



SUPPORTING DOCUMENT 4

STANDARD 1.5.3 **IRRADIATION OF FOOD**

Purpose

This Standard prohibits irradiation of food unless an express permission is given. All permissions in the Standard are subject to dosage requirements, and only apply where irradiation is undertaken for a permitted purpose.

A permission to irradiate a food does not apply if, prior to irradiating the food, the food is either unsafe or unsuitable.

Irradiation of foods must be carried out in facilities that are appropriately licensed and registered for the purpose of irradiation. There are various State, Territory, Commonwealth and International laws governing radiation control, and the operation of irradiation facilities. Other relevant Codes of Practice such as the Codex Alimentarius General Standard for Irradiated Foods 1983, and its associated Code of Practice for the Operation of Irradiation Facilities Used for the Treatment of Foods, also apply to irradiation processes.

This Standard prohibits the irradiation of food, or ingredients or components of food, unless a specific permission is given. The specific permission may impose conditions relating to matters such as dose, packaging materials, approved premises or facilities.

Even where this Standard permits irradiation, food should only be processed by irradiation where such processing fulfils a technological need or is necessary for a purpose associated with food safety. Food should not be processed by irradiation as a substituted procedure for good manufacturing practices.

The absorbed radiation dose applied for the purpose of irradiating food should be the minimum that is reasonably commensurate with the technological and public health purposes to be achieved. It should also be in accordance with good radiation processing practice.

Food to be processed by irradiation, and the packages and packing materials used or intended for use in connection with food so processed, should be of suitable quality and in an acceptable hygienic condition appropriate for the purpose of such processing. They should also be handled before and after irradiation according to good manufacturing practices, taking into account, in each case, the particular requirements of the technology of the process.

The operation of irradiation facilities and control of the irradiation process should be undertaken in accordance with any relevant State, and Territory, and New Zealand law governing radiation control. They should also be undertaken in accordance with an appropriate Code of Practice such as the 1983 Codex Alimentarius General Standard for Irradiated Foods and its associated Code of Practice for the Operation of Irradiation Facilities Used for the Treatment of Foods.

This Standard also sets out permitted sources of radiation, requires the keeping of certain records in relation to the irradiation of food, and requires the labelling of food which has been irradiated.

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Clauses

1 Definitions

In this Standard –

irradiation means the processing of food by subjecting it to the action of ionising radiation, but does not include ionising radiation imparted to food by measuring or inspection instruments, and 'irradiate' and 'irradiated' have corresponding meanings.

~~re-irradiate does not include the irradiation of food –~~

- ~~(a) prepared from materials that have been irradiated at low dose levels (not exceeding in any case 1 kGy) and are irradiated again; or~~
- ~~(b) which contains less than 50 g/kg of irradiated ingredients; or~~
- ~~(c) where the required full dose of ionising radiation is applied to the food in divided doses for a specific technological reason;~~

~~provided that the cumulative maximum radiation dose absorbed by the food does not exceed that specified in the Table to clause 4.~~

~~**technological need**, in relation to the irradiation of food, refers to the minimum dose of ionising irradiation required to ensure the safety or quality of the food, provided the process is performed in accordance with good manufacturing practice, and includes the extension of shelf life, the destruction of certain bacteriological contamination or pest disinfestation.~~

2 General prohibition on irradiation of food

~~(1) Food must not be irradiated unless there is a specific permission in this Standard to irradiate the food.~~

~~(2) A permission to irradiate a food is not a permission to re-irradiate the food unless re-irradiation is expressly permitted by this Standard.~~

3 Permitted sources of radiation

Where this Standard permits a food to be irradiated, the ionising radiation must be either -

- (a) gamma rays from the radionuclide cobalt 60; or
- (b) X-rays generated by or from machine sources operated at an energy level not exceeding 5 megaelectronvolts; or
- (c) electrons generated by or from machine sources operated at an energy level not exceeding 10 megaelectronvolts.

4 Foods permitted to be irradiated

~~(1) A food listed in column 1 of the Table to this clause may be irradiated, provided that –~~
~~(1) Subject to subclause (2), a food listed in column 1 of the Table to this clause may be irradiated, provided that –~~

- ~~(a) the absorbed dose of radiation is not below the minimum dose value or above the maximum dose value specified in column 2 of the Table to this clause; and~~

- (b) irradiation is only carried out for a purpose or purposes listed in column 3 of the Table to this clause
- (a) the absorbed dose of radiation is not below the minimum dose value or above the maximum dose value specified in column 2 of the Table to this clause; and
- (b) the conditions specified in column 3 of the Table to this clause, if any, are met.

(2) A permission to irradiate a food does not apply if, prior to irradiating the food, the food is either unsafe or unsuitable in accordance with the Act.

(2) A food listed in column 1 of the Table to this clause may only be processed by irradiation where such processing—

- (a) fulfills a technological need; or
- (b) is necessary for a purpose associated with food hygiene;

and such processing is not a substitute procedure for good manufacturing practice.

Table to clause 4

Column 1	Column 2	Column 3
Food	Minimum and Maximum Dose (kGy)	Conditions
Bread fruit Carambola Custard apple Longan Litchi Mango Mangosteen Papaya (Paw paw) <u>Persimmon</u> Rambutan	Minimum: 150 Gy Maximum: 1 kGy	Food may only be irradiated for the purposes of pest <u>Pest</u> disinfestation for a phytosanitary objective. The minimum dose to achieve the above technological purposes.
Herbs and spices as described in Schedule 4 to Standard 1.4.2 Herbal infusions – fresh, dried or fermented leaves, flowers and other parts of plants used to make beverages, excluding tea	Minimum: Subject to the condition specified in Column 3 —none Maximum: 6 kGy	Food may only be irradiated for the purposes of controlling <u>Control of</u> sprouting and pest disinfestation, including control of weeds. The minimum dose to achieve the above technological purposes. Food must be handled before and after irradiation according to good manufacturing practice (GMP).
Herbs and spices as described in Schedule 4 to Standard 1.4.2	Minimum: 2 kGy Maximum: 30 kGy	Food may only be irradiated for the purposes of decontamination. Food must be handled before and after irradiation according to good manufacturing practice (GMP). <u>Bacterial Decontamination</u>
Herbal infusions – fresh, dried or fermented leaves, flowers and other parts of plants used to make beverages, excluding tea	Minimum: 2 kGy Maximum: 10 kGy	<u>Bacterial Decontamination</u> Food may only be irradiated for the purposes of decontamination. Food must be handled before and after irradiation according to good manufacturing practice (GMP).

5 Permission to irradiate

- (1) A permission to irradiate a food is not a permission to irradiate the food more than once.
- (2) However, subclause (1) does not prohibit the irradiation of a food –
- (a) which is prepared from materials that have been irradiated at levels not exceeding in any case 1 kGy; or
 - (b) which contains less than 50 g/kg of irradiated ingredients; or
 - (c) where the required full dose of ionising radiation is applied to the food in divided doses for a specific technological reason.

5 Record keeping

- (1) Records must be kept at a facility where food is irradiated in relation to—
- (a) the nature and quantity of the food treated; and
 - (b) lot identification; and
 - (c) the minimum durable life of the food treated; and
 - (d) the process used; and
 - (e) compliance with the process used; and
 - (f) the minimum and maximum dose absorbed by the food; and
 - (g) an indication whether or not the product has been irradiated previously and if so, details of such treatment; and
 - (h) date of irradiation.
- (2) The records required to be kept by subclause (1) must be kept for a period of time that exceeds the minimum durable life of the irradiated food by 1 year.

6 Labelling

- (1) The label on a package of irradiated food must include a statement to the effect that the irradiated food has been treated with ionising radiation.

Examples:

'TREATED WITH IONISING RADIATION'

'TREATED WITH IONISING ELECTRONS'

'IRRADIATED (name of food)'

- (2) The label on a package of food containing an irradiated food as an ingredient or component, must include a statement that the ingredient or component has been treated with ionising radiation, either as part of the declaration of that ingredient or component in an ingredient list or elsewhere on the label.

- (3) Where an irradiated food, or a food containing an irradiated food as an ingredient or component, is not required to bear a label pursuant to clause 2 subclause 2(1) of Standard 1.2.1, there must be displayed on or in connection with the display of the food a statement that the food has been treated with ionising radiation, or that it contains an ingredient or component that has been treated with ionising radiation, as the case may be.

- (4) Notwithstanding clause 3 of Standard 1.2.1, the label on a package of irradiated food which is sold other than for retail sale must include—

- (a) a statement that the food has been irradiated; and
- (b) the minimum and maximum dose of the irradiation; and
- (c) the identity of the facility where the food was irradiated; and
- (d) the date or dates of irradiation.