

2002

Would You Answer Some Quations About Food Irradiation?

Charlotte Brennand

Follow this and additional works at: http://digitalcommons.usu.edu/extension_histall

 Part of the [Education Commons](#)

Warning: The information in this series may be obsolete. It is presented here for historical purposes only. For the most up to date information please visit [The Utah State University Cooperative Extension Office](#)

Recommended Citation

Brennand, Charlotte, "Would You Answer Some Quations About Food Irradiation?" (2002). *All Archived Publications*. Paper 343.
http://digitalcommons.usu.edu/extension_histall/343

This Article is brought to you for free and open access by the Archived USU Extension Publications at DigitalCommons@USU. It has been accepted for inclusion in All Archived Publications by an authorized administrator of DigitalCommons@USU. For more information, please contact dylan.burns@usu.edu.





A weekly question/answer column

Would You Answer Some Questions About Food Irradiation?

Charlotte Brennand answers:*

What is irradiation and why is food irradiated?

Irradiation is a form of low-level radiation that reduces or eliminates microorganisms without cooking the food or causing the food to become radioactive. Food is irradiated to provide the same benefits as when it is processed by heat, refrigeration, freezing or treated with chemicals—to destroy insects, fungi or bacteria that cause food to spoil or cause human disease and to make it possible to keep food longer and in better condition in warehouses and homes.

Are irradiated foods still nutritious?

Yes. Irradiated foods are wholesome and nutritious. All known methods of food processing—and even storing food at room temperature for a few hours after harvesting—can lower the content of some nutrients, such as vitamins. At low doses of radiation, nutrient losses are either not measurable or, if they can be measured, are not significant. At the higher doses used to extend shelf life or control harmful bacteria, nutritional losses are less than or about the same as cooking and freezing.

Does irradiation make food radioactive?

No. Radioactivity in foods can occur by two routes: contamination of foods with radioactive substances or by penetration of energy into the nuclei of the atoms that make up the food. The irradiation process involves passing food through an irradiation field; however, the food itself never contacts a radioactive substance. Also, the ionizing radiation used by irradiators is not strong enough to disintegrate the nucleus of even one atom of a food molecule.

Does eating irradiated food present long term health risks?

No. Federal government and other scientists reviewed several hundred studies on the effects of food irradiation before reaching conclusions about the general safety of the treatment. In order to make recommendations specifically about poultry irradiation, U.S. Food and Drug Administration scientists reviewed findings from additional relevant studies. Independent scientific committees in Denmark, Sweden, United Kingdom and Canada also have reaffirmed the safety of food irradiation. In addition, food irradiation has received official international endorsement from the World Health Organizations and the International Atomic Energy Agency.

Does irradiation destroy all bacteria, resulting in a sterile produce?

Irradiation, at the levels normally used in food processing, destroys most, but not all microorganisms present; it does not sterilize the food. It can decrease salmonella and e. coli organisms substantially, but spore-forming organisms such as c. perfringens are still alive. As with any food, consumers must take appropriate precautions, such as refrigeration and proper handling and cooking, to make sure that potentially harmful organisms do not cause problems.

After treatment, the surviving disease-causing and food spoilage organisms may start to multiply again if the food is not properly handled. The disease-causing organisms in irradiated food are just as dangerous, but not more so, as the same organisms in non-irradiated food.

Does irradiation cause chemical changes in food?

Yes, irradiation does produce chemical changes in foods. These substances, called “radiolytic products,” may sound mysterious, but they are not. They have been scrutinized by scientists in making safety assessments of irradiated foods. Any kind of treatment causes chemical changes in food. Scientists find the changes in food created by irradiation minor to those created by cooking. The products created by cooking are so significant that consumers can smell and taste them, whereas only a chemist with extremely sensitive lab equipment may be able to detect radiolytic products. Irradiated food looks like the raw food.

Are irradiated foods on the market now, and how can they be identified?

Final regulations took effect in February for labeling irradiated raw beef and procedures for using the process to reduce or eliminate foodborn pathogens on red meat. Consumers may soon see the international symbol for irradiation, a petallike icon, on packages of beef in grocery stores. Until recently, only irradiated dried spices and enzymes were marketed in the United States. In January 1992, irradiated Florida strawberries were sold at a North Miami supermarket. Sales of irradiated products are ongoing in several grocery stores. Poultry irradiation began commercially in 1993. Irradiation of food has been approved in 37 countries for more than 40 products. The largest marketers of irradiated food are Belgium and France (each country irradiates about 10,000 tons of food per year), and the Netherlands (which irradiates about 20,000 tons per year).

* Charlotte Brennand is Utah State University Extension Food Safety Specialist