

How Safe Is Your Dinner?

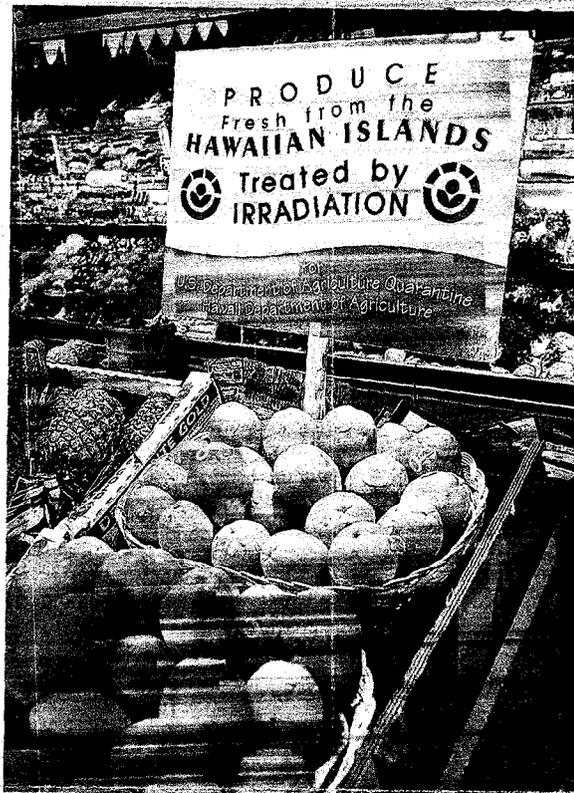
Irradiation kills lethal bacteria in food and keeps it fresher longer. Yet it sounds so scary! How to balance the pros and cons of a technique that could revolutionize the way we eat.

by Betty Holcomb

Each year millions of Americans get sick from eating contaminated food—meats, fruits, or vegetables carrying dangerous bacteria such as *E. coli*, salmonella, and *Listeria*. And about 5,000 die. In 1993, the fatalities included three children who ate *E. coli* along with their fast-food hamburgers; almost two years ago those who died included 21 people who ate hot dogs and cold cuts tainted with *Listeria*.

There is a technology that could have prevented nearly all those deaths—and it's been approved for use on many foods for decades. That process is irradiation, but it's rarely used. "The term scares people," says Rhona Applebaum, chief scientist and lobbyist for the National Food Processors Association. "When they see it on a label, they regard it as a warning, almost as a skull and crossbones."

But get ready. Irradiated food may be coming to a supermarket near you. The country's largest poultry producer,



Tyson Foods, of Springdale, AR, and two of its biggest meat packers, IBP, Inc., and Excel Corporation, have announced that they will test-market irradiated poultry and beef nationally as early as this spring.

Q What is irradiation?

A Quick shots of low-level radiation—akin to medical X rays—are beamed through food. These radiant beams kill insects, mold, and bacteria, but leave the food largely unaffected.

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The beans can be generated by various energy sources: The radioactive isotope cobalt-60 irradiates food with gamma rays; and electricity can be used to produce either electron beams or X rays. The process will add about five cents per pound to the cost of ground meat.

Q What foods can be irradiated now?

A The Food and Drug Administration (FDA) first approved the use of radiation to kill insects in wheat and flour in 1963. Since then, the FDA has approved its use on poultry, pork, vegetables, and fruits. Final regulations for irradiation of beef were issued in December, and the FDA is considering

irradiation of seafood and processed meats such as hot dogs and cold cuts.

Q Does that mean there are irradiated foods in my supermarket now?

A Probably not—and by law any irradiated product must be clearly labeled. Only a few hundred grocers currently carry irradiated produce. Fewer still carry irradiated poultry, although you're more likely to have seen or eaten it if you live near the country's one operating food-irradiation facility. Food Technology Service, Inc., a facility in Mulberry, FL, irradiates poultry for two local meat retailers, various cruise lines, and food distributors supplying restaurants, hotels, and clubs in Florida, Georgia, Alabama, and South Carolina. You wouldn't know if you ate irradiated food in a restaurant, however; restaurateurs are not required to disclose that they use irradiated products.

Q Does this have anything to do with the GM, or genetically modified, foods I've heard about?

A No. Genetic modification refers to a new method of plant breeding that permits scientists to improve food

THE LABELING DEBATE

The Food and Drug Administration currently requires any irradiated food to be clearly labeled with the words *treated with radiation* or *treated by irradiation*, and with a "radura" symbol—a flower inside a broken circle. But Congress has asked the FDA to review the labeling; some meat-packing and food-processing groups would prefer to use the term "cold pasteurization."

Not surprisingly, consumer advocates have given this idea a cold shoulder. "If there's one thing most people could agree on, it's that we have the right to know how our food has been treated or processed. It's crucial that the labels stay on this food," says Colleen Dermody of the Center for Science in the Public Interest in Washington, DC.

At this point, the FDA does not plan to change labeling requirements, but concerned consumers who want to weigh in can write the agency, care of Commissioner Jane E. Henney, Parklawn Building, Room 14-71, 5600 Fishers Lane, Rockville, MD 20857, or send e-mail to jhenney@oc.fda.gov.

BY ROARK JOHNSON

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WHOSE SIDE ARE YOU ON?

Proponents Say	Critics Say
Irradiation can kill up to 99 percent of the pests and bacteria in food that make people sick.	Irradiation may give consumers false confidence. Treated food can be recontaminated once the packaging is opened.
Irradiation can be used to protect immune-compromised individuals, such as AIDS patients and the elderly, from food-borne illness.	Irradiation can be used on a limited number of foods. Fresh produce such as lettuce, grapes, tomatoes, and cucumbers turns mushy and unpalatable.
Zapping food with radiation destroys no more vitamins and other nutrients than do cooking, freezing, canning, and other conventional processes.	The process also lowers levels of thiamine, carotene, vitamin C, and vitamin E; the more food that's irradiated, the more consumers will have to compensate for lost vitamins.
The compounds created during irradiation—called radiolytic products—are identical to those formed during cooking, canning, and other methods of food preparation.	We don't know much about the potential long-term health effects of radiolytic compounds on humans.
Irradiation delays ripening and sprouting, so food can be stored longer. Potatoes, garlic, and onions stop sprouting altogether; strawberries, bananas, mangoes, and other fruits take longer to ripen.	Longer shelf lives may make farmers and grocers happy, but environmentally conscious consumers may still prefer freshly picked fruits and vegetables that have their full supply of vitamins.
Agencies including the U.S. Department of Agriculture, the American Medical Association, and the World Health Organization consider irradiation safe. And about 40 other countries have approved use of the technology for at least one food.	Although irradiation has been studied for more than 50 years, there have been no long-term studies on human consumption of irradiated foods. Studies so far are limited to animals, and some critics say a number are flawed.

crops by introducing a copy of a gene for a specific trait (for instance, pest resistance). GM foods are increasingly controversial. Environmentalists fear that crops that kill pests may also kill beneficial insects. Some European countries say these foods aren't environmentally safe, and don't want to accept them as imports.

GM foods are already in many products made in the United States, including powdered infant formula, soy burgers, taco shells, and muffin mixes. Products on supermarket shelves are not currently required to bear labels indicating whether they contain genetically modified ingredients.

Q Does irradiation make food radioactive?

A Absolutely not. Food never comes into direct contact with the radiation source during the process, and the amounts of radiation used are strictly controlled. It's similar to what happens when you get an X ray: The rays pass through your body, but don't leave you radioactive. Though some people are legitimately concerned about the health risks that repeated X rays pose, this situation is different. Irradiated food is exposed to radiation only once.

Q Does irradiated food taste any different?

A Taste tests have found that irradiated and nonirradiated hamburgers cooked to the same degree of doneness taste about the same. However, if you prefer the taste of rarer burgers, buying irradiated beef means you can enjoy them without worrying about getting sick.

Q What about nuclear accidents?

A Rest easy. It isn't possible for a nuclear meltdown to occur in a gamma irradiator, because the cobalt-

60 used in such facilities doesn't produce neutrons. Irradiation facilities that use electron beams or X rays aren't nuclear facilities.

Q But won't all these plants produce radioactive waste?

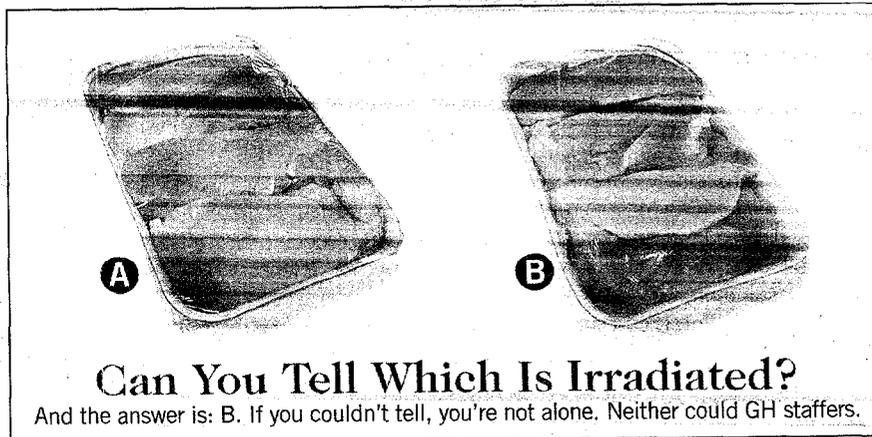
A Electron-beam and X-ray plants do not produce radioactive waste, because they use electricity to generate radiant energy—just like the microwave oven in your kitchen. Gamma-ray facilities do produce small quantities of radioactive waste, and critics of the process are concerned that if the technology becomes widespread, disposal could become a problem.

Q So what's the bottom line?

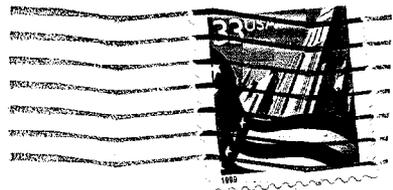
A The idea of eating irradiated food makes many of us uncomfortable, but the benefits do seem to outweigh the potential risks. Many of the dangerous germs that cause food poisoning—such as E. coli and Listeria—have proven stubbornly hard to kill by any other means. Irradiating certain foods, especially red meat, translates into fewer people getting sick and dying from food poisoning—particularly children and the elderly, who may be more vulnerable to these bacteria.

That said, irradiation will never replace proper food handling procedures: If you cut raw irradiated chicken with the same knife you used on a head of lettuce infected with E. coli, the poultry may be recontaminated and could make you sick.

"Some of us find the idea of irradiated food so frightening that we don't want to believe it's safe," says David A. Kessler, M.D., dean of the Yale University School of Medicine and former head of the FDA. "But the fact is, irradiation can make our food supply safer—and that's an important goal." ★



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