

CHAPTER 2, STANDARD 2
CANNED SARDINE STANDARD

1. INTRODUCTION

This standard for canned sardines derives its authority from the Fish Inspection Regulations. It defines minimum acceptability of canned sardines for taint, decomposition, unwholesomeness and other requirements, other than weight, as defined in the Fish Inspection Act and Regulations and describes methods for determining that acceptability.

2. SCOPE

This standard applies to canned sardines in hermetically sealed containers that are prepared from any of the following species:

Sardina pilchardus (Walbaum)
Sardinops melanosticta, neopilchardus, ocellatus, sagax
Sardinella aurita, janeiro, or maderensis
Clupea harengus
Sprattus antipodum, novaehollandiae, or fuegensis
Sprattus sprattus (Clupea sprattus)
Hyperlophus vittatus
Nematolosa vlaminghi
Etrumeus micropus
Ethmidium maculatum
Engraulis anchoita
Engraulis ringens

Canned sardines shall be prepared from sound, wholesome raw material processed using good manufacturing practices.

Documents used to determine good manufacturing practice and compliance include:

- 1) International Code of Practice for Low Acid Canned Food CAC/RCP 23-1979.
- 2) Metal Can Defects Identification and Classification Manual, Department of Fisheries and Oceans, Inspection Services, 1989.
- 3) Codex Alimentarius Sampling Plans for Prepackaged Foods (AQL 6.5) CAC/RM 42-1969.

3. NOMENCLATURE

The name of the product shall be:

"Sardines"; or

"X sardines" where the "X" is the name of a country, a geographic area, the species, or the common name of the species in accordance with the applicable sections of the Recommended International Standard for Canned Sardines (CAC/RS 94-1978) and the Fish Inspection Regulations.

4. FORMS OF PRODUCT PRESENTATION

Canned sardines shall be prepared from fresh, frozen, cooked or smoked sardines and neatly arranged with at least 3 fish per can.

4.1 Packing Media

The product shall be presented in one of the following packing media with or without permitted optional ingredients:

- a) Own juice
Fish packaged without added liquid.
- b) Potable water
In conformity with the requirements of the Fish Inspection Regulations for water used in registered establishments.
- c) Spring water or mineral water
Potable water from an underground source but not obtained from a public community water supply and which meets the requirements of Section B12.001 of the Food and Drug Regulations.
- d) Vegetable broth
The liquid arising from the cooking of sound wholesome vegetables in water and which may be prepared from one or more types of vegetables. Vegetable broth may also be prepared from hydrolysed vegetable protein, but a broth so prepared requires that its components be declared in a list of ingredients.
- e) Olive oils
In conformity with:
the relevant sections of Division 9 of the Canadian Food and Drug Regulations; or

the Recommended International Standard for Olive Oil, Virgin and Refined, and for Refined Olive-Residue Oil (Ref. CAC/RS 33-1970).

- f) Other vegetable oils
Clear, refined, deodorized, edible vegetable oil in conformity with:

the relevant sections of Division 9 of the Canadian Food and Drug Regulations; or

the relevant recommended International standards adopted by the Codex Alimentarius Commission.
- g) Sauces
A thickened liquid made from acceptable food ingredients giving a characterizing flavour and odour to the product.
- h) Marinades
A thin liquid made from acceptable food ingredients, usually containing a sweetener, an acid solution or an alcoholic solution, with or without spices, herbs, seasonings, vegetables and other condiments.

4.2 Optional Ingredients

- a) Salt.
- b) Natural starches.
- c) Other optional ingredients provided that all ingredients are suitable for human consumption, are free from abnormal taste, flavour or odour and are permitted in Division 21 of the Food and Drug Regulations. Examples of such ingredients are spices, herbs, vegetable seasonings, vinegar and wine and vegetables and fruits for decorative and flavouring purposes only.

4.3 Other Presentations

Any other presentation of the product may be permitted provided that it:

- a) is sufficiently distinctive from the forms of presentation set out above; and
- b) meets all other Canadian Regulatory requirements; and
- c) is adequately described on the label in accordance with all regulatory labelling requirements.

5. SAMPLING

The sampling and tolerance plans at the front of this manual shall be used to determine the acceptability of the lot. The sampling plans dictate the minimum sample size to be taken. If necessary, in the opinion of the inspector, more than the minimum sample size specified may be taken.

- 5.1 Sampling of lots for the sensory examination of the product shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plan for Prepackaged Foods (AQL 6.5) (CAC/RM 42-1969) except that a lower acceptance number for decomposition shall be used as indicated in the sampling tables.

The tables specify the minimum number of sample units to be used for the following types of inspections:

- a) Level I - Sensory examinations of all products subject to inspection other than lots which are subject to reinspection.
- b) Level II - Sensory examinations of all products which are under reinspection.

5.2 Size of Sample Unit

The sample unit shall consist of a can of sardines and the entire contents thereof.

6. DESCRIPTION OF DEFECTS

6.1 Taint

A unit will be considered tainted when any of the following conditions are found:

- a) Rancid
The contents in the container show the following defects:
 - 1) Odour characterized by the distinct or persistent odour of oxidized oil; or
 - 2) Flavour characterized by that of oxidized oil which leaves a distinct bitter aftertaste.
- b) Abnormal
Distinct and persistent uncharacteristic odours or flavours such as burnt or acrid, metallic, or associated with feed, and not defined

as rancid or decomposed; or

Flavour or odour resulting from the improper addition or mixing of ingredients.

6.2 Decomposition

A unit will be considered decomposed when any of the following conditions are found:

- a) Odour or flavour
Persistent, distinct and uncharacteristic odour or flavour including but not limited to the following:

fruity, vegetable, musty, yeasty, sour, faecal, ammonia, hydrogen sulphide, bilge-like, putrid.

- b) Discolouration
Discolouration uncharacteristic of the species and type of pack, such as flushed pink (with a somewhat raw appearance), dark brown, yellowish to orange colours or definite red along the backbone.

- c) Texture
Breakdown of muscle structure characterized by:

- 1) muscle structure which is very tough, dry, mealy or chalky; or
- 2) muscle structure which is very soft, mushy or pasty.

6.3 Unwholesome

- a) Critical Foreign Material
A lot will be considered defective when any of the following conditions are found:

the presence of any material which has not been derived from fish (and packing media) and which poses a threat to human health (such as glass, etc.); or

distinct and persistent odour or flavour of any material which has not been derived from fish (and packing media) and which poses a threat to human health (such as solvents, fuel oil, etc.).

- b) Foreign Material
A unit will be considered defective when the following condition is found:

the presence of any material which has not been derived from fish (and packing media) but does not pose a threat to human health (such as insect pieces, sand, etc.).

c) Other Defects

A unit will be considered defective when any of the following conditions are found:

- 1) **Struvite Crystals** (magnesium ammonium phosphate crystals)
Any struvite crystal greater than 5 mm in length.
- 2) **Sulphide Blackening** (smut)
Staining affecting greater than 5% of the fish in the sample unit.
- 3) **Undesirable Parts**
Any combination of sardines from which the heads and gills have not been removed which exceeds 5% of the number of fish in the sample unit.

7. EXAMINATION METHODS

- 7.1 Complete external can examination. Open can and complete net weight determination according to the defined procedures.
- 7.2 Remove fish from can to examination tray, if this has not already been done. Examine can interior for presence of foreign material, smut, struvite, and corrosion or other can interior defects.
- 7.3 Examine liquid and surface of fish for presence of struvite crystals, smut, foreign material.
- 7.4 Gently split fish along backbone. Examine backbone for hardness - it should be easily crushed between thumb and forefinger. Observe colour of flesh, especially the presence or absence of "definite" red along the backbone. Examine texture. Examine fish for the presence of large amounts of feed.
- 7.5 Assess odour. Assess flavour, and texture upon chewing, as required.
- 7.6 Record any defect for that unit on the appropriate worksheet.

8. CLASSIFICATION OF "DEFECTIVES"

A sample unit which contains defects as described in section 6 is classified as "defective".

9. LOT ACCEPTANCE

A lot will be considered unacceptable when:

- a) any single instance of critical foreign matter occurs; or
- b) the total number of sample units found defective for taint, decomposition or unwholesomeness, individually or in combination, exceeds the acceptance number for the sample size designated in the sampling plans; or
- c) the total number of sample units found defective for decomposition exceeds the acceptance number shown in parantheses for the sample size designated in the sampling plans.