



October 17, 2008

Docket Clerk  
U.S. Department of Agriculture  
Food Safety and Inspection Service  
FSIS Docket Room  
1400 Independence Avenue, SW  
Room 2534  
Washington, DC 20250-2534

RE: Docket No. FSIS 2008-0028  
Irradiation as a processing aid for use on chilled beef carcasses (low dose, e-beam)

The National Cattlemen's Beef Association (NCBA) appreciates this opportunity to provide comments with regard to the action that should be taken with respect to the American Meat Institute's (AMI) petition and a request for comments published in the Federal Register on September 8, 2008, (Volume 73, No. 174 Pages 52001-52004) titled "Irradiation as a Processing Aid" Docket No. FSIS 2008-0028. Producer-directed and consumer-focused, NCBA is the nation's oldest and largest trade association for cattle producers and represents over 247,000 cattle producers through direct membership and our state and breed affiliates.

NCBA's top priority is to produce the safest and highest quality beef in the world. This has been consistent throughout our industry's history and in our long-term efforts to continually improve our knowledge and ability to raise healthy cattle. Additionally, NCBA has worked diligently to find pre- and post-harvest interventions to decrease as much as possible, the potential load of bacterial pathogens in our beef products. Cattle producers have invested more than \$27 million since 1993 in beef safety research, leading to the development of best practices which have served as a road map in reducing *Escherichia coli* O157:H7 and other bacteria in beef products. *E. coli* O157:H7 continues to be the beef industry's major target pathogen for control and cattle producers remain committed to further reducing and eliminating the presence of *E. coli* O157:H7 in beef products.

Great effort has been devoted to finding ways of protecting food against microbial contamination. Currently, there are a variety of processing aids the industry may use to eliminate *E. coli* O157:H7 but microbial contamination continues to be an obstacle to overcome. For more than four decades the safety of irradiated food has been studied extensively from nutritional assessments, toxicity studies and feeding trials with no risks associated.

The food irradiation process has been approved by numerous regulatory agencies in the United States and around the world. In fact, it has been reported that the nutritional changes produced by irradiation are fewer than those produced by canning or pasteurization.<sup>1</sup>

Our industry has found irradiation as a safe way to address the microbial growth of pathogens such as *E. coli* O157:H7, while maintaining the integrity of the food and its nutritional value. Food irradiation is a safe processing tool that is an approved processing aid for food in 50 countries. The use of food irradiation has been noted as an important technology that can protect the public against microorganisms found in foods. The Centers for Disease Control and Prevention, along with the World Health Organization, welcome the use of this important technology to protect the public against foodborne diseases.<sup>1,2,3</sup>

In addition, the Food and Drug Administration (FDA) has approved the use of irradiation for a growing list of foods and food ingredients including: wheat, potatoes, spices, refrigerated or frozen uncooked red meat, and most recently, fresh iceberg lettuce and spinach. NCBA supports the use of irradiation as a processing aid to be used in a multiple-hurdle approach to control *E. coli* O157:H7 on beef carcasses.

## Comments

Irradiation is a time-tested, safe and effective method of controlling microorganisms in food products and has also been advantageous in food preservation. For the purposes of controlling microorganisms and enhancing food preservation, irradiation has been used in many countries, including the United States.

The Food Safety and Inspection Service (FSIS) amended its regulations in 1999<sup>4</sup> to allow for irradiation to be used in treating frozen or uncooked meat and meat by-products to reduce the levels of foodborne pathogens and to extend shelf-life. The regulation outlined the approved sources of irradiation as gamma rays, electron beam (e-beam) and x-ray, as well as procedures and labeling requirements for irradiated meat products.

During food irradiation, the food product is exposed to high levels of radiant energy; one form of radiant energy used commercially is electron beam (e-beam). When the electrons are accelerated they are absorbed as they come into contact with the surface of the food product. Then the electrons create chemical bond breakage in the microorganisms destroying their deoxyribonucleic acid (DNA). The chemical reactions that food receives with irradiation are similar to the chemical reactions created by freezing, canning, cooking, drying or other food processing techniques.

Additionally, longstanding science has found that irradiation of food products does not cause any problems with toxins. In fact more than twenty-five years ago a joint committee of international government bodies<sup>5</sup> concluded that “irradiation of any food commodity at any dose introduces no toxicological hazard; hence toxicological testing of food so treated is no longer required.”<sup>6</sup>

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<sup>1</sup> Steele JH. *Food irradiation: a public health opportunity*. International Journal of Infectious Diseases 2000;4:62-6

<sup>2</sup> Osterholm MT, Potter ME. *Irradiation pasteurization of solid foods: taking food safety to the next level*. Emerging Infectious Diseases 1997;3:575-7

<sup>3</sup> World Health Organization. Safety and nutritional adequacy of irradiated food. Geneva: The Organization; 1984

<sup>4</sup> 64 FR 72168, December 23, 1999

<sup>5</sup> JECFI, a committee of the FAO (Food and Agriculture Organization of the United Nations); the IAEA (International Atomic Energy Agency) and WHO (World Health Organization)

<sup>6</sup> Joint FAO/WHO/IAEA Expert Committee. *Wholesomeness of Irradiated Food*. Report No. 659, World Health Organization. Geneva Switzerland; 1981

The FDA requires labeling for food products if they were treated in their entirety by irradiation. In this case irradiation treatment would also be included on the ingredients list, as in the example of irradiated frozen or uncooked ground beef. However, processing aids do not have to be labeled as the effect of the application is momentary and does not last.

Under FDA's regulations, processing aids include substances that are added to a food for their technical or functional effect during processing, and are present in the finished food at insignificant levels. In addition, the processing aid does not have any technical or functional effect in the food.<sup>7</sup>

Lactic acids and organic acids are commonly used as a processing aid and applied to beef carcasses since their effects are momentary and not lasting. Likewise, USDA's Agricultural Research Service's Meat Animal Research Center (MARC) conducted a study on low dose, e-beam irradiation for application on beef carcasses and the results showed that the effects of e-beam irradiation at a low dose are momentary and not lasting – characteristics of a processing aid.

The study concluded that the low dose, low penetration e-beam process provided significant surface reduction of *E. coli* O157:H7 on chilled beef; has no effect on organoleptic properties or appearance of the carcass and produces no significant loss of either the micro- or macro-nutrients in the carcass or any products derived from the carcass<sup>8</sup> – another characteristic of a processing aid.

NCBA believes that it is the responsibility of our government to give the industry the various tools needed to keep our food safe and reduce pathogens including *E. coli* O157:H7 in beef products. In addition, NCBA also believes that processing establishments should make an ardent effort to minimize the threat of foodborne illness and increase pathogen control. An analysis by Tauxe (2001)<sup>9</sup> stated the potential benefit of irradiation would be a 25% reduction in the morbidity and mortality rate caused by pathogens including, *E. coli* O157:H7. This technology has an estimated benefit to prevent nearly 900,000 cases of infection, 8,500 hospitalizations, more than 6,000 catastrophic illnesses and 350 deaths each year.

NCBA is a member of and collaborates with the Beef Industry Food Safety Council (BIFSCo) to coordinate a broad effort to solve pathogen issues, focused on research and consumer education. Representatives from all segments of the beef industry belong to BIFSCo and work together under the founding principles that safety is a non-competitive issue to develop industry-wide, science-based strategies to solve the problem of pathogens, particularly *E. coli* O157:H7.

Food safety remains a top priority for BIFSCo and the U.S. beef industry is committed to producing safe, wholesome, nutritious and affordable beef products. BIFSCo has put together a series of best practice documents to serve as blueprints for the industry as we continually strive to improve and make beef an even safer product than it is today. The industry constantly strives to improve all aspects of our products and as food safety issues arise, we are committed to respond and make improvements with the use of science-based pathogen intervention strategies. Irradiation as a processing aid is a science-based intervention strategy.

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<sup>7</sup> 21 CFR 101.100, (a) (3) (ii) (c)

<sup>8</sup> 73 FR 174, September 8, 2008

<sup>9</sup> Tauxe, R.V. 2001. *Food safety and irradiation: protecting the public from foodborne infections*. Emerging Infectious Diseases 7:516-21

With regards to food safety, there is still work that needs to be done to accomplish the public health goals established for 2010. These goals include reducing the national incidence of *Salmonella*, *E. coli* O157:H7, *Campylobacter* and *Listeria* to 50% of their 1997 incidence.<sup>10</sup> In order to meet and exceed the 2010 goals proven science-based technologies, such as irradiation, will need to be utilized. As well, NCBA consistently strives to work with all of our partners to research new science-based technologies and interventions that will continually contribute to the improvement of our cattle herds and the safety and quality of our products.

## Conclusion

It is important to know that food safety is and will always be a top priority for cattle producers. NCBA supports interventions for processors to further reduce and eliminate pathogens found in beef products. Research shows that food irradiation does not have any lasting effects on the final product when used as an aid during processing. According to the FDA's regulations governing processing aids we believe that irradiation of beef carcasses meets the guidelines and should be considered as a processing aid.

Irradiation is another important tool, which in combination with other intervention strategies, and safe food handling techniques, will help our industry reach its goal of providing a safe, high-quality product to the consumer. NCBA supports this safe and well-established process which will assist our members in providing quality beef products that are identical in organoleptic, nutritional and functional properties to non-irradiated beef on the market.

We appreciate the opportunity to review and comment on this petition. If you have any questions or concerns please contact Kristina Harris Butts, NCBA's Manager of Legislative Affairs at 202-879-9106 or [kbutts@beef.org](mailto:kbutts@beef.org).

Sincerely,



P. Andrew "Andy" Groseta  
President, National Cattlemen's Beef Association

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<sup>10</sup>Healthy people 2010 objectives: draft for public comment. Office of Public Health and Science. Washington: U.S. Department of Health and Human Services, September 15, 1998