

Codex Alimentarius and the International Politics of Food Irradiation

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Codex Alimentarius,¹ literally translated from Latin, means “food code.” Codex sets standards for food that include the following: labeling; additives; contaminants; methods of analysis and sampling; hygiene; nutrition and foods for special dietary uses; import and export inspection; and certification systems, residues of veterinary drugs in foods and pesticide residues in foods. The Food and Agriculture Organization (FAO) of the United Nations (UN) and the World Health Organization (WHO) created the Codex Alimentarius in 1963, and still maintain joint oversight powers.

Although Codex claims to have broad community involvement to increase consumer protection with internationally recognized scientific food standards, its achievements fall flat under scrutiny. Codex does not rely on “broad community involvement” in its decision making process; decisions are made by governmental appointees behind closed doors. While Codex counts 168 member countries representing 97 percent of the world, the delegates to Codex who actually make the decisions are appointed by national governments, not elected by the people. Codex claims that delegations include senior governmental officials, academics and industry representatives. Delegations over represent industrial interests, not the interests of the people.

Within Codex, food irradiation is classified as an additive. Thus, food irradiation falls under the jurisdiction of the Codex Committee on Food Additives and Contaminants (CCFAC). CCFAC depends on several sources of information in evaluating food additives. In the case of irradiation, CCFAC draws from the Joint FAO/WHO Expert Committees on Food Additives (JECFA) as well as the International Atomic Energy Agency (IAEA) and the International Consultative Group on Food Irradiation (ICGFI).

As shown in an October 2002 report by Public Citizen, *Bad Taste: The Disturbing Truth About the World Health Organisation’s Endorsement of Food Irradiation*,² the WHO has relied on a very small number of faulty studies in declaring food irradiation safe; this unscientific and shoddy work is the foundation of acceptance of food irradiation across the world. The IAEA owes its loyalty to the nuclear industry and thus works with governments to apply nuclear technologies. It is impossible for the main advocate of nuclear technology to advise Codex in a disinterested, scientific manner because of its vested interests in the speedy and complete adoption of food irradiation.

Codex has not relied on disciplined, dispassionate or scientific advice in setting standards for food irradiation. Instead, the decisions and regulations recommended by Codex are used as a starting point for the facilitation of international trade. Both the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) of the World Trade Organization (WTO) and the Agreement on Technical Barriers to Trade (TBT) follow Codex’s lead and encourage the international harmonization of food standards from a trade perspective.

A product of the Uruguay Round of multinational trade negotiations under the WTO, the SPS Agreement cites Codex standards, guidelines and recommendations as the preferred international measures for facilitating international trade in food. As such, Codex standards have become the benchmarks against which national food measures and regulations are evaluated within the legal

¹ Information concerning Codex from its website, at www.codexalimentarius.net

² Available at <http://www.citizen.org/documents/BadTaste.pdf>

parameters of the Uruguay Round Agreements. Codex has become an instrument of the liberalization of international trade, instead of a method to protect the food supplies of peoples across the world.

The Evolution of Weakening the Codex General Standard for Irradiated Foods

The original Codex General Standard for Irradiated Foods was developed in 1983. In 1999, the Codex Commission took the first step and decided to re-examine the Standard by assigning the work to the Codex Committee on Food Additives and Contaminants (CCFAC). Over the course of the following four years, seven more steps were taken before the new Codex General Standard for Irradiated Foods was finally accepted during the full Codex Commission meeting in Rome from June 30 - July 7, 2003. Most of the changes to the original 1983 Standard were pushed by the United States in order to liberalize the regulations regarding food irradiation.

Seven addition steps trace the Proposed Draft Standard for Irradiated Foods to its final adoption, as follows:

Step 2: In 1999, the Codex Secretariat called for the Proposed Draft Standard to be drawn.

Step 3: In 2000, the Draft Standard was sent to member nation agencies and international organizations for comments.

Step 4: In March 2001, CCFAC reviewed and modified the Draft Standard.

Step 5: In September 2001 the Codex Executive committee approved the Draft Standard.

Step 6: In September 2001, the Draft Standard was sent back to the designated government agencies and international organizations for comments.

Step 7: Delayed: In March 2002, CCFAC delayed the process for a year because of a new European study on the toxicity of 2-ACB's.³

Step 7: In March 2003, the Draft Standard returned once again to CCFAC for committee acceptance.⁴

Step 8: In the summer of 2003, the full Codex Commission ratified the new Codex General Standard for Irradiated Foods.

Despite growing public dissent, Codex weakened the international food irradiation rule to allow any food to be irradiated at any dose, regardless of how high. The new Standard contains no maximum radiation dose to which foods can be "treated." The previous limit was 10 kiloGray, a dose of radiation equivalent to 330 million chest X-rays. At such doses, the chemical composition of foods can be altered; vitamins, proteins and other nutrients can be destroyed; and flavor, odor and texture can be corrupted. The decision was made over the objections of more than 10 countries, including Austria, Denmark, Germany, Italy, Mexico and Spain. Both the UN and the WHO are mandated to protect the health and welfare of the world's population, but they obviously shirked on this responsibility when the decision was made.

Since Codex standards are enforceable through the World Trade Organization, member nations that have food irradiation laws stricter than the new Codex Standard could have their laws challenged and overruled. Currently, only Brazil has a food irradiation law in keeping with the new Codex Standard. Brazil's food irradiation regulations were adopted in December 2001, immediately before the end of former President Fernando Henrique Cardoso's term. The regulations allow *any* food to be irradiated at

³ 2- alkylcyclobutanones, which are chemical byproducts formed in irradiated foods.

⁴ Although the American delegates to CCFAC did not attend the meeting in March in Tanzania, the Filipino delegation was there and pushed the US agenda to ensure that the Standard would be weakened in order for the irradiation industry to stretch its reach over the world.

any dose, without regard to health implications. Now, the food irradiation laws in every other nation – including all 15 European Union countries – are in jeopardy.

On a brighter note, Codex elected a new chairperson in July 2003: Dr. Stuart Slorach of Sweden's National Food Administration. Dr. Slorach is viewed as being more attentive to consumer needs than his predecessor, Thomas Billy of the U.S. Department of Agriculture. European consumer organizations have been pushing the European Parliament and the European Union delegation to Codex to ensure that the safety and well being of consumers are upheld in Codex and within Europe. The results of this effort were evident in the fact that the European nations were able to stand strong and garner enough support for Dr. Slorach, regardless that the United States backed a different candidate. This move also indicates that the United States can not get its way all the time in the Codex proceedings and that Europe has the possibility to be a leader at Codex. If Dr. Slorach continues to be interested in protecting consumers, then, perhaps, the debate over irradiated foods will be reopened and the health of the people will be the first priority.

Health Implications of the New Codex General Standard for Irradiated Foods

The move to remove the upper dose limit ignores well-documented evidence that irradiated foods may not be safe for human consumption – including the formation of chemicals linked to cancer and birth defects. During the process of irradiation, food is exposed to gamma rays of radioactive material (cobalt-60 or cesium-137) or electron beams. Ionization of food causes complex chemical modification. The result is a *radiolytic product*, never found in nature and linked to cancer and genetic modification.

More than 40 years of scientific research has shown many health problems in animals that ate irradiated food, including premature death, mutations, reproductive problems, fatal internal bleeding, destruction of immune systems and others. In addition, research has shown that *all* vitamins can suffer substantial losses due to irradiation. For example, 91 percent of vitamin B₆ in irradiated beef stored for 15 months and 33 percent of vitamin B₁₂ in meat can be lost due to irradiation.^{5,6}

Recent research conducted in Europe concentrated on a specific by-product of irradiation, called 2-alkylcyclobutanones, or 2-ACBs. The team of scientists found links to colon tumors and the stimulation of the cancer-forming process in rats fed 2-ACBs. Never before had these studies been conducted, nor these results reached. This study indicates that further research is essential before irradiated food is implemented, or else human beings will be used as guinea pigs to determine long-term health impacts.^{7,8,9}

The Next Steps

Codex has to reopen the case of food irradiation. Organizations throughout the world need to contact their Codex delegates¹⁰ and inform them of the dangers associated with consuming irradiated foods.

⁵ Diehl, J.F. "Combined effects of irradiation, storage and cooking on the Vitamin E and Vitamin B₁ levels of foods." Presented at the 33rd Annual Meeting of the American Institute of Nutrition, 1969.

⁶ Urbain, W.M. *Advanced Food Research*, 24:155-227, 1978. Cited in Murray, D.R., *Biology of Food Irradiation*, Somerset, England: Research Studies Press, 1990.

⁷ Burnouf, D. et al. (Eds.) "Etude toxicologique transfrontalière destinée à évaluer le risque encouru lors de la consommation d'aliments gras ionisés – Toxikologische Untersuchung zur Risikobewertung beim Verzehr von bestrahlten fetthaltigen Lebensmitteln – Eine französisch-deutsch Studies im Grenzraum Oberrhein. Rapport Final d'étude Interreg II, Projet N° 3.171, 2002.

⁸ Delincée, H. et al. "Genotoxicity of 2-alkylcyclobutanones, markers for an irradiation treatment in fat-containing food – Part I: cyto- and genotoxic potential of 2-tetradecylcyclobutanone." *Radiation Physics and Chemistry*, 63:431-435, 2002.

⁹ Delincée, H. "Rapid detection of irradiated frozen hamburgers." *Radiation Physics and Chemistry*, 63:443-446, 2002.

¹⁰ Delegates can be found on the website, <http://www.codexalimentarius.net/>, under "About Codex."

Codex is intended to protect consumers, not use them as guinea pigs, and as such, the Codex Standard for Irradiated Foods needs to be revised. In addition, government officials need to be made aware of irradiation's dangers. Canada and the United States are the two global economic leaders pushing this dangerous technology. Japan and Europe proceed with caution when taking into consideration the well fare of consumers and the environment. Now, Canada and the US need to do the same. With solid information and citizen input, the policies can be changed.

For more information, please visit www.noglobalirradiation.org.