



University of California
Cooperative Extension
Tulare County

Agriculture and Natural Resources



Prepared by: *Cathi Lamp*

RADIATION, HEALTH, AND THE WORLD AROUND US

Our world is naturally radioactive. Our bodies contain naturally occurring radioactive substances, and cosmic radiation is present in the air and space around us and in both natural and artificial substances that we consume each day.

Until the invention of the X-ray tube in 1895, the only radiation in existence was natural radiation. One year later in 1896, natural radioactivity was discovered and was used for medical and research purposes until 1934, when the first man-made radioactive materials were produced.

Despite irradiation's many positive contributions to society, there remain questions about its safety.

Irradiation technology is already being used in the United States on a daily basis to protect consumers, for example, to sterilize medical equipment (surgical gloves and bandages), in hygiene (tampons), and in products' packaging (plastic containers for sealed, individual-size cream containers). Since September 11, it is being used to disinfect the mail.

Based on years of scientific research, irradiation (in much smaller doses than that used to safeguard the mail) has also been approved for use to destroy illness-inducing bacteria in poultry and meat and is used to make germ-free herbs and spices.

Food irradiation, simply speaking, is the treatment of food with a certain type of energy. The irradiation process involves exposure of the food, either packaged or in bulk, to carefully controlled amounts of ionizing radiation for a prescribed period of time to achieve specific objectives. Food irradiation can prevent the growth of microorganisms that cause food spoilage, such as bacteria and

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molds. It can also lengthen the period of ripeness of fruits and vegetables. This technology can prolong the freshness of many foods and prevent certain foodborne illnesses.

Food has been safely irradiated in the United States for over 30 years, and more than 40 countries around the world approve the process. In the United States, the Food and Drug Administration has approved the use of food irradiation for fresh meat (including ground beef, pork, lamb, and poultry), fresh fruits and vegetables, seeds for sprouting, shell eggs and spices.

The most significant public health benefit of food irradiation is that it stops the spread of foodborne disease by dramatically reducing or eliminating the number of disease-causing bacteria and other harmful organisms that threaten our food supply and us. Most consumers have heard of outbreaks of foodborne illnesses caused by such organisms as Salmonella, Escherichia coli, Staphylococcus aureus, Listeria monocytogenes, Campylobacter jejuni and Toxoplasma gondii. Food irradiation could have greatly reduced or completely prevented many of these outbreaks. A copy of Food Irradiation: A Global Food Safety Tool is available on-line at <http://ific.org>.

Source: Food Insight, From Mail Time to Mealtime, Irradiation Can Bring Added Safety

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