



Standard Guide for Irradiation of Pre-packaged Processed Meat and Poultry Products to Control Pathogens and Other Microorganisms¹

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INTRODUCTION

The purpose of this guide is to present information on the use of ionizing radiation for eliminating or reducing the number of pathogenic microorganisms and parasites and for reducing the number of spoilage microorganisms on Processed Meat and Poultry. Information on the handling of processed meat and poultry prior to and after irradiation is also provided.

This guide is intended to serve as a set of recommendations to be followed when using irradiation technology where approved by an appropriate regulatory control authority. It is not to be construed as setting forth rigid requirements for the use of irradiation. While the use of irradiation involves certain essential requirements to attain the objective of the treatment, some parameters can be varied in optimizing the process.

This guide has been prepared from a Code of Good Irradiation Practice published by the International Consultative Group on Food Irradiation (ICGFI) under the auspices of the Food and Agriculture Organization (FAO), the World Health Organization (WHO), and the International Atomic Energy Agency (IAEA). (1)²

1. Scope

1.1 This guide outlines procedures for the irradiation of pre-packaged refrigerated and frozen processed meat and poultry products.

NOTE 1—The Codex Alimentarius Commission defines “meat” (including poultry and game) as “the edible part of any mammal slaughtered in an abattoir,” and “poultry meat” as “the edible part of slaughtered domesticated birds, including chicken, turkeys, ducks, geese, guinea-fowls, or pigeons.” (CAC/RCP 13-1976)

NOTE 2—Current U.S. regulations limit the definition of livestock species to cattle, sheep, swine, goat, horse, mule, or other equine and poultry species to chicken, turkey, duck, goose, and guinea (2, 3).

1.2 This guide addresses all refrigerated and frozen meat and poultry products NOT covered by Guide F1356.

1.3 This guide provides information regarding absorbed doses used for inactivation of parasites and reduction of bacterial load. Such doses are typically less than 10 kilogray (kGy).

¹ This guide is under the jurisdiction of ASTM Committee E61 on Radiation Processing and is the direct responsibility of Subcommittee E61.05 on Food Irradiation.

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² The boldface numbers in parentheses refer to a list of references at the end of this standard.

2. Referenced Documents

2.1 ASTM Standards:³

E170 Terminology Relating to Radiation Measurements and Dosimetry

F1356 Practice for Irradiation of Fresh and Frozen Red Meat and Poultry to Control Pathogens and Other Microorganisms

F1640 Guide for Selection and Use of Packaging Materials for Foods to Be Irradiated

E2232 Guide for Selection and Use of Mathematical Methods for Calculating Absorbed Dose in Radiation Processing Applications

E2303 Guide for Absorbed-Dose Mapping in Radiation Processing Facilities

2.2 ISO/ASTM Standards:³

51204 Practice for Dosimetry in Gamma Irradiation Facilities for Food Processing

51261 Guide for the Selection and Calibration of Dosimetry Systems for Radiation Processing

51431 Practice for Dosimetry in Electron and X-ray (Bremsstrahlung) Irradiation Facilities for Food Processing

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.