently-asked-questions/part-1-regulation-novel-foods.html, accessed 26 Jul 2017.

Additional position papers from scientific organizations can be found at http://www.siquierotransgenicos.cl/2015/06/13/more-than-240-organizations-and-scientific-institutions-support-the-safety-of-gm-crops/, accessed 16 Jun 2016.