Food irradiation

Food irradiation has the longest history, more than 40 years, of scientific research and testing of any food technology before approval. Research has been comprehensive, and has included wholesomeness, toxicological, and microbiological evaluation. Worldwide, 38 countries permit irradiation of food, and more than 28 billion lb of food is irradiated annually in Europe. It is important to note that food irradiation has a pretty remarkable list of national and international endorsements: ADA, American Council on Science and Health, American Medical Association, Council for Agricultural Science and Technology, International Atomic Energy Agency, Institute of Food Technologists, Scientific Committee of the European Union, United Nations Food and Agricultural Organization (FAO), and the World Health Organization (WHO).

Although the US food supply has achieved a high level of safety, microbiological hazards exist. Because foods may contain pathogens, mishandling, including improper cooking, can result in food-born illness. Irradiation has been identified as one solution that enhances food safety through the reduction of potential pathogens and has been recommended as part of a comprehensive program to enhance food safety.

However, food irradiation does not replace proper food handling. So the handling of foods processed by irradiation should be governed by the same food safety precautions as all other foods.

Food irradiation cannot enhance the quality of a food that is not fresh, or prevent contamination that occurs after irradiation during storage or preparation.

But, treating foods with the irradiation of gamma rays offers benefits to consumers, retailers, and food manufacturers such as improved microbiological quality, replacement of chemical treatments, and extended shelf life. The spices and fumigant sprays used on fruits can be limited and eliminated through the use of irradiation. This improves the quality of the fruit. Pathogens in raw poultry or meat can be reduced by a dose of radiation. Also, smaller doses can disinfest grain and produce and can slow down the natural aging of fruit and vegetables.

This all results in the reduced use or elimination of chemical treatments and proves that irradiated foods closely resemble foods in their fresh state.

Irradiation has been compared with pasteurization because it destroys pathogenic bacteria. Because irradiation does not greatly raise the temperature of the food being processed, nutrient losses are small and are often much less than nutrient losses associated with other methods of preservation, such as canning, drying, and heat pasteurization and sterilization. Proteins, fats and carbohydrates are not notably affected by irradiation. But certain vitamins are sensitive to food irradiation.

Yet, nutrient losses can be minimized by irradiating food in an oxygen-free environment or in a frozen state.

According to the Ames, Iowa Council for Agriculture Science and Technology Task Force Report No. 115, consumers consistently rate irradiated fruit as equal or better than non-irradiated fruits in appearance, freshness, and taste. With all of the facts listed above, it is obvious that irradiated foods are the best option instead of harmful chemical products. These chemicals

usage and harm are a result of not using food irradiation to benefit consumers. And in an era of increasing concern about food safety, consumers must understand that irradiation is one method of enhancing an already safe food supply.