

conducted at the U. S. Army's food laboratory at Natick, Mass. The sterilization technology, which destroys all microorganisms, is aimed at processing perishable foods for long-term storage without refrigeration. The Army has successfully demonstrated the process for beef, pork, chicken, smoked ham, frankfurters, codfish cakes, shrimp, ground beef, pork sausage, and corned beef.

Pasteurizing foodstuffs with low doses of gamma rays from cobalt-60 or cesium-137 can destroy enough of the normal spoilage bacteria in fish, fruit, fowl, and vegetables to delay rot and extend the prime fresh state. The process can extend the season of the fragile strawberry and can provide more time for transport so that ocean delicacies like fresh haddock, cod, and shrimp can be served by the Midwest housewife. Irradiation can replace the residue-depositing chemical fumigants currently used to destroy fruit flies on papayas so this tasty tropical fruit can meet Department of Agriculture quarantine requirements when shipped from Hawaii. Irradiation can also control salmonella infections in food products, an international health problem.

Radiation pasteurization can control spoilage caused by bacteria, yeasts, and molds in such foods as strawberries, fish, chicken, and citrus fruits. It can control insect and parasite infestations on wheat and wheat products and dried fruits, replacing chemical pesticides and their potential residue danger. Radiation energy can slow ripening or aging in fruits and vegetables. A delayed maturation can be achieved for bananas, mushrooms, and mangoes, extending their prime marketing period. Irradiation can also achieve sprout inhibition in stored potatoes and onions.

The technique is complicated, however. Although the product does not become radioactive, various foods react differently to radiation. Care must be taken to employ the proper dose at the desired stages of development of the food to avoid alteration in taste and appearance while deriving the hoped-for benefit of irradiation. The Food and Drug Administration of the U. S. Department of Health, Education, and Welfare has the ultimate responsibility for issuing the regulation allowing public use of irradiated foods. Decisions are arrived at after careful review of detailed research data, which must demonstrate that the food item processed with radiation is in fact wholesome and safe for unlimited human consumption. This FDA requirement, by the way, is not unique for radiation; it applies equally to all food additives.

In 1968 the FDA rejected as insufficient the research data supporting the U. S. Army's petition for approval of radiation-sterilized canned