

## CODEX GENERAL STANDARD FOR IRRADIATED FOODS

### CODEX STAN 106-1983 <sup>1</sup>

#### 1. SCOPE

This standard applies to foods processed by irradiation. It does not apply to foods exposed to doses imparted by measuring instruments used for inspection purposes.

#### 2. GENERAL REQUIREMENTS FOR THE PROCESS

##### 2.1 Radiation sources

The following types of ionizing radiation may be used:

- (a) Gamma rays from the radionuclides  $^{60}\text{Co}$  or  $^{137}\text{Cs}$ ;
- (b) X-rays generated from machine sources operated at or below an energy level of 5 MeV;
- (c) Electrons generated from machine sources operated at or below an energy level of 10 MeV.

##### 2.2 Absorbed dose

The overall average dose absorbed by a food subjected to radiation processing should not exceed 10 kGy. <sup>2, 3</sup>

##### 2.3 Facilities and control of the process

2.3.1 Radiation treatment of foods shall be carried out in facilities licensed and registered for this purpose by the competent national authority.

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<sup>1</sup> The Codex General Standard for Irradiated Foods (CAC/RS 106-1979) was adopted by the Codex Alimentarius Commission at its 13<sup>th</sup> Session in 1979 and was subsequently revised in 1983 by the 15<sup>th</sup> Session. This Standard has been submitted to all Member Nations and Associate Members of FAO and WHO for acceptance in accordance with the General Principles of the Codex Alimentarius.

<sup>2</sup> For measurement and calculation of overall average dose absorbed, see Annex A of the Recommended International Code of Practice for the Operation of Radiation Facilities Used for Treatment of Foods (CAC/RCP 19-1979, Rev. 1-1983)

<sup>3</sup> The wholesomeness of foods, irradiated so as to have absorbed an overall average dose of up to 10 kGy, is not impaired. In this context the term "wholesomeness" refers to safety for consumption of irradiated foods from the toxicological point of view. The irradiation of foods up to an overall average dose of 10 kGy introduces no special nutritional or microbiological problems (Wholesomeness of Irradiated Foods, Report of a Joint FAO/IAEA/WHO Expert Committee, Technical Report Series 659, WHO, Geneva, 1981).

2.3.2 The facilities shall be designed to meet the requirements of safety, efficacy and good hygienic practices of food processing.

2.3.3 The facilities shall be staffed by adequate, trained and competent personnel.

2.3.4 Control of the process within the facility shall include the keeping of adequate records including quantitative dosimetry.

2.3.5 Premises and records shall be open to inspection by appropriate national authorities.

2.3.6 Control should be carried out in accordance with the Recommended International Code of Practice for the Operation of Radiation Facilities Used for the Treatment of Foods (CAC/RCP 19-1979, Rev. 1-1983).

### **3. HYGIENE OF IRRADIATED FOODS**

3.1 The food should comply with the provisions of the Recommended International Code of Practice - General Principles of Food Hygiene (Ref. No.: CAC/RCP 1-1969, Rev. 2, 1985).

3.2 Any relevant national public health requirement affecting microbiological safety and nutritional adequacy applicable in the country in which the food is sold should be observed.

## **4. TECHNOLOGICAL REQUIREMENTS**

### **4.1 Conditions for irradiation**

The irradiation of food is justified only when it fulfils a technological need or where it serves a food hygiene purpose<sup>4</sup> and should not be used as a substitute for good manufacturing practices.

### **4.2 Food quality and packaging requirements**

The doses applied shall be commensurate with the technological and public health purposes to be achieved and shall be in accordance with good radiation processing practice. Foods to be irradiated and their packaging materials shall be of suitable quality, acceptable hygienic condition and appropriate for this purpose and shall be handled, before and after irradiation, according to good manufacturing practices taking into account the particular requirements of the technology of the process.

## **5. RE-IRRADIATION**

5.1 Except for foods with low moisture content (cereals, pulses, dehydrated foods and other such commodities) irradiated for the purpose of controlling insect reinfestation, foods irradiated in accordance with Sections 2 and 4 of this standard shall not be re-irradiated.

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<sup>4</sup> The utility of the irradiation process has been demonstrated for a number of food items listed in Annex B to the Recommended International Code of Practice for the Operation of Radiation Facilities Used for the Treatment of Foods.

5.2 For the purpose of this standard food is not considered as having been re-irradiated when: (a) the food prepared from materials which have been irradiated at low dose levels, e.g., about 1 kGy, is irradiated for another technological purpose; (b) the food, containing less than 5% of irradiated ingredient, is irradiated; or when (c) the full dose of ionizing radiation required to achieve the desired effect is applied to the food in more than one instalment as part of processing for a specific technological purpose.

5.3 The cumulative overall average dose absorbed should not exceed 10 kGy as a result of re-irradiation.

## **6. LABELLING**

### **6.1 Inventory control**

For irradiated foods, whether prepackaged or not, the relevant shipping documents shall give appropriate information to identify the registered facility which has irradiated the food, the date(s) of treatment and lot identification.

### **6.2 Prepackaged foods intended for direct consumption**

The labelling of prepackaged irradiated foods shall be in accordance with the relevant provisions of the Codex General Standard for the Labelling of Prepackaged Foods.

### **6.3 Foods in bulk containers**

The declaration of the fact or irradiation shall be made clear on the relevant shipping documents.