

Food Irradiation and Global Trade

What Irradiation Means for Farmers and Ranchers
in the United States and Throughout the World



Critical Mass Energy and Environment Program

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Food Irradiation and Global Trade

The Ministerial Conference and Expo on Agricultural Science and Technology, held this month in Sacramento, California, comes at a pivotal moment for corporate and government proponents of food irradiation. Never before in the food irradiation movement's 50-year history have so many significant events converged to advance this technology - long considered too controversial and experimental for public acceptance.

In the past year alone:

- The world's top public- and private-sector food irradiation figures adopted a "Global Action Plan" that includes a massive "public education" campaign to embellish the benefits and downplay the hazards of irradiated foods; the "harmonization" of food irradiation laws from nation to nation; and, an all-out push to stimulate trade in these products among countries spanning the globe.

- The U.S. government legalized the importation of irradiated fruits and vegetables, opening up potential trade lines with countries in Asia, Latin America, the Pacific and other regions where, because of fruit flies, weevils, moths and other invasive pests, agricultural exports to the U.S. are restricted or banned.

- The international food standard-setting body, the Codex Alimentarius Commission, has proposed conditionally allowing any food to be irradiated at any dose, which will open the possibility for trade in sterilized foods - bereft of nutrients - that could be stored without

refrigeration for weeks or even months.

- A major food irradiation facility opened in Brazil, which a high-ranking U.S. official said has the potential to become the "fruit basket of the world." With more than 20 additional facilities planned, Brazil is poised to become an even more prolific producer and exporter of a wide range of meat, fruit and vegetable products.

- A major food irradiation facility opened in Australia. And, Australia and New Zealand legalized the irradiation of breadfruit, litchi, longan, mango, papaya and other tropical fruits for export, likely to the lucrative markets of Asia, Europe and North America.

What is good news for the food irradiation industry, however, is bad news for farmers and ranchers in both the global South and North. With the potential to further stimulate the industrialization, consolidation and globalization of food production and distribution systems, irradiation stands as yet another threat to the autonomy and security of farmers everywhere - even in developed nations

that have already seen adverse effects of “harmonization,” “free” trade agreements, and emerging technologies, such as genetic engineering.

The Sacramento Agricultural Ministerial, together with the 5th World Trade Organization Ministerial to be held this September in Cancun, Mexico, will provide a public forum to discuss the dangers and perceived benefits of food irradiation. The increased visibility of this technology – punctuated by the fact that irradiated ground beef is reportedly available in more than 7,000 grocery stores in the U.S. – necessitates an open and vigorous debate of an issue that holds the potential to dramatically alter the way that food is produced and distributed throughout the world. No technology should be permitted to expand in the absence of such a debate.

THE BIG PICTURE

Around the globe, multinational corporations such as Cargill/Excel, Del Monte, IBP, Philip Morris/Kraft and even Mitsubishi are planning to use irradiation to increase their global reach.

Why?

Irradiation can double or triple the shelf life of food, thus allowing food to be shipped longer distances before rotting – though depriving food of nutrition and taste.

Irradiation can kill fruit flies, weevils and other exotic pests that currently pose barriers to trade – though, under a recently approved U.S. regulation, they can still pose infestation dangers.

And, irradiation can mask the filth and contamination on meat resulting from factory-style farming, slaughtering and processing – though failing to encourage

meat companies to improve conditions in their facilities.

With irradiation in its toolbox, multinational food corporations are driving to raise more livestock and grow more fruits and vegetables in the global South, primarily in Asia, Africa and Latin America – where labor is cheap and unorganized, and where agricultural chemicals are, in many cases, virtually unregulated.

At the top of the list are Argentina, Brazil, Chile, China, Hungary, Mexico, South Africa, Thailand and the Philippines. Developed nations are also being eyed for the production of irradiated foods, including Australia, Canada, New Zealand and the United States.

Irradiation is a vital tool in this drive. A high-ranking official with the U.S. Department of Agriculture went so far as to say that irradiation is “absolutely necessary” in order to maximize the global trade in food.¹

Irradiation, in fact, is even viewed as a mechanism to strengthen or establish not just economic ties, but diplomatic and political ties among nations. The new maxim expressing this goal – as comical as it may seem – is “détente through dosage.”²

If permitted to thrive, however, irradiation – which is already legal in about 60 countries for hundreds of types of food – will further the industrialization, consolidation and globalization of our food supply, thus enabling large corporations to gain even more command and control over the world’s food supply and those people who produce it.

In order to maximize their profits – without stating any benefits for consumers – multinational food companies are using their influence in international trade, health and food safety negotiations to promote irradiation.

Meanwhile, family farmers and small food producers will not be able to compete with giant plantation-style operations where prices are below the cost of production. Their land and labor will thus become susceptible to joint ventures that grow cash crops and livestock for an export economy, instead of staple items necessary for a country to feed itself.

Small producers throughout the world will be devastated as cash crop production shifts to the global South, and cheap imports flood European and American markets under “free” trade agreements. Thousands of displaced farmers will have little choice but to move to cities, where they will almost certainly live in poverty and most likely work in sweatshops – if they work at all.

The destruction of family farms leads to rural migration and urban sprawl, poverty, and the myriad social ills that come of social stress and economic depression. Women – marginalized, underrepresented and overworked in most societies – often bear the brunt of such economic, political and social turmoil.

And, industrialized farming adds stress to the environment as more forests are logged, waterways are polluted with more chemicals and waste, and land is deprived of the subtle nourishment and maintenance provided by diverse planting and traditional farming methods.

Contrary to proclamations by corporate agribusiness that food irradiation will help “feed the world” and create economic opportunities for farmers and ranchers everywhere, irradiation is a sly maneuver to increase profits at the expense of people’s livelihoods. Ultimately, the irradiation industry is only interested in the global South for its own profit, not for the

economic stability, social well-being or health of people.

Under rules established by the Codex Alimentarius Commission, more than 160 nations will soon be allowed to irradiate food (at any dose), trade it “freely” with any other country (whether they want to import it or not), and serve it to people who might not know that the food they are eating could make them sicker in the long run than the pathogens that irradiation is intended to kill.

Created in 1963 by the World Health Organization and the United Nations’ Food and Agriculture Organization, the Codex Commission is an unaccountable international body that creates global standards for globalized food trade. Under the innocuous-sounding policy of “harmonization,” the Codex Commission – whose members are neither elected nor subject to removal by citizens – has been instrumental in breaking down trade “barriers” to promote “free” trade in agricultural products.

Under harmonization, England, for example, would not be allowed to block food imports from France if its own food safety laws are stricter and are not supported by science.

In the case of food irradiation, the United States is trying to lower the standards of countries that have banned or strictly limit the production, sale and/or importation of irradiated food, such as Japan and most member nations of the European Union.

Globalization of food safety and food quality standards means that citizens will have little control over the food they eat. Global agribusinesses will exert their influence on these international bodies, as they will be the only ones that can afford to play on the international stage. In the name of

promoting free trade, hard-fought consumer protections will either be weakened or eliminated entirely.

Some countries, fearful that their consumers might be forced to eat irradiated, genetically modified and other harmful foods, have called for the implementation of the “precautionary principle” as a way to protect their sovereignty over food

safety issues.

Amid all of the drawbacks of irradiation, many countries throughout the world have already jumped onto the bandwagon, and are looking to plug into the global trade in these foods:

- China is reportedly the world’s irradiated food leader, irradiating about 100,000 tons of food per year, much of

Case Study: Brazil

As much as Brazil has been exploited by foreign agriculture interests in recent decades, transnational food corporations have yet another new tool at their disposal.

From Belém in the north to Porto Alegre in the south, and from Recife in the east to Rio Branco in the west, a network of food irradiation facilities is being planned that, in the words of a United States government official, is aimed at turning Brazil into “the fruit-basket of the world.”¹

These words might look nice stickered to Brazilian mangoes, melons and papayas in grocery stores in the U.S., Europe and Asia. Achieving this stature, however, could damage Brazil’s economic, social and environmental health far greater than one would think.

For years, the formula simply has been too attractive for transnational corporations to ignore. As it is, they are capitalizing on low-cost and poorly represented labor, inexpensive farmland, the debt-ridden government’s perceived need for foreign investment, a virtual lack of restrictions on pesticides and other chemicals, and – perhaps most harmful from the human point of view – an ease of pushing people off their land.

Because irradiation significantly extends shelf life – meaning Brazilian agricultural products could be shipped halfway around the globe and still arrive “fresh” – corporate prospectors will flock to Brazil in even greater

numbers with even higher profit goals and even more expectations for exploitation.

Not that more incentives need be dangled in front of corporate prospectors, but Brazil happens to be the only country in the world that has legalized irradiation for all foods at any dose, no matter how high. For a country that already exports 42 million tons of agricultural products a year, the potential for even higher numbers, with the expansion of irradiation, is essentially limitless. Brazil’s leading food irradiation company certainly thinks so; it envisions at least 174 irradiation facilities scattered throughout the country – and, for that matter, 2,000 facilities throughout the world.²

Also working in favor of transnational corporations, and threatening indigenous economies, is the fact that the agency that sets international food safety standards is on the verge of liberalizing global food irradiation rules. What’s more, these rules will be enforceable by the World Trade Organization (WTO).

The upshot of such a change is that irradiated agricultural products originating in Brazil cannot be blocked at the border of any WTO member nation. Because irradiation is a WTO-blessed method to kill fruit flies and other invasive species, WTO member nations can no longer ban the importation of fruits and vegetables on the grounds of preventing

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which is garlic.

- The U.S. irradiates about 100,000 tons of food a year, nearly all of which is spices and seasonings, with a small amount of ground beef and papayas.
- Japan irradiates 15,000-20,000 tons of potatoes per year, to inhibit sprouting. Japan became the first country to introduce

the sale of irradiated food when a potato irradiation plant opened in 1973.

- Belgium, France, the Netherlands and South Africa each irradiates more than 10,000 tons of food per year.
- Onions are irradiated in Argentina, Hungary, the Philippines and Thailand.
- Shelf-stable meals such beef curry,

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infestation, as doing so would constitute a “barrier to trade.” With no barriers to foreign markets, with no foreseeable slowing of forest destruction, and until recently with no long-term vision for attaining economic security, Brazil may become an even bigger target for transnational corporations.

American and European agribusiness giants have already started to move in and buy up land to produce all manner of fruits, vegetables and meat products – from melons to mangoes, mushrooms to maize, and poultry to pigs. By their very nature, transnational food corporations are only interested in growing more fruits and vegetables, and raising more livestock in the global South – where the “business climate” is most favorable – and shipping these products to developed nations, where people will pay top dollar for off-season mangoes and papayas, as well as year-round fruits and vegetables that beat prevailing prices.

As it is, Brazilian agricultural exports have nearly doubled since 1990, from 34.9 billion BRL to 65.5 billion BRL. Plus, the value of the BRL has fallen dramatically in the past three years, while, simultaneously, unemployment is on the rise.

Brazil's land and its environment in general will also come under increased attack, in order to accommodate the rampant profit motives of transnational corporations. Brazil's rainforests – by far the largest and most biologically diverse in the world – have already been extensively burned, bulldozed

and otherwise flattened. On average, one acre of Brazilian rainforest is destroyed every nine seconds. The Atlantic Rainforest – where 70 percent of the plants and most of the 20 primate species are found nowhere else in the world – has been reduced to 5 percent of its original size.

Irradiation poses environmental and health risks of its own. Food is “treated” with gamma rays from radioactive cobalt-60 or cesium-137, speed-of-light electrons from linear accelerators, or X-rays. Since the 1960s, dozens of mishaps have been reported throughout the world. Radioactive water has been flushed into the public sewer system. Facilities have caught fire. Workers have lost fingers, hands, legs and, in several cases, their lives. Company executives have been charged with cover-ups.

In Goiânia in 1987, scavengers dismantled a cesium-137 irradiation canister while rummaging through a junkyard and took it home. Several hundred people were unwittingly exposed. Some children and adults – thinking the cesium powder was “pretty” – rubbed it over their bodies. Others ate food that had been contaminated with the radioactive powder. Four people died.

Notes

¹ Personal communication with Arnold Foudin, Plant Protection and Quarantine, Animal and Plant Health Inspection Service (APHIS), U.S. Department of Agriculture (USDA).

² Jose Francisco Bufara de Medeiros, presentation at the Food Irradiation 2002 conference, March 25-27, 2002, Dallas, Texas.

beef Stroganoff, lasagna and sausages are irradiated in South Africa.

- The raw, fermented pork sausage Nham is irradiated in Thailand.^{2a}

GOING GLOBAL

Gathering at the “First World Congress on Food Irradiation” in Chicago in May, more than 200 food industry executives and government officials from the U.S. and 16 other countries ushered in what they described as a new era of food irradiation – an era of expanded global trade in irradiated foods, of nation after nation legalizing irradiation, of increased consumer acceptance, and of public and private sector cooperation for the united purpose of making irradiation a global, mainstream phenomenon.

Featured speakers revolved around several common themes, comprising a “Global Action Plan”:

- **“Educating” consumers, government officials, academics, public health officials and consumer organizations** throughout the world that irradiation is an effective, practical and safe way to kill harmful microorganisms, prevent the spread of invasive pests and extend shelf life. “About 60 percent of the population needs to be persuaded,” said the World Health Organization’s point person on food irradiation. He also said that acceptance in the European Union is being slowed due to “political” reasons³ – suggesting that such reasons are not valid. A representative of the Minnesota Beef Council boasted that sales in Minnesota – a hub of irradiated beef distribution and sales – have grown, among other factors, due to “educating opinion leaders,” handing out tens of thousands of irradiated beef samples

at fairs and women’s functions, and “protest management.”⁴

- **Stimulating trade with countries** throughout the world, mainly in Africa, Asia and South America. Singled out were Brazil, Chile, Mexico, South Africa and Thailand. In particular, irradiation was praised as a method to introduce indigenous fruit and vegetables throughout the world, and as a replacement for methyl bromide. An official with the U.S. Department of Agriculture (USDA) said that a recent rule that legalized the importation of irradiated fruits and vegetables will create a boom for trade, and that the government is ready to help: “We’re knocking on industry’s door. Soon they’ll be knocking on ours. Irradiation is really the future of plant quarantine.”⁵

- **Downplaying evidence that irradiated foods are not safe for human consumption.** Most notably, USDA Under Secretary for Food Safety Elsa Murano, the event’s keynote speaker, said that negative health effects associated with irradiated foods are a “myth.” And, the World Health Organization’s point person on food irradiation said that the agency would “be happy to reopen this question [of health and safety] if any additional information comes to us.” He said this despite being aware that a recent European Union-funded study found that chemical byproducts in irradiated foods, called 2-ACBs, promoted cancer development in rats and caused genetic damage to human cells.

- **Harmonizing labeling laws, which** would likely remove the labeling requirements for irradiated foods in the U.S., Canada and many other countries, and potentially remove the Codex requirement that irradiated foods and ingredients be

labeled. A representative from the National Food Processors Association said that the U.S. government – which requires irradiated whole foods sold in stores to be labeled – is the main barrier to expanding sales, and that the organization will continue to “pressure” the government on this point.⁶ And, an industry representative said it would be “worthwhile” for a World Trade Organization member nation to file a complaint against the European Union, whose regulations are out of sync with Codex rules by banning irradiation except for spices and seasonings.⁷

- **Pushing irradiation not just as a food-safety treatment, but also as a phytosanitary treatment** (protecting plants from pests). Oddly, the International Atomic Energy Agency – not a food or public health agency – is funding a global phytosanitary initiative.

- **Potentially using irradiation as a way to protect companies from lawsuits** filed by people sickened by eating contaminated products. By irradiating their products, the legal argument goes, a company would not be held legally responsible.

- **Regulating irradiation as a “process”** instead of an “additive,” which would greatly streamline approvals, particularly in the U.S., where irradiated food applications must be made on an individual food basis.

Above all, conference participants urged that a new international agency be formed, to be comprised mainly of government and industry representatives, to hasten the global spread of irradiated foods and the technology itself. Conference organizers said this new agency would be open to input from consumer organizations, despite the fact that the existing international food irradiation agency has been largely closed to input.

THE UNITED STATES STEPS FORWARD

In October 2002, the U.S. government legalized the importation of irradiated fruits and vegetables. To transnational food conglomerates, the new policy is a shot in the arm. To U.S. farmers, particularly family operations and other small-scale outfits, it is a slap in the face.

Ostensibly intended to reduce the risk of infestation by fruit flies and other non-native pests, the rule could have devastating side-effects. The U.S. agriculture industry – already reeling from the rising tide of low-cost imports from the global South – will find itself at a further disadvantage as imports increase. In reality, the rule actually legalizes the importation of potentially infested, *non-irradiated* produce into 33 states, which could cause new exotic pest outbreaks and worsen infestations that already plague several southern states, particularly California, Florida and Texas.

The rule came out of the Animal and Plant Health Inspection Service (APHIS) of the USDA. Originally established to block the importation of fruit and vegetables that could carry non-native pests, APHIS has increasingly – and admittedly – changed its focus to *encourage* imports, despite the well-known risks of infestation.

Though the new policy is designed to prevent the infestation of 12 species of exotic pests, the sheer number of fruit and vegetables that can serve as “hosts” for these pests is huge.

Among the 12 species are some of the world’s most virulent and destructive pests (called “nasties” by entomologists), including the Mediterranean fruit fly, which attacks nearly all fleshy fruits and has

infested four continents; and the Melon fly, which has been recorded to use more than 125 different plants as hosts.

The new policy puts every region of the U.S. at risk of infestation, because non-irradiated fruit and vegetables that could carry exotic pests can now be imported into 33 central and northern states. Only after the products are unloaded will they be irradiated, which could allow fruit flies to escape and thrive in these areas. In fact, the USDA has acknowledged – in a federal

court case – that 45 states have significant production of crops that would be vulnerable to the Mexican fruit fly alone.⁸

And, because irradiation extends shelf life by delaying ripening and slowing spoilage, another harmful side-effect is that people will be eating fruits and vegetables that have been shipped and stored for weeks on end. All the while, the food will be losing vitamins and other nutrients, as well as its freshness.

Behind its apparent good intentions,

Case Study: SureBeam Corp.

One of the sponsors of the opening ceremony of the Sacramento Ministerial is the perceived head of the U.S. food irradiation industry: the San Diego-based SureBeam Corporation.

Founded by defense contractor Titan Corporation, SureBeam uses linear accelerators originally designed for the “Star Wars” missile-defense program to irradiate food, with electrons fired nearly to the speed of light.

SureBeam has been increasingly active on the international front of late. The company opened a major food irradiation plant in Rio de Janeiro, Brazil in May 2003. It is working on facilities in the Philippines, Saudi Arabia, Thailand and Vietnam. And, it recently won permission from Australia and New Zealand to irradiate and export breadfruit, carambola, litchi, longan, mango, papaya and rambutan and other tropical fruits. SureBeam is likely to ship these products to lucrative markets in Asia, Europe and North America.

As perhaps the most active private-sector champion of food irradiation in the world, SureBeam dismisses the well-documented side-effects of “treating” food with extremely high doses of ionizing radiation – such as forming chemicals known or suspected to cause cancer and birth defects, destroying

vitamins, breaking down proteins, and ruining flavor. SureBeam has also resorted to questionable marketing tactics, such as calling its process “electronic pasteurization.”

After having trouble getting off the ground in May 2000, SureBeam acknowledged that its troubles probably were not over. In a filing to the U.S. Securities and Exchange Commission, company executives admitted their services “may not gain adequate commercial acceptance or success.” The company went on to say that food irradiation “is opposed by several organized and vocal consumer groups who claim that irradiated food products are unsafe for consumption... We risk not being able to overcome these fears through our educational efforts.”

The company’s troubles continued.

In the summer of 2001, participants of U.S. Food and Drug Administration focus groups said *unanimously* that companies should not be permitted to label irradiated foods “electronically pasteurized” or “cold pasteurized.” These euphemisms were called “sneaky,” “misleading,” “deceitful,” “dishonest” and “a fake.” This struck a blow to efforts by SureBeam and other irradiation companies to weaken federal labeling rules,

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the APHIS rule is flawed in several significant ways.

First, the new policy contains no provisions whatsoever for enhancing the export of U.S.-grown fruits and vegetables. This could spell further economic hardship for U.S. agriculture, which has suffered huge financial losses due to ostensibly reciprocal trade agreements - such as NAFTA - that have not lived up to their promises of increased access to foreign

markets. With imports on the rise, U.S. agriculture exports fell from a record of \$60 billion in 1996 to \$53 billion in 2001.

The rule will further poison the marketplace for American growers, as imports from countries with low labor costs and lax environmental laws will continue to increase.

In recent testimony to the U.S. Congress, a representative of the United Fresh Fruit & Vegetable Association stated:

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which require irradiated foods sold in stores to be labeled "Treated by Irradiation" or "Treated with Radiation."

In July 2001, the Pick 'n Save grocery store chain discontinued SureBeam-irradiated ground beef in its Milwaukee-area stores. "There's been absolutely no customer acceptance," a company spokesperson said.

In August 2001, Public Citizen and the Center for Food Safety filed a false advertising complaint with the Federal Trade Commission against SureBeam, which was calling its process "electronic pasteurization."

In September 2001, the U.S. Department of Agriculture refuted SureBeam's claim that irradiation is the equivalent of pasteurization, which kills food-borne pathogens with heat. The Federal Trade Commission began an inquiry into SureBeam's advertising practices.

In November 2001, SureBeam client Huisken Meats withdrew plans to build an irradiation facility in Sauk Rapids, a small community near Minneapolis-St. Paul, after residents requested that an environmental review of the plant be conducted.

In February 2002, the Save Mart grocery store chain discontinued SureBeam-irradiated ground beef in its stores in the Modesto, Cal. area.

In April 2002, SureBeam announced losses of \$74 million for 2001, due in part to

"marketing initiatives," which have included television and radio ads, billboards and newspaper coupons. These losses came as SureBeam executives and board members made millions of dollars by cashing in stock options. From Oct. 23, 2001 to March 13, 2002, six SureBeam executives made \$16 million. Two executives pocketed more than \$5 million apiece, according to the U.S. Securities and Exchange Commission (SEC).

Also in April 2002, an article in *Forbes*, "Accounting Acrobatics," stated that SureBeam was crediting its ledger with revenues even before sending out invoices to clients. "SureBeam," the article states, "needs a little disinfectant on its balance sheet."

In August 2002, SureBeam severed its financial ties with Titan, driving down SureBeam's stock price by two-thirds to an all-time low of \$1.50. In May 2003, SureBeam reported a loss of \$6.7 million for the first quarter, bringing the company's total losses since 1997 to \$120 million, according to the SEC.

Plagued by huge financial losses, test-market failures, public relations blunders, and allegations of false advertising and making misleading statements to investors, the company faces an uncertain future. For that matter, the future of the global food irradiation movement may hang in the balance.

“Fruit and vegetable imports receive virtually open access to the U.S. market. Unfortunately, many of our trading partners have failed to follow our example. Such unfettered access has resulted in increasing strains on many sectors of our industry. The impact of these disparities have resulted in not only lost markets and economic strains on the industry, but also our present trade deficit in horticultural products.”⁹

Instead of using complicated thermal and chemical processes that vary from crop to crop, exporters will be able to kill invasive pests and gain access to U.S. markets with the flip of a switch.

Rather than passing a rule that could lead to infestation, the U.S. government should focus on strengthening domestic agricultural production and implement safeguards to protect small-scale family farmers and producers.

Second, the APHIS rule will likely hit California the hardest. With \$28 billion in annual sales, California is by far the largest agricultural producer in the U.S. The state ranks first in the production of many crops, including citrus, grape, tomato, avocado, peach, cantaloupe, nectarine, plum, honeydew, apricot and kiwifruit. And it ranks second in orange, watermelon, pear, grapefruit and tangerine.¹⁰

Each of these crops serves as a host to one or more of the pests listed in the APHIS rule. Now that these crops can simply be irradiated and exported to the U.S., growers in California – and the rest of the country, for that matter – will face even more competition. For example, irradiation could stoke the importation of grapefruit and oranges from Mexico, grapes from Algeria, and kiwifruit and tangerines from Greece.

Third, the APHIS rule contains no scientific or any other type of justification whatsoever for allowing the importation of non-irradiated fruit and vegetables originating from pest-infested countries into 33 central and northern states. The rule merely states that fruit flies “would not survive the winter” in these states. It defies explanation why the USDA would allow the importation of even more fruit and vegetables that can serve as hosts for invasive pests without fully studying the matter. This oversight becomes harder to believe when one considers that infestations cost the USDA and the U.S. agriculture industry at least \$33 million per year.¹¹

Also troublesome is the fact that the USDA – as it is – inspects less than 2 percent of imported agricultural products. The new policy is expected to vastly expand imports, thus increasing the risk of further infestation.

Speaking at the Chicago conference, a USDA official went so far as to say that “there is no good way of knowing” whether live invasive pests will enter the country under the ruling, and that the USDA will have to depend on paperwork, not visual inspection.¹²

Further, the USDA itself says that, in the absence of adequate management, fruit flies could cause \$1.8 billion in damage per year.¹³ (All told, the 50,000 foreign plant and animal species that have become established in the U.S. over the past 200 years have caused an estimated \$138 billion in damage per year.¹⁴)

The USDA also seems to be ignoring what one of the agency’s own risk analysis officials recently told the U.S. General Accounting Office: there is a general lack of information about the success of measures to prevent the importation of invasive

species.¹⁵ Though requested on several occasions, APHIS has produced infestation risk assessments for only 4 of the 12 species covered under the new policy.

IRRADIATION AND DUMPING

Dumping is a nasty term for a nasty practice: the selling of surplus products, which might otherwise spoil and become worthless, at prices far below the prevailing rate. This occurs often to the detriment of farmers and ranchers who cannot match these prices, thus endangering their livelihoods.

Industrialized, factory-style farming in the northern nations facilitates the cheap mass production of food. Surpluses that cannot be locally sold might then be government subsidized for export and flood the global market, driving down world prices and undermining domestic competition within importing countries.

Such dumping spells disaster for farmers and small-scale producers who cannot compete with unrealistically low prices created by government bailouts in the wealthy global North. The inclusion of agriculture trade policies within the framework of the World Trade Organization, NAFTA and other international arrangements has further aggravated the wide-scale dumping of agricultural products.

Under global trade agreements, countries may be forced to import goods that undersell domestic produce. This economic threat can also have devastating effects on the food security, environment and social fabric of the global South.

Moreover, countries may be forced to import foods that do not satisfy national standards. Under the WTO's Sanitary and

Phytosanitary Agreement, a nation's domestic food safety laws and its use of the precautionary principle can be challenged as "barriers to trade" through the WTO's powerful and binding dispute resolution system.

Wide-scale irradiation of food will lead to an increase in dumping. With a shelf life extended up to three times its normal length, surpluses of irradiated food will grow, and food conglomerates will need to dump these stores on whoever will take them, namely the economically disenfranchised peoples of the producing nations. Due to high capital costs, staples will be irradiated in industrialized countries and subsequently dumped in the global South.

As farmers in producing nations will not be able to compete with these cheap imports, their land and labor will become susceptible to ventures aimed at growing cash crops of tropical produce. Monoculture crops will be irradiated and shipped at low cost back to the industrialized world. Agricultural diversity, and hence ecological sustainability, will suffer while the focus will shift to the bottom line.

Dumping, therefore, will occur in both directions: surplus staples to the global South, and higher-priced products to the global North, while economic autonomy, food sovereignty and environmental sustainability are thrown out the window. Not only will the dumping of irradiated foods harm local economies, but it also stands to harm the health of local populations.

Irradiated food has not been proven safe for human consumption, and research has associated irradiated foods with cancer, mutations, stillbirths, organ damage, stunted growth, immune system malfunction, nutritional deficiencies, and other

serious health problems in test animals.

Moreover, the irradiation of food drastically lowers its nutritional value. Vitamins suffer substantial losses from irradiation, which accelerates during lengthened storage time. Vitamins are further lost during cooking.¹⁶ Irradiated foods lack sufficient nutrients and abound in health hazards. The global South should not be forced to consume risky foods for the sake of global free trade and corporate profits.

In addition to the dumping of irradiated foods through trade agreements, irradiated surpluses will likely be channeled through food aid programs. The U.S. is currently sending genetically modified foods, unlabeled as such, in disaster relief and food aid to developing countries all over the world.¹⁷ It is unlikely that the U.S. would suffer any moral qualms over passing out irradiated staples to the world's starving millions.

Feeding the world with irradiated products is on the public relations agenda of international agencies and multinational corporations alike. In an effort to curry favor among relief groups and drape themselves in nobility, the International Atomic Energy Agency, the "Star Wars" defense contractor Titan Corporation and its food irradiation affiliate SureBeam Corporation, and other transnational entities have put forth dubious proposals to marshal irradiation as a silver bullet to end world hunger. They market food irradiation as a high-tech weapon in the war against starvation and malnutrition, overlooking the political roots of poverty and hunger.

Food irradiation combined with agricultural dumping will prove to be an obstacle to sustainable development. An increased consolidation of the industrialized food supply will create a high level of

dependence on import-export relationships, while undermining food security and sovereignty, basic rights to access food and to define domestic food and agriculture policies.¹⁸

The industrialized world has long exploited the global South through a multitude of detrimental political and economic policies and practices.

As if enough damage hadn't been incurred already, the spread of food irradiation promises to dump more inappropriate development strategies, more counterproductive trade policies, and more health risks on producing nations.

IRRADIATION WILL NOT FEED THE WORLD

That international organizations and transnational corporations are attempting to sell irradiated food as a solution to world hunger is highly alarming in light of many unresolved health concerns.

And as an Indian scientist has framed it: "In many developing countries, malnutrition is widely prevalent and there is evidence that malnutrition could adversely influence the toxicity of many drugs. In such situations, the question of food irradiation thus acquires a new dimension."¹⁹

The last thing the world's starving millions need is food of dubious quality, safety and nutritional value.

Irradiation depletes many of the vitamins and nutrients in food, thus robbing consumers of its health benefits. Irradiation can destroy between 2 and 95 percent of a food's vitamins and also destroys the chemical composition of proteins, fats and carbohydrates.²⁰

The depletion of nutrients is

exacerbated by the extended shelf life of irradiated food, and further still by cooking.

Again, this is hardly a recipe for ending world hunger. On the contrary, offering irradiated food to starving people is just another non-solution.

As one scientist has summed up: “The nutritional erosion that would result from widespread irradiation of staple foods would most seriously affect those people in any country who cannot already make ideal food choices because of constraints on income.”²¹

The world’s poor and hungry simply cannot afford to eat empty-calorie irradiated food.

The industrialized world has already established the practice of shipping genetically modified foods as aid to the global South,²² and irradiated food won’t be far behind. As foreseen in the 1980s: “Irradiation may be used to extend the storage life of the developed world’s mountains of surplus food, so that these nutritionally depleted stockpiles can be off-loaded onto third world countries – adding insult to injury by calling it ‘aid’.”²³

There is already more than enough food to feed the world, and selling expensive irradiation facilities to the global South will not solve the problems of poverty or hunger.

THE PRIME MOVERS

Surprisingly, among the most active champions of food irradiation is the World Health Organization (WHO), whose stated mission is to preserve and protect the health of every person on the planet – not to promote technologies that very likely could do the opposite.

Instead of analyzing whether irradiated

foods are safe, wholesome and nutritious, the WHO, International Atomic Energy Agency (IAEA) and the United Nations’ Food and Agriculture Organization (FAO) by the end of the 1980s had shifted almost completely to studying how they could persuade more countries to legalize irradiated food, more corporations to sell it and more people around the world to eat it.

Eight of the 12 major joint WHO/FAO/IAEA conferences held between 1972 and 1988 dealt primarily not with safety or wholesomeness, but legalization, commercialization, trade, information control and consumer acceptance. The official reports of all eight meetings were published by the IAEA.

In 1977, irradiation planners met in the Netherlands to brainstorm ways to encourage more countries to legalize irradiation for the widest variety of foods possible.²⁴ At this meeting, the Codex Alimentarius Commission was discussed at length for the first time. Codex, a joint program of the FAO and WHO based in Rome, was created in 1963 to set food safety standards for most of the world’s countries.

Though not legally binding at the time, Codex standards became *de facto* regulations for many countries that lacked the resources and expertise to establish regulations of their own. As a natural extension of this, Western nations were largely responsible for proposing and approving Codex standards, which were then adopted by the global South.

With this framework in place, the global food irradiation movement – mainly those from Belgium, Canada, the Netherlands and the United States and other Western countries – sought to utilize the Codex system to create global irradiation

standards in their image. This strategy – which has been adopted by many other international, quasi-governmental agencies – has become known as “harmonization.”

The pipeline was ready-made: The FAO and WHO oversee Codex, and the agencies hold two of the three seats aboard the Joint FAO/IAEA/WHO Expert Committee on food irradiation. (Today, Codex standards are enforceable by the World Trade Organization, thus intensifying efforts to harmonize irradiation and hundreds of other food safety standards.)

It is perhaps because of these intimate relationships that discussions were brief and to the point. The report from the 1977 meeting states:

“Harmonization of national legislation and regulatory procedures will enhance confidence among trading nations... It is obviously important for the relevant national regulations governing food irradiation to be harmonized...as to facilitate the international movement of irradiated food.”²⁵

This effort has culminated in a Codex proposal to completely deregulate food irradiation by allowing any food to be irradiated at any dose, as long as an undefined “technological purpose” is met. This proposal is expected to be approved at the next Codex meeting in July 2003.

This is a crucial step for global traders, as extremely high doses of radiation are necessary to sterilize food – an unattractive-sounding, though a perceived necessity, for corporations and governments desiring to ship food thousands of miles without having to refrigerate it.

Because Codex standards are enforceable through the World Trade Organization, member countries will not be able to block the importation of foods that are

irradiated under conditions that differ from their own regulations. Countries wishing to stand their ground and defend their own standard – such as most of the European Union – could face sanctions and court action if they do not comply with Codex standards.

THE FUTURE

The big picture, envisioned by global food producers and traders, is one that includes irradiation as a tool to further the industrialization, consolidation and globalization of food production and distribution systems; one that includes multi-billion-dollar, multinational corporations utilizing labor and land in the global South to produce their wares; one that has little concern for local economies that have relied on agricultural systems that date back hundreds or even thousands of years; and one that will worsen trends that have already harmed agriculture producers throughout the world.

The momentum behind the irradiation movement has never been greater. Fifty years after it was championed by President Eisenhower’s “Atoms for Peace” program; 40 years after the first U.S. irradiated food approvals were issued; 30 years after waning interest in the technology was reborn; and 20 years after the current wave of approvals by the U.S. Food and Drug Administration began, food irradiation may have finally caught its stride.

At the very minimum, the proliferation of this technology and these foods must be closely monitored, and the cause of any health or safety problems must be ferreted out and brought to the attention of government agencies and non-government organizations. Ideally, however, farmers, health

organizations, consumer groups and any organizations concerned about the preservation of sustainable food production methods should raise awareness about the potential dangers of food irradiation and block its expansion.

Leaders of the global food irradiation movement are growing in confidence, almost on a day-by-day basis. Only a strong and consistent opposition will prevent them from achieving their goals.

RECOMMENDATIONS

- The U.S. Department of Agriculture should conduct a comprehensive analysis of the potential effects of the importation of irradiated foods on the U.S. agriculture industry and, based on the findings, work to mitigate any negative effects, particularly

on small- and medium-scale operations.

- The U.S. government, through the appropriate agencies, should discourage the expansion of industrialized agriculture, and encourage, via a broad range of policies and incentives, the growth of small- and medium-scale operations. These policies and incentives should include market support, and research and development into sustainable practices.

- The World Health Organization should rescind its 1999 statement that any food can be irradiated at any dose without health risks, and the U.S. Food and Drug Administration should implement a moratorium on any additional food irradiation approvals, until the agencies conduct new reviews of the scientific record, including recent evidence revealing adverse health effects in test animals.

NOTES

- ¹ Personal communication with Arnold Foudin, Plant Protection and Quarantine, Animal and Plant Health Inspection Service (APHIS), U.S. Department of Agriculture (USDA).
- ² Ibid.
- ^{2a} *Irradiated Foods*. American Council on Science and Health, New York, NY, 2003.
- ³ Gerald Moy, World Health Organization, presentation at the First World Congress on Food Irradiation, Chicago, May 5-7, 2003.
- ⁴ Ronald Eustice, Minnesota Beef Council, presentation at the First World Congress on Food Irradiation, Chicago, May 5-7, 2003.
- ⁵ Alan Green, USDA, presentation at the First World Congress on Food Irradiation, Chicago, May 5-7, 2003.
- ⁶ Jeffrey Barach, National Food Processors Association, presentation at the First World Congress on Food Irradiation, Chicago, May 5-7, 2003.
- ⁷ Dieter Ehlermann, Linac Technologies, Orsay, France, presentation at the First World Congress on Food Irradiation, Chicago, May 5-7, 2003.
- ⁸ *California Avocado Commission et al v. Ann M. Veneman et al*. U.S. District Court, Eastern District of California, CIV-F-01-6578 REC/SMS, filed Dec. 18, 2001.
- ⁹ Agriculture Trade Program Testimony. Statement by United Fresh Fruit & Vegetable Association, Farm Bill Oversight Hearing on International Trade, Committee on Agriculture, United States House of Representatives, June 28, 2001.

- ¹⁰ Agriculture Statistical Review, California Department of Food & Agriculture.
- ¹¹ Fruit Fly Program Information. Plant Protection and Quarantine, APHIS, USDA.
- ¹² Op cit., Green, USDA.
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- ¹⁶ Webb, Tony et al. *Food Irradiation: Who Wants It?* Wellingborough, England: Thorsons Publishers, 1987.
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- ²¹ Ibid.
- ²² Friends of the Earth, <www.foe.org/foodaid>.
- ²³ Op cit., Webb et al, 1987.
- ²⁴ *International Acceptance of Irradiated Food: Legal Aspects*. Report of a Joint FAO/IAEA/WHO Advisory Group, Wageningen, Nov. 28 - Dec. 1, 1977. Legal Series No. 11, Vienna: International Atomic Energy Agency, 1979.
- ²⁵ Ibid.



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