CODEX ALIMENTARIUS COMMISSION





Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - Fax: (+39) 06 5705 4593 - E-mail: codex@fao.org - www.codexalimentarius.org

Agenda Item 8

CX/FFP 14/33/10

JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON FISH AND FISHERY PRODUCTS

Thirty-third Session Bergen, Norway 17 – 21 February 2014

PROPOSED DRAFT CODE OF PRACTICE FOR PROCESSING OF FISH SAUCE (At Step 3 of the Procedure)

(Prepared by the electronic Working Group led by Thailand and Vietnam)

Governments and interested international organizations are invited to submit comments on the attached Proposed Draft Code at Step 3 (*see* Appendix II) and should do so in writing in conformity with the Uniform Procedure for the Elaboration of Codex Standards and Related Texts (see *Procedural Manual of the Codex Alimentarius Commission*) to: the Secretariat, Codex Alimentarius Commission, Joint WHO/FAO Food Standards Programme, FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy, by email codex@fao.org with a copy to Codex Contact Point, Norwegian Food Control Authority, P.O. Box 8187 Dep. 0034 Oslo, Norway, Email: coffp@mattilsynet.no, by 5 January 2014.

Format for submitting comments: In order to facilitate the compilation of comments and prepare a more useful comments document, Members and Observers, which are not yet doing so, are requested to provide their comments in the format outlined in the Annex to this document.

BACKGROUND

- 1. During the 32nd Session of the Committee on Fish and Fishery Products (CCFFP), the Committee agreed to a proposal for new work on the elaboration of the Proposed Draft Code of Practice for Processing of Fish Sauce, subject to the Commission approval.
- 2. The 36th Session of the Codex Alimentarius Commission approved new work on the proposed draft Code of Practice for Processing of Fish Sauce (REP 13/CAC Appendix VI).
- 3. The Committee agreed to establish an electronic Working Group (EWG), led by Thailand and Vietnam, open to all members and observers, working in English only, to prepare the proposed draft Code of Practice for circulation for comments at Step 3 and further consideration at the next Session of CCFFP (REP 13/FFP, paragraphs 151-153).

The Electronic Working Group

- 4. The EWG comprised 14 member countries: Canada, Ecuador, Germany, Ghana, India, Indonesia, Japan, Kenya, Malaysia, Nigeria, Norway, Republic of Korea, Senegal and United States of America; and one member organization, FAO. The list of participants is presented in Appendix I to this report.
- 5. Thailand and Vietnam prepared the proposed draft Code of Practice for Processing of Fish Sauce taking into account the following issues: general processing steps and technical guidance to be employed by fish sauce manufacturers that could vary from country to country; the document identified potential hazards and defects at each processing step starting from raw material reception and ending with final product distribution; technical guidance for controlling potential hazards and

defects at each processing step was identified in order to ensure consumer safety and product quality.

6. During the period May – October 2013, the proposed draft Code of Practice was circulated for two rounds of comments within the EWG. Comments were received from Germany, Ghana, India, Japan, Kenya, Malaysia, Nigeria, Norway, United States of America and FAO.

DEVELOPMENT OF THE PROPOSED DRAFT CODE OF PRACTICE

The most important issue was the alignment to the Codex Standard for Fish Sauce (CODEX STAN 302-2011).

- 8. The following main issues were commented on by the EWG members:
 - a) Addition of a harvest vessel step
 - c) Length of fish to be used as raw material for fish sauce production
 - d) Ratio of fish to salt in the processing step of Mixing of fish and salt
 - e) Monitoring of percent water phase salt and/or water activity to control pathogenic bacterial growth and toxin formation.
 - f) Potential hazards in fish sauce processing
- 9. A member of EWG suggested adding a harvest vessel step as it is the point in the production chain where preventive controls for the hazards of histamine and botulinum toxin in fish sauce begin. The co-chairs are of the view that the processors could conduct the sensory evaluation to control quality of fresh fish before being used as raw material in fish sauce processing and evaluate histamine levels in final products to control its toxin. Good practices for harvest vessels have been addressed in the subsection 3.1 "Fishing and Harvesting Vessel Design and Construction" under the section 3 "Prerequisite programme" of the Code of Practice for Fish and Fishery Products (CAC/RCP 52-2003). In addition, the processing steps for other aquatic animals and their products delineated in CAC/RCP 52-2003 are generally begun at raw material reception. So, the harvest vessel step was not introduced.
- 10. Several EWG members questioned the suitable size of fish to be used as raw material for fish sauce processing. According to general guidance for fishery products, size of fish greater than 5 inches (12 cm) in length is required to undergo gutting and offal removal before being used in further processing in order to prevent the formation of histamine. The suitable size of fish, not greater than 12 cm in length, was therefore maintained.
- 11. Several EWG members pointed out that it is crucial to clarify whether the ratios of fish to salt in the fish and salt mixing step refer to volume to volume or weight to weight as food grade salt commonly has a density of above 1.2 kg/l. The proposed revision was included. The common weight ratios of fish to salt are 3:1, 5:2, 3:2. In any case, the concentration of salt should not be less than 20% by weight in order to prevent spoilage and growth of pathogenic bacteria.
- 12. The most relevant factor to control pathogenic bacterial growth (e.g. *Clostridium botulinum*, *Staphylococcus aureus*) and toxin formation (e.g. scombrotoxin, botulinum toxin) during the fermentation process of fish sauce is the high concentration of salt composition used in fish sauce processing. In fish sauce, there is at least 20% of salt by weight which would completely inhibit the growth of pathogenic bacteria. Previous studies had shown that *C. botulinum* of both proteolytic and non-proteolytic types, related to the production of botulinum toxin, were not able to survive in conditions where salt concentrations were greater than 10% which corresponded to a water activity of less than 0.94 (CDC, 1998, U.S. FDA, 2011 and 2013). In case the botulinum toxin was formed, such toxin was inactivated by proteolytic enzymes in fish during the fermentation process (FAO, 1992). Similar to other salted fishery products, fish sauce's process eliminates preformed toxin and

prevents toxin formation during the processing. Hence, the monitoring of percent water phase salt (WPS) or water activity (a_w) was not introduced.

- 13. Regarding the histamine formation during the fermentation process, the increase of histamine to a toxic level (500 ppm) during the fermentation is unlikely because the fish sauce, made from mixing of fish to salt at weight ratios of 3:1, 3:2 or 5:2, has high salt concentrations of over 20% which can prevent histamine formation by the spoilage bacteria. Provision of the histamine levels in final products is also referred to in CODEX STAN 302-2011. Therefore, the steps of fermentation, separation, blending and storage do not need to address histamine as a potential hazard.
- 14. Since the occurrence of hazards like microbiological and chemical contamination and microbial toxins are considered improbable at the processing steps of separation, fermentation, blending, storage and capping, so the potential hazard at these processing steps are maintained as "unlikely".
- 15. After the second round of circulation, the co-chairs improved the example of flowchart of fish sauce processing for readability and consistency of practice. So, some sections in the proposed draft COP were slightly changed.

RECOMMENDATION

- 16. The 33rd Session of the CCFFP is invited to:
 - Note the report of the EWG.
- O Discuss the Proposed Draft Code of Practice for Processing of Fish Sauce as presented in Appendix II.

Appendix I

List of Participants

CANADA

John Hoeve

Senior Policy Analyst - Fish, Seafood and Production

Division

Canadian Food Inspection Agency Email: <u>john.hoeve@inspection.gc.ca</u>

ECUADOR

Fernanda Hurtado Angulo

Responsible for technical and quality of

the LAQM

National Fisheries Institute Ecuador

Email: fhurtado@inp.gob.ec

GERMANY

Ute Schroder

Scientist Federal Research Institute of Nutrition and Food

Department for Fish Quality Palmaille 9 D-22767 Hamburg

Tel.: +49 40 38905-271 Fax: +49 40 38905-262

E-Mail: <u>ute.schroeder@mri.bund.de</u> / Uter.Ostermeyer@mri.bund.de

Petra Starke

Bundesministerium fur Ernahrung, Landwirtschaft und Verbraucherschutz (BMELV) (Fedelral Ministry of Food,

Agriculture and Consumer Protection)

Referat 314

WilhelmstraBe 54, 10117 Berlin, Germany

Tel.: +49 30 18529 3685 Fax: +49 30 18529 3273

 $\underline{Email: \underline{Codex.germany@bmelv.bund.de}}$

Petra.Starke@bmelv.bund.de

www.bmelve.dee

GHANA

John Oppong-Otoo

Codex Contact Point

Ghana Standards Authority

P. O. Box MB 245 Accra, Ghana

Email: codex@gsa.gov.gh

Dr. Lawrence Abbey

Quality Manager

Council for Scientific and Industrial Research

Food Research Institute P. O. Box M20 Accra, Ghana Email: abbeyld@yahoo.com

Jessica Aku Nkansah

Head, Fish Control and Export Project Department

Ghana Standards Authority P. O. BOX MB 245 Accra, Ghana

Email: jahafia@yahoo.com

INDIA

 $\underline{R.M.Mandlik}$

Deputy Director (Technical)

Export Inspection Council of India,

Department of Commerce, Ministry of Commerce &

Industry, Government of India

3rd Floor- NDYMCA Cultural Centre Building, 1st Jai Singh, Road, New Delhi-110001. Telephone No: +91-11-

23341263, 23748189

Email: tech1@eicindia.gov.in

INDONESIA

Dr. Santoso Karto Dimedjo

Official Position

Director of Fisheries Product Processing Country /

Organization

Ministry of Marine Affairs and Fisheries, Republic of

Indonesia

Email: codex kkp@yahoo.com

JAPAN

Mr. Akira MIKI

Deputy Director

Inspection and Safety Division, Department of Food Safety,

Ministry of

Health, Labour and Welfare E-mail: codexj@mhlw.go.jp

Ms. Rei NAKAGAWA

Assistant Director for Standards and Evaluation Division, Department of Food Safety, Ministry of Health, Labour and

Welfare

E-mail: codexj@mhlw.go.jp

Dr. Hajime TOYOFUKU

Head of Food Safety Department of International Health and

Collaboration, National

Institute of Public Health, Ministry of Health, Labour and

Welfare

E-mail: toyofuku@niph.go.jp

Mr. Haruo TOMINAGA

Associate Director for Fisheries Processing Industries and

Marketing Division Fisheries Agency, Ministry of

Agriculture, Forestry and Fisheries Email: haruo_tominaga@nm.maff.go.jp

KENYA

Ephraim Wairangu

Designation: Principal Fisheries Officer

Institution: Directorate of Fish Quality Assurance and

Marketing, Ministry of Fisheries Development, Nairobi,

Kenya

P.O. Box 58187-00200

Email: emwairangu@yahoo.com

Edwin Muga

Designation: Principal Fisheries Officer

Institution: Directorate of Fish Quality Assurance and

Marketing, Ministry of Fisheries Development, Nairobi,

Kenya

P.O. Box 58187-00200

Email: otmuga@yahoo.com

MALAYSIA

Che Rohani Awang

Deputy Director

Promotion and Technology Development Center

Malaysian Agriculture Research and Development Institute

(MARDI)

Persiaran MARDI-UPM

43400 Serdang, Selangor, Malaysia Phone: +603 8943 7715

Fax: +603 8943 7137 Email: <u>cra@mardi.gov.my</u> Hamdan bin Jaafer

Head of Fisheries Biosecurity Center

Lot. 82, Jalan Carruthers off Jalan Sultan Salahuddin

50480 Kuala Lumpur, Malaysia Phone: +603 2697 0045/0307 Fax: +603 2202 8856

Email: hamjaa01@dof.gov.my
Copy to ccp malaysia@moh.gov.my

NIGERIA

Dr. Adewale Olusegun Obadina

Food Scientist

The Department of Food Science and Technology

Federal University of Agriculture

Abeokuta, Nigeria

Email: <u>obadinaw@gmail.com</u> CC: <u>codexng@sononline.org</u>

NORWAY

Ms Marit Fallebø

Senior AdviserNorwegian Food Safety Authority, Head

Office

E-mail: mafal@mattilsynet.no

Mr Geir Olav Valset

Senior AdviserNorwegian Food Safety Authority, Head

Office

E-mail: geir.valset@mattilsynet.no

Mrs Vigdis Synnøve Veum Møllersen

Senior AdviserNorwegian Food Safety AuthorityCodex

Contact Point

E-mail: visvm@mattilsynet.no

REPUBLIC OF KOREA

Kim Chunsoo

Food Standard Division

Korea Food and Drug Adminstration

Tel: +82-43-719-242

SENEGAL

Dr Ibrahima Cisse

Bromatologie, Hygiène-Qualité et Technologie des Aliments

VIETNAM

Dr Vu Ngoc Quynh

Secretary General Office Director

Vietnam National Codex Committee.

135 Nui Truc, Street

Hanoi, Viet Nam

Tel: 0913552166

E-mail: vungocquynh@vfa.gov.vn

Nguyen Giang Thu

Deputy Director General

Department of Science, Technology an Environment

Ministry of Agriculture and Rural Development

02 Ngoc Ha Str., Ha Noi, Vietnam

84 4 373 47170

Email: thung.khcn@mard.gov.vn

FAO

Dr. Karunasagar Iddya

Senior Fishery Industry Officer
Products, Trade and Marketing Service

Room F-521, Food and Agriculture Organization

Viale delle Terme di Caracalla 00153, Rome, Italy

Tel: +39 06 57054873

Email: Iddya.Karunasagar@fao.org

Chef du Bureau de Normalisation

Direction des Industries de Transformation de la Pêche

BP: 50700 -CP: 18524 Dakar; Tel: fixe: +221 33 8530801; Cel: +221 771846113

Email: Ibrahima cisse@hotmail.com

THAILAND

Chirdsak Vongkamolchoon

Deputy Director - General

Department of Fisheries, Ministry of Agriculture and

Cooperatives

50 Kaset-Klang, Phahol Yothin Road, Chatuchak

10900 BANGKOK

THAILAND

Tel: +66 (2) 5620525 Fax: +66 (2) 562 0561

E-mail: chirdsakv@yahoo.co.th

Manat Larpphon

Senior Standards officer, National Bureau of Agricultural Commodity and Foods Standard, Ministry of Agricultural

and Cooperatives, Thailand Tel. +66 (2) 561 2277

Fax. +66 (2) 561 3357 Email: manat@acfs.go.th

USA (United States of America)

Clarke Beaudry

Consumer Safety Officer

Office of Food Safety

US Food and Drug Administration

Email: Clarke.beaudry@fda.hhs.gov

Queen Henderson

Food Scientist, Seafood Inspection Program

National Marine Fisheries Service United States Department of Commerce

Email: <u>queen.henderson@noaa.gov</u> <u>Ken Lowery</u>

International Issues Analyst

United States Department of Agriculture Email: Kenneth.lowery@fsis.usda.gov

Appendix II

PROPOSED DRAFT CODE OF PRACTICE FOR PROCESSING OF FISH SAUCE

(At Step 3 of the Procedure)

This Code of practice for processing of fish sauce has been developed primarily to be used as a guideline to improve the processing practices of fish sauce to meet international requirements. The application of GMP, HACCP and DAP for this traditional product should be promoted to ensure consumer health and safety as well as fish sauce quality. Fish sauce is a translucent and not turbid liquid product with salty taste and fish flavour obtained from the fermentation of a mixture of fish and salt at an appropriate ratio. Fish sauce can be made from both marine and freshwater fish. The most popular marine fish used as a raw material in fish sauce processing is anchovy which is generally in a small size, not greater than 12 cm in length. Anchovies yield fish sauce products of high quality with the characteristic aroma and reddish brown colour. Fish sauce fermentation relies on endogenous enzymes and indigenous bacteria of raw materials. Other ingredients like enzymes can be added to improve the fermentation process. Salt is an essential ingredient in fish sauce production in order to control the types of microorganisms and prevent defective fermentation. The quality characteristics of colour, clarity, aroma (odour) and flavour are used to determine the end of the fermentation process.

This Code will address the general processing steps and technical guidance to be employed by fish sauce manufacturers which could vary from country to country. Potential hazards and defects at each processing step starting from raw material reception and ending with final product distribution will also be identified. In addition, each processing step will include technical guidance for controlling the identified hazards and defects that help ensuring consumer safety and product quality.

Example of a Flow Chart of Fish Sauce Processing

This flowchart is for illustrative purposes only. For in-factory implementation of HACCP principles, a complete and comprehensive flow chart has to be drawn up for each process.

References correspond to relevant Sections of the Code. 1. Reception of raw materials 1.2 Salt 1.1 Fish 1.2.1 Salt handling and storage 2. Mixing of fish and salt 15. Application of fermentation aids 3. Fermentation 4. First separation 5. Brine preparation Fish residue First extract Brine 6. Succeeding fermentation 7. Separation* Fish residues Extracts 16. Heating 17. Ingredients and additives 8. Blending 9. Filtering 10. Storage 11. Bottling 12. Capping 18. Packaging materials 13. Labelling/packaging * could be separated more than 2 times Optional

14. Transportation/distribution

1. Reception of raw materials

1.1 Fish

Potential hazards: histamine, microbiological contamination, biotoxins, chemical contamination (including

pesticides), physical contamination

Potential defects: decomposition, physical contamination

Technical Guidance:

- For fish or parts of fish, raw materials specifications should include the following characteristics:
 - organoleptic characteristics, such as appearance, odour, texture;
 - chemical indicators of decomposition and/or contamination, for example, total volatile basic-nitrogen (TVBN), histamine, heavy metals, pesticide residues, nitrates;
 - microbiological criteria (to prevent the processing of raw material containing microbiological toxins) for fish with risk;
 - veterinary drug residues (when raw fish material are from aquaculture);
 - foreign matters.
- Skills should be acquired by fish handlers and appropriate personnel in sensory evaluation techniques to
 ensure that raw fish meet essential quality provisions of appropriate Codex Standards and in sorting of
 fish species that pose a risk of biotoxins such as ciguatoxin in large carnivorous tropical and subtropical
 reef fish.
- Fish greater than 12 cm in length that required gutting on arrival at the processing facility should be gutted efficiently without undue delay and with care to avoid contamination.
- Fish should be rejected if it is known to contain harmful, decomposed or extraneous substances that are unable to be reduced or eliminated to an acceptable level by normal procedures of sorting or preparation.
- Information about harvesting areas should be recorded.

1.2 Salt requirements

Potential hazards: chemical and physical contamination

Potential defects: incorrect composition

Technical guidance:

- The quality of salt used in salting of fish should possess an appropriate composition for the product.
- The composition of salt differs according to the origin. Mine salt and solar salt of marine origin contain several other salts such as calcium sulphate, magnesium sulphate and chloride as impurities. Solar salt is recommended to be stored at least 2 months before using in order to obtain a good taste of fish sauce.
- Salt used should be inspected to ensure that it is clean, not used before, free from foreign matter and foreign crystals, and shows no visible sign of contamination with dirt, oil, bilge or other extraneous materials.
- The size of the salt granules used should be carefully considered. Medium size salt crystal should used. Use clean salt without contaminants. If small size salt is used, the outer skin of fish will rapidly loose moisture and salt burn can occur which will prevent salt penetration into the fish. Consequently, inner of fish can be spoiled. In case of too large salt crystal, it can slowly penetrate, thus fish might be spoiled before preservation effect of salt occurs.

1.2.1 Salt handling and storage

Potential hazards: chemical and physical contamination

Potential defects: unlikely

Technical guidance:

• Salt should be transported and stored dry and hygienically covered in salt bins, storerooms, containers or in plastic sacks.

2. Mixing of fish and salt

Potential hazards: histamine, microbiological contamination (Clostridium botulinum and Staphylococcus aureus toxins)

Potential defects: decomposition, physical contamination

Technical Guidance:

- Fish and salt should be mixed thoroughly by trained personal or machines to ensure the proper contact of salt to fish so as to prevent the growth of pathogens and the decomposition during fermentation. All the apparatus used to mix fish and salt should be rust-free and resistant to salt.
- In order to control the ratio of fish to salt for preventing spoilage and growth of pathogenic bacteria, proper ratios of fish to food grade salt should be met. Common weight to weight ratios are 3:1, 5:2, 3:2. In any case, the concentration of salt should not be less than 20% by weight.

3. Fermenting

Potential hazards: unlikely

Potential defects: undesirable odour and taste

Technical Guidance:

- Care should be taken to ensure the cleanliness of the fermentation area and tanks. Fermenting tanks should be able to prevent product contamination.
- Fermentation should be in between 10-18 months to achieve good quality of fish sauce from natural fermentation in a tropical zone. When fermentation aids are used, the period can be varied. However, the fermentation process should not take less than 6 months.

4. First separation

Potential hazards: unlikely

Potential defects: incorrect separation (e.g. objectionable matter)

Technical Guidance:

- All utensils should be clean
- Liquid and solid (fish residue) should be completely separated.
- Liquid should be translucent solution

5. Brine preparation

Potential hazards: unlikely

Potential defects: undesirable odour and taste

Technical Guidance:

• Brine, preferably saturated, added to fish residues should be prepared from potable water and food grade salt for succeeding fermentation.

6. Succeeding fermentation

Potential hazards: unlikely

Potential defects: undesirable odour and taste

Technical Guidance:

• Succeeding fermentation of the fish residues could be carried on as long as desirable extracts are obtained.

7. Separation

Refer to Step 4: First Separation

8. Blending

Potential hazards: unlikely

Potential defects: Ingredient measurement errors, unauthorized food additives

Technical Guidance:

• Total Nitrogen (TN) of fermentation extract batches should be analyzed before blending. Total nitrogen and amino acid nitrogen content in the final product must be in compliance with *Standard for Fish Sauce* (CODEX STAN 302-2011).

- To achieve good quality fish sauce, ingredients should meet the required characteristics and appropriated concentrations.
- All utensils should be clean.
- Food additives and levels used need to be in compliance with the *Standard for Fish Sauce* (CODEX STAN 302-2011), and used in compliance with *General Standard for Food Additives* (CODEX STAN 192-1995), and other relevant regulations. Food additives used need to be identified with names and identification numbers which are complied with Codex *Class Names and the International Numbering System for Food Additives* (CAC/GL 36-1989).
- Before mixing, chemical properties, essential quality factors should be monitored, and the results should be recorded.

9. Filtering

Potential hazards: chemical contamination from a cleaning or disinfection agent

Potential defects: foreign matters and turbidity

Technical Guidance:

- Filtering system should be cleaned and kept in an appropriate environment to prevent contamination.
- Filtering system should be checked regularly to ensure its ability to operate properly.

10. Storage

Potential hazards: unlikely Potential defects: unlikely

Technical Guidance:

• The storage tanks with lid should be clean, resistant to rust and salt, located in an appropriated area.

11. Bottling

Potential hazards: residual chemical cleaning agent, physical contamination such as glass fragments.

Potential defects: foreign matters, incorrect volume, defective and unclean bottles and containers

Technical Guidance:

- Containers should be randomly and regularly checked for defects and cleanliness.
- Bottling machines should be kept clean to prevent contamination.
- Defected containers should be taken out to avoid the damage of the filling and capping machine.
- The containers should be made with material that is high salt content resistant and will not release any harmful substances for human health.

12. Capping

Potential hazards: unlikely

Potential defects: loose plastic matters, broken caps, foreign matters

Technical Guidance:

- Caps should be checked before capping.
- After capping foreign matters should be checked.

13. Labelling/packaging

Potential hazards: unlikely

Potential defects: incorrect labeling

Technical Guidance:

• Refer to Sections 8.2.3

14. Transportation/distribution

Potential hazards: unlikely

Potential defects: contaminated and damage containers and cartons

Technical Guidance:

- Cartons should be cleaned, dry, durable and suitable for the intended use and avoid the damage of the packaging materials.
- Cartons should be applied to avoid the damage of containers.
- Cleanliness and suitability of the vehicles should be inspected before transportation.
- Sanitation of the cargo should be verified before loading.
- Care should be taken before loading to avoid damage and contamination of the products and to ensure the packaging integrity.

15. Application of fermentation aids

Potential hazards: microbiological contamination

Potential defects: unlikely

Technical Guidance:

- Fermentation aids should be stored at appropriate temperature.
- Enzymes and bacterial cultures may be used as fermentation aids for non-traditional fish sauce products.

16. Heating

Potential hazards: unlikely
Potential defects: over heating

Technical Guidance:

- Adequate temperature and time combination should be applied.
- The temperature and heating time should be monitored and recorded.

17. Ingredients and additives

Potential hazards: chemical and physical contamination

Potential defects: unlikely

Technical guidance:

• Ingredients and additives should be stored appropriately in terms of temperature and humidity.

- Ingredients and additives should be stored in a dry and clean place under hygienic conditions.
- Ingredients and additives should be properly protected and segregated to prevent cross-contamination
- Defective ingredients and additives should not be used.

18. Packaging materials

Potential hazards: chemical and physical contamination

Potential defects: unlikely

Technical guidance:

- Packaging used should be stored appropriately in terms of temperature and humidity.
- Packaging used should be properly protected, cleaned and segregated to prevent cross-contamination.
- Defective packaging should not be used.

Annex

GENERAL GUIDANCE FOR THE PROVISION OF COMMENTS

In order to facilitate the compilation and prepare a more useful comments' document, Members and Observers, which are not yet doing so, are requested to provide their comments under the following headings:

- (i) General Comments
- (ii) Specific Comments

Specific comments should include a reference to the relevant section and/or paragraph of the document that the comments refer to.

When changes are proposed to specific paragraphs, Members and Observers are requested to provide their proposal for amendments accompanied by the related rationale. New texts should be presented in underlined/**bold** font and deletion in strikethrough font.

In order to facilitate the work of the Secretariats to compile comments, Members and Observers are requested to refrain from using colour font/shading as documents are printed in black and white and from using track change mode, which might be lost when comments are copied/pasted into a consolidated document.

In order to reduce the translation work and save paper, Members and Observers are requested not to reproduce the complete document but only those parts of the texts for which any change and/or amendments is proposed.