



# Facts about Food Irradiation

## Q:

**1** Is it true that consumers are opposed to buying irradiated food?

## A:

**1** Opinion polls conducted in several Western countries tend to indicate that the majority of consumers would be unwilling to buy irradiated food. Most of these surveys, however, were made by telephone or through on-the-spot interviews *without providing sufficient background information*

### *Irradiated Foods and the Consumer*

on the safety, benefits, and limitations of food irradiation. Uninformed consumers often do not distinguish irradiated food from radioactive food contaminated with radionuclides.

With regard to food, consumers' attitudes tend to be conservative towards acceptance of any new food and especially new food technology. This was clearly brought out, for example, when pasteurization of milk was introduced.

When consumers are given the opportunity to offer an informed opinion or make an informed choice, the results are different. This is substantiated by opinion polls conducted in connection with the provisions of accurate, factual information which yield more positive results. In market trials of labelled irradiated foods sold alongside the non-irradiated ones, consumers willingly bought irradiated products, and in many cases, expressed a preference for the irradiated product. Marketing trials have been conducted over the past several years in Argentina, Bangladesh, Chile, China, France, Hungary, Indonesia, Israel, Philippines, Poland, Thailand, and the USA — all with results favourable to irradiated food. ■



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ICGFI is an international group of experts designated by Governments to evaluate and advise on global activities of food irradiation. It was established under the aegis of the Food and Agriculture Organization of the United Nations, World Health Organization, and International Atomic Energy Agency.



**2** What irradiated food products have been commercially marketed on a trial basis?

**2** Many irradiated food products have been sold in a number of marketing trials in countries over the past 10 years. They include apples, potatoes, onions, strawberries, mangoes, papaya, dried fish, and fermented pork sausages. Consumer response to the irradiated products was always positive.

**Mangoes.** In September 1986, about 3 tons of mangoes were irradiated up to a dose of 1 kilogray in Puerto Rico to eliminate fruitfly infestation and delay spoilage. They were then flown to Miami, Florida, for marketing. They were labelled as having been irradiated and sold (with an accompanying information brochure) alongside nonirradiated mangoes at the Farmers Market in North Miami Beach. The irradiated mangoes, sold at the same or higher price than nonirradiated ones, were bought by shoppers who showed preference for the irradiated ones.

**Papaya.** In March 1987, a shipment of Hawaiian papaya was flown to Los Angeles, California, and irradiated at a dose of 0.41-0.51 kilogray to satisfy quarantine regulations. The papayas were fully labelled according to US Food and Drug Administration requirements, and then sold alongside papayas that had been hot-water dipped in Hawaii at two supermarkets in Anaheim and Irvine, California. Over 200 consumer questionnaires were completed during sales of the two lots of papaya. At the end of the day's market test, 60 kilograms of irradiated papaya and 5.1 kilograms of hot-water dipped papaya were sold, representing a ratio of more than 11:1 in favour of irradiated papaya. Two of every three participating consumers at Anaheim, and four of five at Irvine, stated that they would buy irradiated papaya again.

**Strawberries.** In separate marketing trials in 1987 and 1988 in Lyon, France, seven tonnes of strawberries irradiated at 2 kilogray were put on sale by a super-market chain. The product was labelled with the "Radura" logo plus a statement of "ionization" and was sold at slightly higher cost than nonirradiated strawberries. Consumers said they bought irradiated strawberries because of their better quality.

**Fermented pork sausages.** In 1986, a popular fermented pork sausage (Nham) in Thailand was irradiated and sold alongside nonirradiated Nham in a few supermarkets in Bangkok. Normally consumed "raw" (without cooking or heating), Nham is often contaminated by microbial pathogens including *Salmonella* and occasionally by a parasite, *Trichinella spiralis*. To control these organisms, Nham was irradiated at a minimum dose of 2 kilogray and labelled as required by the Thai Food and Drug Administration. A survey of 138 consumers in 1986 showed that 34.1% bought irradiated Nham out of curiosity and 65.9% bought it because they believed it was safe from microbes. More than nine out of 10 consumers, 94.9%, indicated that they would buy irradiated Nham again. In the 3 months during which the survey was conducted in 1986, irradiated Nham outsold nonirradiated Nham by a ratio of 10:1.

In these tests and others, the most significant factor favouring irradiated food appears to be superior quality and safety. In none of these tests, which were carried out under actual market conditions, was there evidence to indicate that informed customers will not accept irradiated foods. ■

**Scientific and Technical References:**

"Summary of the Puerto Rico Mango Consumer Test Marketing", by Giddings, G.C., *Food Irradiation Newsletter* 10, (1986).

"Consumer In-Store Response to Irradiated Papayas", by C.M. Bruhn and J.W. Noell, *Food Technology*, (September 1987).

"How to Win Consumer Acceptance in the Marketing of Irradiated Food", by P. Moog, *Factors Affecting Practical Application of Food Irradiation*, IAEA TECDOC-544 (1988).

"Consumer Acceptance of Irradiated Nham (fermented pork sausage)", by Y.Prachasitthisak, U. Pringsulka, and S. Chareon, *Food Irradiation Newsletter* 13, (1989).

**3** Are irradiated foods being sold on a regular basis?

**3** Yes. Most irradiated food currently produced in 23 countries is destined for food processing industries and institutional markets (for example, catering services and restaurants). However, in some countries, such as France, Netherlands, South Africa, and Thailand, commercial quantities of some irradiated food items — including strawberries, mangoes, bananas, shrimp, frog legs, spices, and fermented pork sausages — have been sold on a regular basis. These irradiated food items, labelled to indicate the treatment and its purpose, have been successfully sold alongside their non-irradiated counterparts. Consumers have shown no apparent reluctance to purchase the irradiated food products. ■



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