

## CHAPTER 2 FOOD PRODUCT STANDARDS

### 17[2.13 RADIATION PROCESSING OF FOOD

#### 2.13.1: Dose of Radiation -

(1) Save as provided in clause (2) of sub-regulation 2.13.1, no food shall be processed by radiation.

(2) No article of food permitted for radiation processing specified in the Table 1 and Table 2 given below shall receive the dose of radiation in excess of the quantity specified in the said Tables at the time of radiation processing -

**Table 1: Classes of Food Products and Dose Limits for Radiation Processing**

Class	Food	Purpose	Dose Limit kGy (kilo Gray)									
			Minimum	Maximum								
1	2	3	4	5								
<b>Class 1</b>	<b>Bulbs, stem and root tubers and rhizomes</b>	<b>Inhibit sprouting</b>	<b>0.02</b>	<b>0.2</b>								
<p style="color: red;">Amendment for substitution of highlighted provision</p> <table border="1" style="margin: auto;"> <tr> <td rowspan="2" style="vertical-align: top;"><sup>83</sup>[Class 1</td> <td rowspan="2">Bulbs, stem and root tubers, rhizomes and fresh spices including ginger, garlic and turmeric</td> <td>Inhibit sprouting</td> <td>0.02</td> <td>0.2</td> </tr> <tr> <td>Reduction of microbial load</td> <td>2.0</td> <td>5.0]</td> </tr> </table> <p style="color: red; text-align: center;">[This amendment shall come into force on 1<sup>st</sup> May, 2025]</p>					<sup>83</sup> [Class 1	Bulbs, stem and root tubers, rhizomes and fresh spices including ginger, garlic and turmeric	Inhibit sprouting	0.02	0.2	Reduction of microbial load	2.0	5.0]
<sup>83</sup> [Class 1	Bulbs, stem and root tubers, rhizomes and fresh spices including ginger, garlic and turmeric	Inhibit sprouting	0.02	0.2								
		Reduction of microbial load	2.0	5.0]								
Class 2	Fresh fruits and vegetables (other than Class 1)	Delay ripening	0.2	1.0								
		Insect disinfestation	0.2	1.0								
		Shelf -life extension	1.0	2.5								
		Quarantine application	0.1	1.0								
Class 3	Cereals and their milled products, pulses and their	Insect disinfestation	0.25	1.0								

Class	Food	Purpose	Dose Limit kGy (kilo Gray)	
			Minimum	Maximum
1	2	3	4	5
	milled products, nuts, oil seeds, dried fruits and their products	Reduction of microbial load	1.5	5.0
Class 4	Fish, aquaculture, seafood and their products (fresh or frozen) and crustaceans	Elimination of pathogenic microorganisms	1.0	7.0
		Shelf -life extension	1.0	3.0
		Control of human parasites	0.3	2.0
Class 5	Meat and meat products including poultry (fresh and frozen) and eggs	Elimination of pathogenic microorganisms	1.0	7.0
		Shelf -life extension	1.0	3.0
		Control of human parasites	0.3	2.0
Class 6	Dry vegetables, seasonings, spices, condiments, dry herbs and their products, tea, coffee, cocoa and plant products	Microbial decontamination	6.0	14.0
		Insect disinfestation	0.3	1.0
Class 7	Dried foods of animal origin and their products	Insect disinfestation	0.3	1.0
		Control of moulds	1.0	3.0
		Elimination of pathogenic microorganisms	2.0	7.0
Class 8	Ethnic foods, military rations, space foods, ready-to-eat, ready-to-cook/ minimally processed foods.	Quarantine application	0.25	1.0
		Reduction of microbial load	2.0	10.0
		Sterilization	5.0	25.0

**Table 2: Dose Limits for Radiation Processing of Allied Products**

Sr. No.	Allied Product	Purpose	Dose Limit kGy (kiloGray)	
			Minimum	Maximum
(1)	(2)	(3)	(4)	(5)
1.	Packaging materials for food or allied products	Microbial decontamination	5.0	10.0
		Sterilization	10.0	25.0
2.	Food additives	Insect disinfestation	0.25	1.0
		Microbial decontamination	5.0	10.0
		Sterilization	10.0	25.0
3.	Health foods, dietary supplements and nutraceuticals	Insect disinfestation	0.25	1.0
		Microbial decontamination	5.0	10.0
		Sterilization	10.0	25.0

(3) Routine quantitative dosimetry shall be carried out during operation and record kept of such measurements as provided under Atomic Energy (Radiation Processing of Food and Allied Products) Rules, 2012.

### **2.13.2: Requirement for Radiation Processing:**

(1) Approval of facilities - No irradiation facility shall be used for the treatment of food unless such facility -

(i) has been approved and licensed under the Atomic Energy (Radiation Processing of Food and Allied Products) Rules, 2012.

(ii) complies with the conditions for approval, operation, license and process control prescribed under the Atomic Energy (Radiation Processing of Food and Allied Products) Rules, 2012.

(iii) carries out irradiation in accordance with the provisions of the Atomic Energy (Radiation Processing of Food and Allied Products) Rules, 2012.

(2) No food or irradiated food shall leave the irradiation facility unless it has been irradiated in accordance with the provisions of Atomic Energy (Radiation Processing of Food and Allied Products) Rules, 2012 and a certificate of irradiation indicating the dose of irradiation and the purpose of irradiation is provided by the facility.

### **2.13.3: Restrictions on Radiation Processing of Food -**

(1) The radiation processing shall conform to the dose limit, the radiation source, and the conditions specified for each type or category of food for processing by radiation, under the Atomic Energy (Radiation Processing of Food and Allied Products) Rules, 2012.

(2) The food which has been processed by radiation shall be identified in such a way so as to prevent its being subjected to re-irradiation.

(3) The radiation processing shall be carried out by personnel having the minimum qualifications and training as prescribed for the purpose under the Atomic Energy (Radiation Processing of Food and Allied Products) Rules, 2012.

(4) The food once irradiated shall not be re-irradiated unless specifically so permitted under these regulations.

### **2.13.4: Record of Radiation Processing of Food -**

Any treatment of food by radiation shall be recorded by facility as specified under the Atomic Energy (Radiation Processing of Food and Allied Products) Rules, 2012.

### **2.13.5: Standards of Radiation Processed Food -**

The Radiation processed food shall comply with all the provisions of the Food Safety and Standards Act and the Regulations made thereunder specifying standards of such food.

**2.13.6: Storage and Sale of Radiation Processed Food -**

Save as otherwise provided in these regulations, no person shall irradiate for sale, store for sale, or transport for sale irradiated food.


**2.13.7: Restriction on Sale of Radiation Processed Food -**

The Radiation processed food shall be offered for sale only in pre-packaged conditions.

**2.13.8: Labelling of Radiation Processed Food -**

(1) The label of a food, which has been treated with ionizing radiation, shall carry a written statement indicating the treatment in close proximity to the name of the food.

(2) All packages of radiation processed food shall bear the Radura logo in green colour and following declaration, namely:-

<p>PROCESSED BY RADIATION</p>  <p>Name of the Product: Purpose of Radiation Processing: Operating License No. : Batch Identification No. (BIN) (as provided by facility): Date of Processing.....”]</p>
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