Shedding light on food irradiation: A comparison with alternative food technologies

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Food Irradiation

Long and storied history
Approved in ~60 countries
Primary applications
- Food safety and extension of shelf-life
- Phytosanitary treatment
- Inhibition of sprouting

http://www.grandviewresearch.com/industry-analysis/frozen-food-market
Benefits

Efficacy
Treatment
Non-thermal/ non-chemical process
Facilitates trade
~16,000 mT exported to United States in 2015 from Mexico, Vietnam, Thailand, India, Pakistan, Australia and South Africa

Thanks to Laura Jeffers
Food irradiated in China

- Pickled chicken feet and wings over 400k tons/year
- Pet food
- Dehydrated vegetables
- Spice & seasoning
- Chinese herbs
- Seafood: frozen and dry

Hsiao 2016
Weaknesses

- Regulations
- Logistics
- Consumer Acceptance
Is irradiated fruit less of an issue?

Absence of viable alternatives
Insect mortality not necessary
Generic doses
Consumers of specialty produce may be more accepting
  ◦ Or they may not know
Obama signs bill requiring labeling of GMO foods
July 29, 2016

The legislation will require most food packages to carry a text label, a symbol or an electronic code readable by smartphone that indicates whether the food contains genetically modified organisms, or GMOs.
Opportunities

| Trade agreements | • Bilateral and multilateral trade agreements  
|                  | • ASEAN-Australia-New Zealand Free Trade Agreement |
| Food Safety Modernization Act | • Requires validated preventive controls  
|                             | • Produce Safety and Foreign Supplier Verification Program |
| “Consumer” education       | • Focus on the product  
|                           | • Highlight the benefits |
Specialty Burgers and Sliders Made with Irradiated ground beef

Step-by-Step:
- Review the process for producing all specialty burgers and sliders with irradiated ground beef with all team members.
- Educate customers on the safety benefits of “cook it the way you like it” to desired doneness.
- Due to USDA regulations & Food Safety guidelines block your irradiated burger section with dividers to keep out any contaminants.

Preferred Practices

Production Manual & Job Aid

Current Recipes
- 80% Plain
- Bacon and Cheddar
- Mushroom Swiss
- Vidalia Onion
- Cracked Pepper
- Blue Cheese
- Jalapeno Cheddar NEW!

*The order code for the 6.5lb ground beef chubs is 398502. Use this for producing Specialty Burgers and Sliders.

What makes them unique:
- Irradiation means you can safely “cook it the way you like it” to desired doneness.
- Flavorful varieties like Bacon Cheddar, available as a burger or slider.
- Grill ready convenience.
Benefits for the environment

Green technology
Clean technology

“the politics of nuclear are changing on generational lines meaning that a new wave of support for nuclear energy amongst millennials bespeaks a promising future for the advancement of emissions free technologies.”

Industry education

Farm → Processor → Wholesaler

Retailer → Consumer

Food Service
Threats

Competing technologies

- Cold/heat/chemicals
- Other non-thermal processes such as HPP
High Pressure Processing

- Non-thermal
- Large-scale processing
- Works on a variety of foods
Rapid growth

Market value, 2012-2018 ($Million)

- ROW
- Pacific
- Asia
- Europe
- North America

Visiongain
Easy to understand  Consumer friendly
Toll facilities and research support allow use by smaller food companies.
Other threats

Negative events
- Accidents
- Loss of process control

Not doing enough
- Losing momentum
- Over-promising
Industry-wide investment

- Lobby for changes in regulations
- Encourage global harmonization
- Educate and engage consumers/retailers/distributors
- Provide application studies, support research
- Facilitate use by smaller operations
THANK YOU

Eighth Annual Chapman Phytosanitary Irradiation Forum
March 20-21, 2018, Chapman University, Orange, California

www.chapman.edu/food-irradiation-workshop