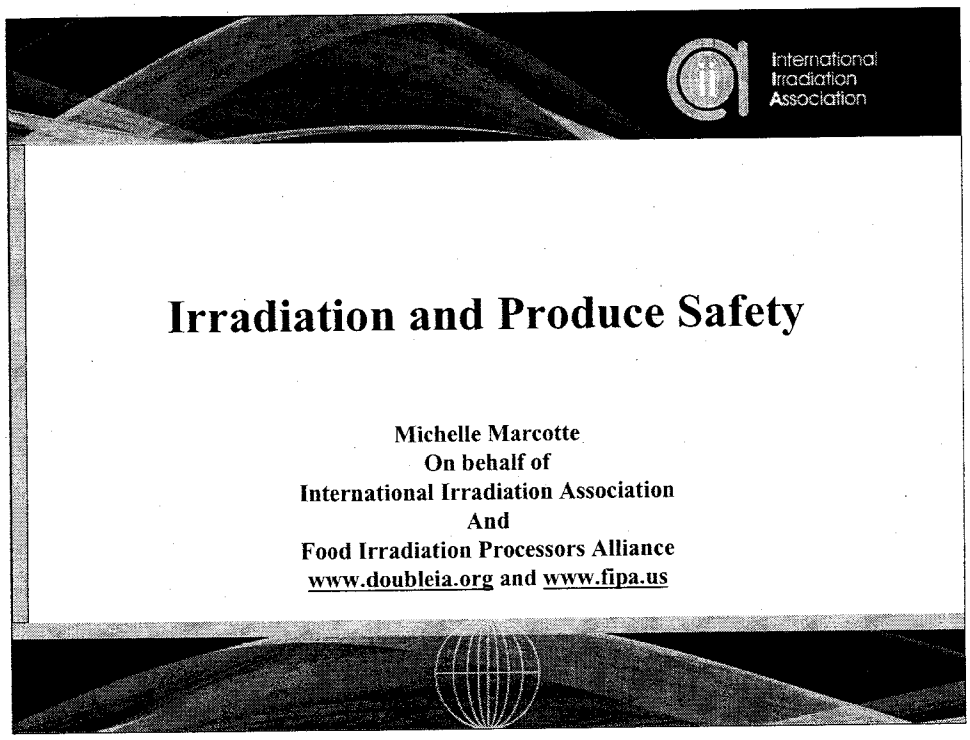

Hello and Thank you for inviting me. I am Michelle Marcotte presenting today on behalf of the International Irradiation Association, and its affiliate, the Food Irradiators Processors Alliance. We are called the doubleia, and we are an association of suppliers of irradiation equipment and over 90% of irradiation contract services worldwide. Our membership includes 6 American companies providing irradiation services in 39 irradiation facilities in the US. Doubleia, FIPA and its members have played the leading role in the development of radiation processing for the sterilization of medical and personal care goods as well as food irradiation for several decades.

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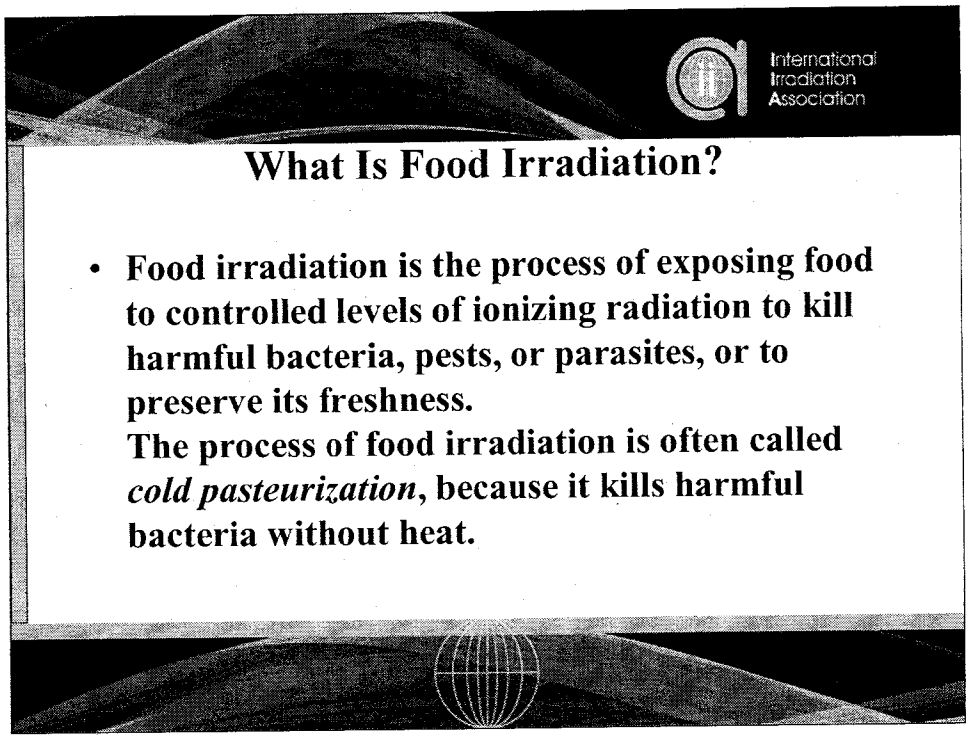
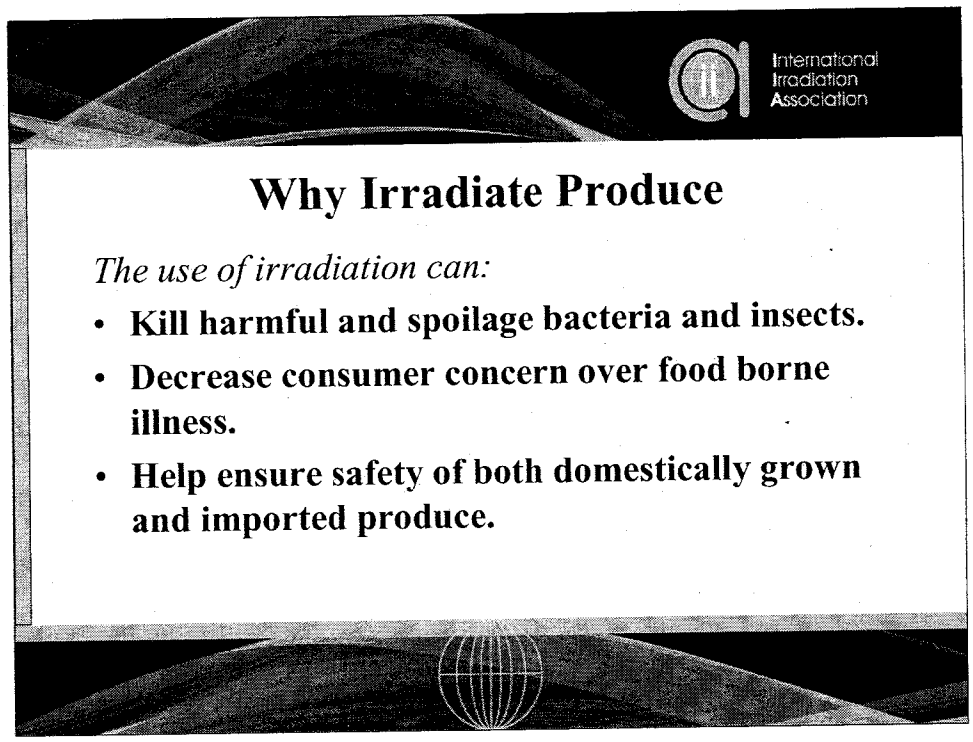
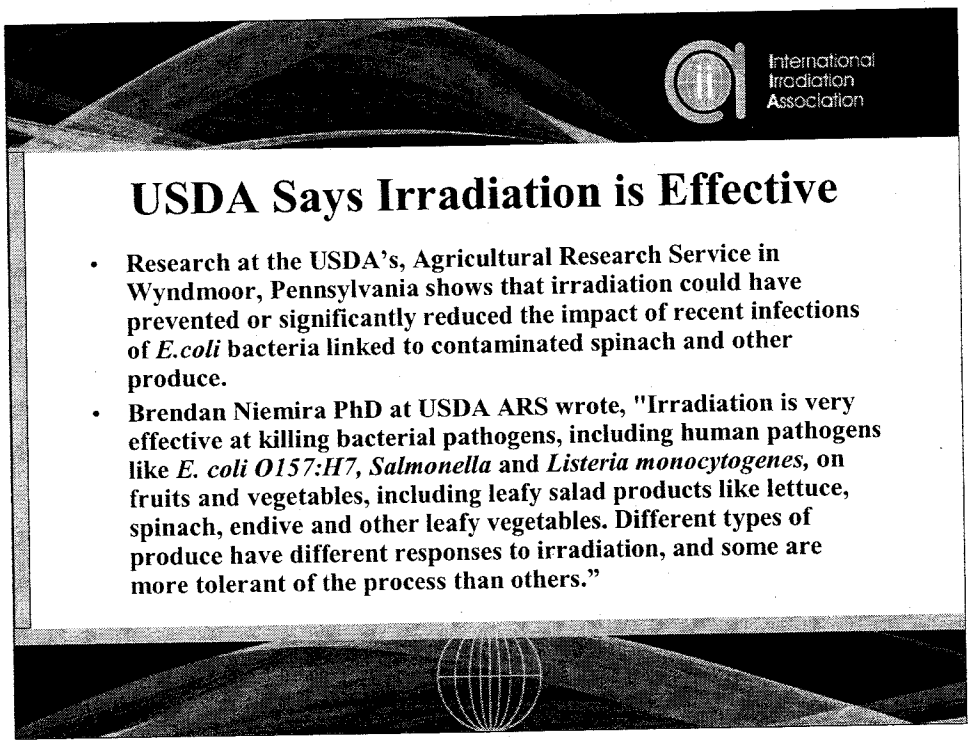


Irradiation is a physical process that, depending how it is used, can kill or control harmful and food spoilage microorganisms on and in foods. It does not involve heat, it is not a chemical treatment, it leaves no residue in the food and it will not affect the nutrient content of fresh produce.

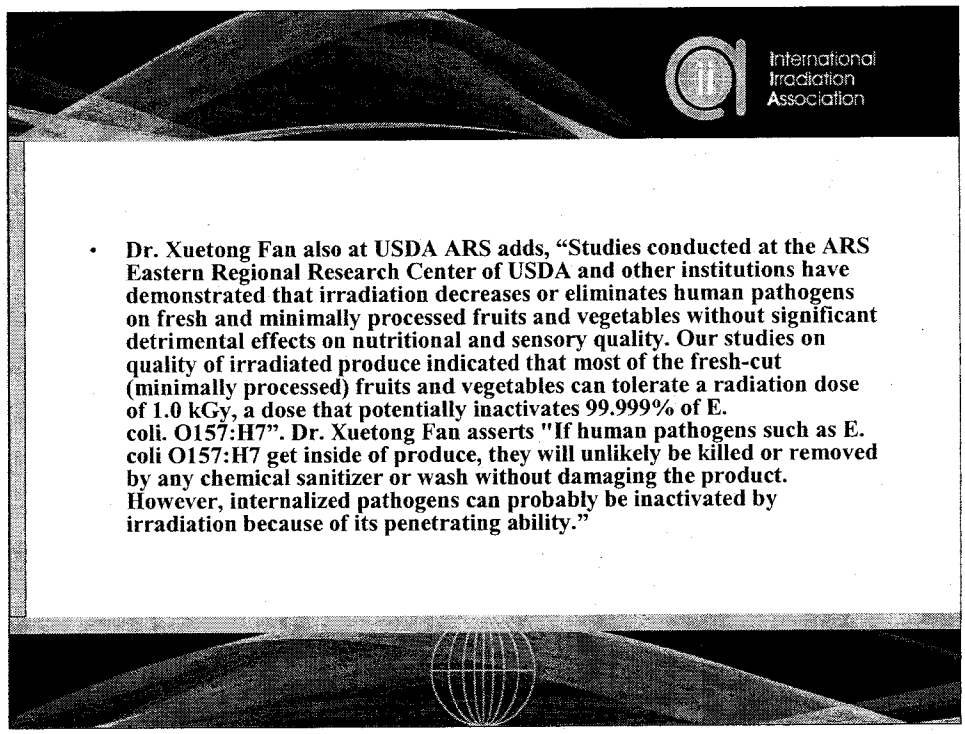


Irradiation should be viewed as part of an integrated food safety system that starts on the farm and carries through to the consumer or foodservice kitchen. The difference is, irradiated produce will land on the kitchen countertop much cleaner and I mean that in a microbiological sense. Irradiation will kill harmful bacteria such as E coli and Salmonella on and in the cells of fruits and vegetables. Irradiated fruits and vegetables can be eaten raw, safely.

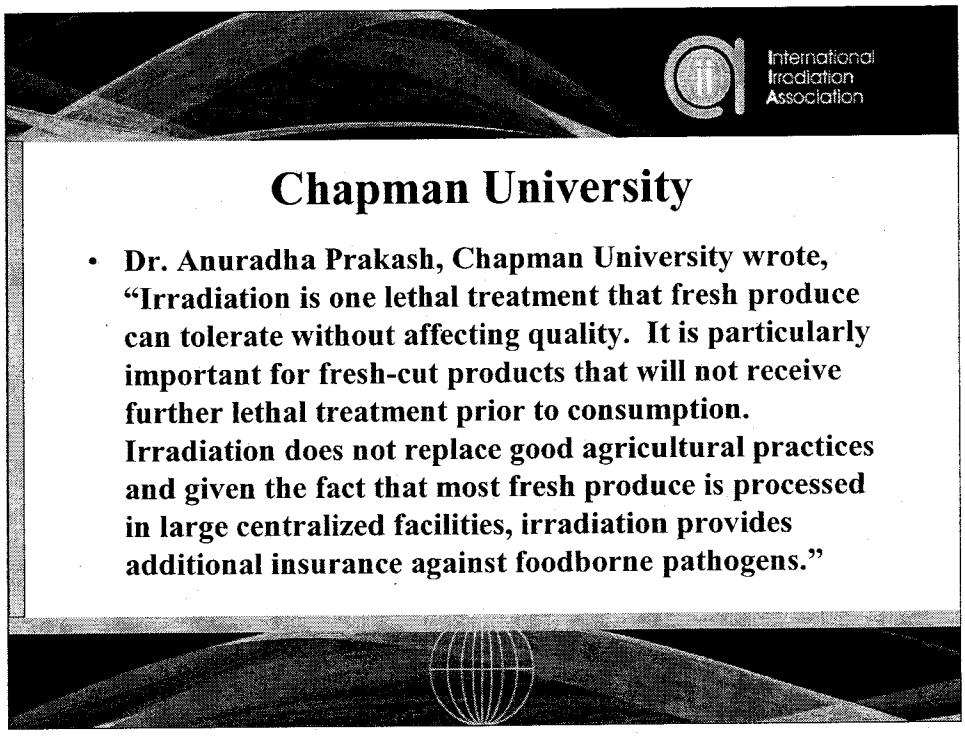


Research at the USDA's, Agricultural Research Service in Wyndmoor, Pennsylvania shows that irradiation could have prevented or significantly reduced the impact of recent infections of *E.coli* bacteria linked to contaminated spinach and other produce.

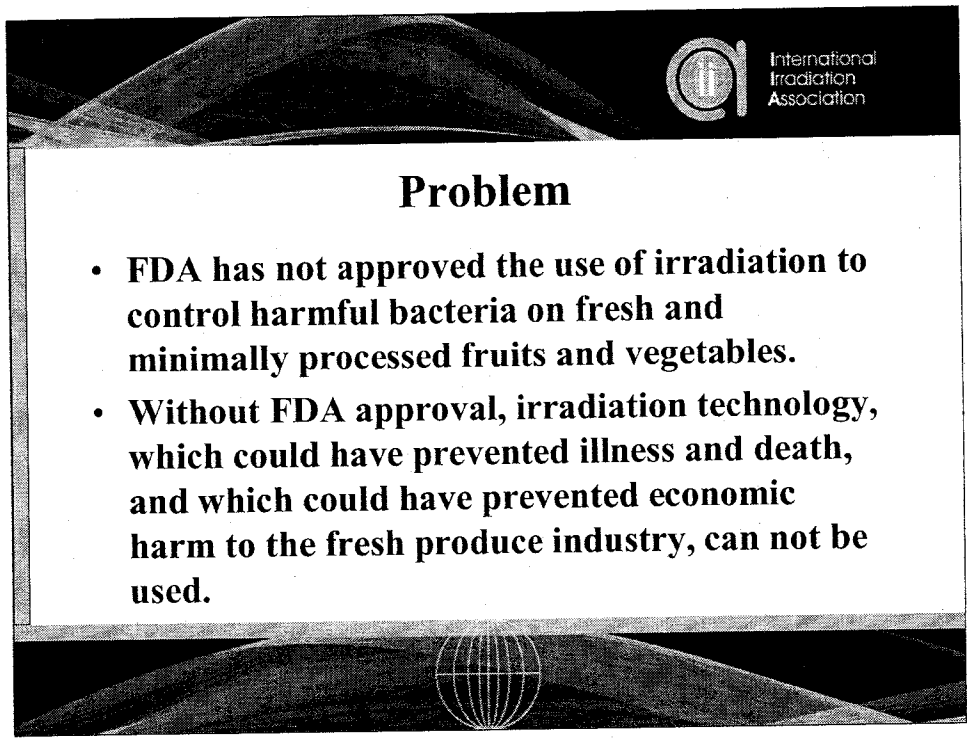
Brendan Niemira PhD at USDA ARS wrote, "Irradiation is very effective at killing bacterial pathogens, including human pathogens like *E. coli O157:H7, Salmonella* and *Listeria monocytogenes,* on fruits and vegetables, including leafy salad products like lettuce, spinach, endive and other leafy vegetables. Different types of produce have different responses to irradiation, and some are more tolerant of the process than others."



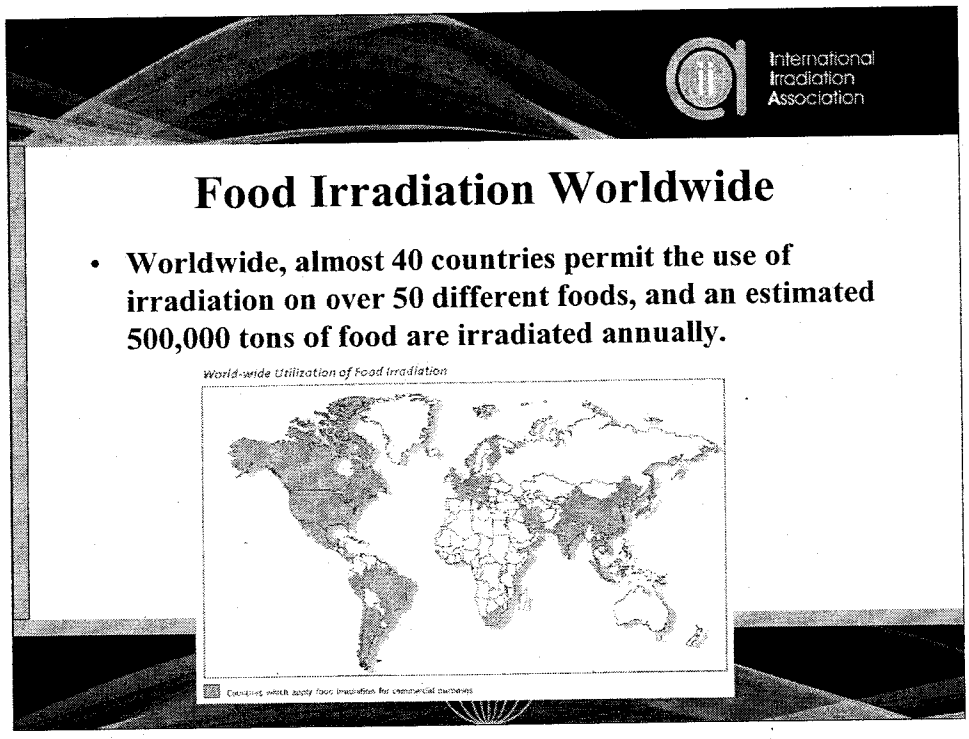
Dr. Xuetong Fan also at USDA ARS adds, "Studies conducted at the ARS Eastern Regional Research Center of USDA and other institutions have demonstrated that irradiation decreases or eliminates human pathogens on fresh and minimally processed fruits and vegetables without significant detrimental effects on nutritional and sensory quality. Our studies on quality of irradiated produce indicated that most of the fresh-cut (minimally processed) fruits and vegetables can tolerate a radiation dose of 1.0 kGy, a dose that potentially inactivates 99.999% of E. coli. O157:H7". Dr. Xuetong Fan asserts "If human pathogens such as E. coli O157:H7 get inside of produce, they will unlikely be killed or removed by any chemical sanitizer or wash without damaging the product. However, internalized pathogens can probably be inactivated by irradiation because of its penetrating ability."



Dr. Anuradha Prakash, Chapman University wrote, "Irradiation is one lethal treatment that fresh produce can tolerate without affecting quality. It is particularly important for fresh-cut products that will not receive further lethal treatment prior to consumption. Irradiation does not replace good agricultural practices and given the fact that most fresh produce is processed in large centralized facilities, irradiation provides additional insurance against foodborne pathogens."



OK, Here's the problem. Although FDA has approved the use of irradiation to kill insects and to extend the shelf life of fresh fruits and vegetables, the regulatory approval does not extend to killing harmful microorganisms and does not extend to minimimally processed fruits and vegetables. FDA has dragged its regulatory feet for several years on several petitions that would have expanded the ability to use irradiation and improved public health. FDA needs to immediately rectify this lack of regulatory action.



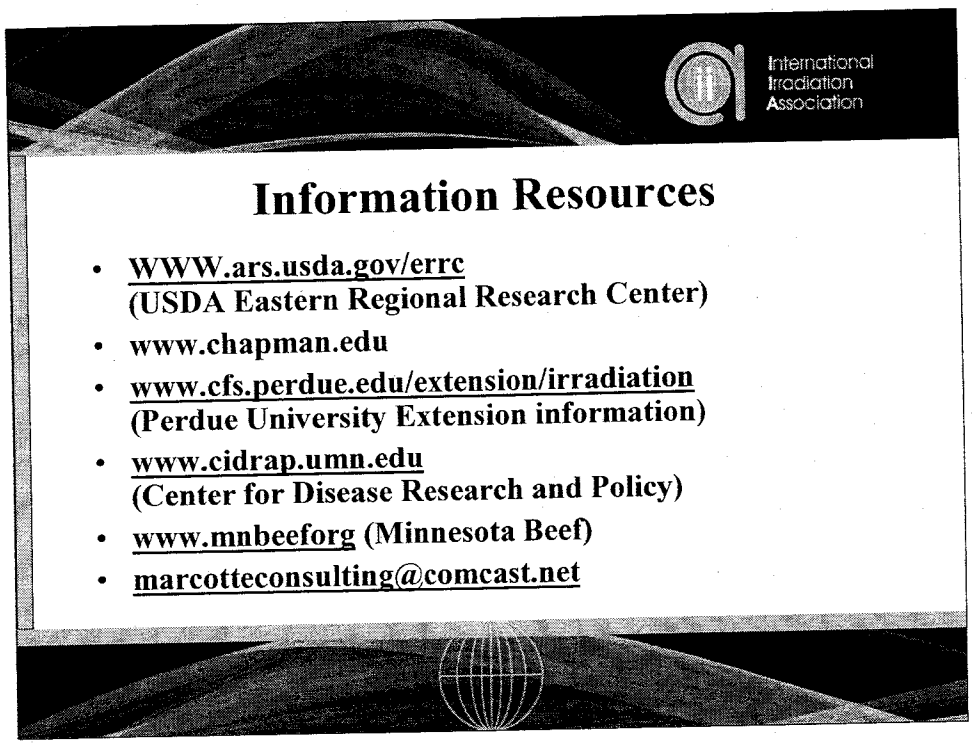
Irradiation is already used and accepted in the US. Current estimates are that approximately 18 million pounds of irradiated ground beef and poultry are marketed in the United States annually. It is also estimated that some eight million pounds of irradiated fruits and vegetables, mainly mango, papaya and guava, are sold annually by U.S. retailers. Spices have been commercially irradiated since 1986 and approximately one-third of the commercial spices consumed in the United States, or approximately 175 million lbs., are irradiated annually.

International Irradiation Association

American Irradiation Equipment and Services Suppliers

- **Food Technology Services www.foodtech.us**
- **Graystar www.graystarinc.com**
- **Hawaii Pride www.hawaiipride.com**
- **MDS Nordion www.mds.nordion.com**
- **REVISS www.reviss.com**
- **Sadex www.sadexcorp.com**
- **Sterigenics www.sterigenics.com**
- **Steris Isomedix facilities www.steris.com**
- **Texas A&M U. www.tamu.edu/ebeam/index.html**

Here are some companies you may be interested in contacting for further information. Facilities presently irradiating food for human consumption in the USA include Food Technology Services Inc. located in Mulberry, Florida; Texas A & M University at College Station, Texas; Sadex Inc in Sioux City, Iowa and Hawaii Pride on Hawaii's Big Island. New Jersey-based GRAY*STAR is in the process of finalizing plans to build a Gamma irradiation facility near Honolulu, Hawaii. The facility will serve Hawaiian growers as well as Asian customers and be operational by mid to late 2007. Several additional facilities including those operated by SteriGenics, Steris Isomedix and Food Tech Services Inc; irradiate spices, dry ingredients and garlic. Food Tech Services Inc; irradiates fruits for inter-state quarantine within the US. Sadex has an increasing meat, animal feed and supplement business. Hawaii Pride began marketing irradiated produce on the US mainland in 2001. MDS Nordion is the largest irradiation equipment supplier and part owner of the Food Technology Services



There are many resources available to allow you to learn more about food irradiation from knowledgeable sources. These are some of them. You can also write me at the email address given to receive a copy of this presentation.