

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
United Nations



World Health
Organization

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Agenda Item 5

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD HYGIENE

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PROPOSED DRAFT GUIDELINES ON THE APPLICATION OF GENERAL PRINCIPLES OF FOOD HYGIENE TO THE CONTROL OF FOODBORNE PARASITES

Comments of

European Union, Ghana, India Mali, Mexico, Nigeria, Philippines, Senegal, Thailand and IDF

EUROPEAN UNION

General comments

- The European Union and its Member States (EUMS) would like to congratulate Japan and Canada for leading the work on the Proposed Draft Guidelines on the Application of General Principles of Food Hygiene to the Control of Foodborne Parasites and for the good progress made.

- Paragraph 13: Recommendations

The EUMS do not see at this moment the need to elaborate specific annexes.

- Annex: Need for revision of numbering of sections, chapter, ... Some examples:

- From section 7 it goes to section 9
- From 5.5, it goes to 5.7
- Under each division (A, B, C and D) of section 3, there are chapters 3.1, 3.2

The EUMS would like to submit the specific comments outlined below:

Specific comments

- Paragraph 5, third sentence:

- It is proposed to add "fish, molluscs, crustaceans": "... Epidemiological data collection in meat producing animals, **fish, molluscs, crustaceans** and environmental parasite surveys could be effective in identifying hazards and collecting information to be used for the decisions making of risk management strategies..."

Justification: Also relevant for these groups of animals.

- Paragraph 8

- An additional sentence is proposed at the end of the paragraph: "...viruses). **The risk on direct human infection of parasites by drinking water can be managed by following the recommendations in the Code of Hygienic Practice for Collection, Processing and Marketing of Natural Mineral Waters (CAC/RCP 33-1985) and the Code of Hygienic Practice for Bottled/Packaged Drinking Waters (Other than Natural Mineral Waters) (CAC/RCP 48-2001).**"

Justification: Drinking water might be a source of foodborne parasites and therefore should be addressed in the guidance. References to general codes on drinking water suffice since no specific control measures for parasites have been identified.

- Paragraph 12.

- It is proposed to delete the most relevant parasites in the 4 food categories:

"Meat and meat products

• ~~Taenia solium~~

• ~~....~~

~~....~~

• ~~Toxoplasma gondii"~~

Justification: The most important parasites in the different food categories are mentioned in section 3 (for example paragraph 20 for meat). In addition, the information is available in the report of the FAO/WHO Expert meeting.

- Paragraph 17, definition of "Larvae"
 - Proposed change: "**Larvae** - immature form of **helminths** ~~any parasite~~, before the assumption of the mature shape. It -can be infective or not."

Justification: not all parasites have a larvae stage, for instance Toxoplasma and other protozoa. They have an intermediate host, but no larval stage.

- Paragraph 22
 - The following change is proposed:

"22. Faeces of domestic and wild animals (e.g. Toxoplasma oocysts in felids), as well as human faeces (e.g. Taenia eggs), may contain parasites that are infective to domestic food-producing animals. Some parasites may also be transmitted to domestic animals or other animal hosts when these animals eat infected tissues from other animals. Where parasites will not be controlled at a later processing stage, ~~the feasibility of producing meat products with~~ concepts to avoid environmental contamination of foodborne parasites by controls during primary production should be considered before production begins. ~~A production area may be unsuitable if controls cannot be applied at primary production and they will not be controlled at later stages.~~ The risk associated with the introduction of organic material (e.g., faecal and other material that may contain oocysts or eggs) from non-food-producing animals into the production environment should also be addressed."

Justification: The recommendation seems disproportionately strict excluding certain areas from meat production, while a more positive recommendation should be given by deleting certain words with similar effect.

- Paragraph 26 should be deleted.

Justification: This is not possible in practice while a similar, more realistic recommendation is made in paragraph 27.

- Paragraph 28: Proposal of amendment:
 - "28. Good hygienic practices including management of waste, ~~such as maintaining and using sanitary toilet facilities should be in place and implemented. Toilets for staff and visitors should be provided.~~ Human faeces should be disposed of in such a way as to eliminate contact with animals or pasture land."

Justification: Covered by paragraph 36.

- Paragraph 29:
 - Feed for food-producing animals should be manufactured and stored in such a manner as to avoid parasite contamination. ~~Feed~~ **Feed** sources should conform to section 4, 5 and 6 of the Code of Practice on Good Animal Feeding (CAC/RCP 54-2004).

Justification: This paragraph is about feed and not food.

- Paragraph 33 should be deleted.

Justification: Guidance is repeated in paragraph 39.

- Paragraph 36: The following amendment is proposed:
 - "Humans may excrete parasite eggs that enter water and develop into larval stages that subsequently infect farmed fish. In order to minimize the opportunity for contamination of the production environment with parasitic stages from human faeces, ~~installation and use of the~~ on-farm sanitary facilities should be installed, e.g., functional latrines in the field, and an adequate means of hygienically washing and drying hands".

Justification: Editorial Amendment.

- Paragraph 37:
 - 37. Refer to Chapter 1.4. of the OIE Terrestrial Animal Health Code (2014). Surveillance and monitoring of foodborne parasites in food animals and in species that are potential sources of parasites could be effective in developing risk management strategies. Monitoring and surveillance can be useful as tools to verify the effectiveness of parasite controls, **and** should begin at primary production.

Justification: Editorial amendment.

- Paragraph 40: The following deletion is proposed:
 - ~~40. Important milk-transmitted foodborne parasites include *Cryptosporidium* spp. and *Toxoplasma gondii*. Unpasteurized milk has been associated with outbreaks of cryptosporidiosis and toxoplasmosis. Contamination of unpasteurized milk with *Cryptosporidium* may result from unsanitary milking conditions, such as when the udders are not properly cleaned. Outbreaks of toxoplasmosis have been associated with the consumption of unpasteurized goat and camel milk. Tachyzoites of *Toxoplasma* in recently infected animals may be excreted in the milk, resulting in milk-borne infection. Unpasteurized milk has been associated with outbreaks of cryptosporidiosis in Australia and the United Kingdom.~~

Justification:

Although *Cryptosporidium* may contaminate milk, it is not excreted in milk. For that reason milk is not mentioned as a food vehicle associated with *Cryptosporidium* in the report of the FAO/WHO Expert meeting. Therefore mentioning it in this section may be confusing; parasites can contaminate milk or other foods because of cross contamination (from faeces) but should not be considered as milk transmitted parasites.

The EUMS see no need to list specific countries.

- Paragraph 42. Proposal:
 - "42. Cats should be excluded from barns and food production, handling and storage areas used for dairy herds (e.g. cows, goats, sheep and camels). ~~Dairy herds should not be allowed to graze areas where Felidae are commonly found since cats are the only definitive hosts for *Toxoplasma gondii* and faeces from recently infected cats contain environmentally resistant oocysts that contaminate fields and other feeding areas.~~"

Justification: Not realistic.

- Paragraph 50 should be deleted:

Justification: There are no records of *Anisakis* in the flesh of large tuna but nobody has examined the flesh of large tuna, due to its sheer size/volume. Although empirical information suggests that the stomach and gut wall of large tuna (and other large fish) is too thick for *Anisakis* to penetrate and pass through, deletion is proposed because of the paucity of the scientific information, pending more robust data is made available.

- Paragraph 51: The EUMS propose a new wording turning this text into a recommendation, in the same line as the meat section (paragraph 36).
 - **"Humans may excrete parasite eggs that enter water and develop into larval stages that subsequently infect farmed fish. In order to minimize the opportunity for contamination of the production environment with parasitic stages from human faeces, on-farm sanitary facilities should be installed, e.g., functional latrines in the field, and an adequate means of hygienically washing and drying hands"**.

Justification: Animals are covered by points 56 and 57, but we consider that the recommendation for on-farm sanitary facilities should be clearly stated in a separate bullet.

- A new paragraph is proposed after Paragraph 51, rewording a former paragraph of an old version of the document.
 - **"Material derived from on-board evisceration of fish showing signs of infection by parasites communicable to humans should not be disposed of at sea unless it has undergone a treatment that kills the parasites, in order not to maintain the parasite life cycle"**.

Justification: Measures to avoid the maintenance of the parasite life cycle should be considered in the text.

- Paragraph 61:

- Proposal: "61. Eviscerating fish without any undue delay during harvest is helpful to prevent parasite migration of **Anisakidae larvae** from the viscera into the **flesh**-meat after harvest."

Justification: This is only relevant for Anisakidae larvae. In case of fish, "flesh" is a better wording than "meat".

- Paragraph 67, last sentence:
 - Proposal: "Adequate washing is one control measure feasible to be used in many cases, **although it should be noted that many parasite eggs or (oo)cysts are sticky and difficult to remove from fruits and vegetables.**

Justification: Consistency of this statement on washing at primary production with the one on washing at later stages (paragraph 88).

- Title 4.2 and 4.2.1: Proposal to delete.

Justification: There is no added value.

- Paragraph 83:
 - "83. Many parasites in food are susceptible to freezing. However, specific time/temperature combinations are required to inactivate parasites by freezing, and these are also dependent on the food type and portion size. Some parasites (e.g. *Trichinella nativa* and *T. britovi* larvae or eggs of *Echinococcus multilocularis*) are **relatively** resistant to freezing. *T. nativa* can survive up to 5 years at -18°C. **Strict conditions e.g. freezing of meat cannot at a core temperature of -18°C in the core for 3 days should** be recommended in areas where *T. britovi* is found in wild mammals. **Freezing for appropriate time at -80°C is needed to inactivate *E. multilocularis*.**"

Justification: Appropriate freezing, i.e. at a temperature of -18°C in the core of the meat product for 3 days, kills *T. britovi* larvae. Example of *E. multilocularis* can be added.

GHANA

Ghana recommends that the WHO guidelines for drinking-water quality should be referenced in the relevant sections of the Proposed Draft Guidelines. This is because water could be an important source of parasite infection. Infective stages of certain parasites are known to occur in water, hence ingestion of such contaminated water could have negative public health implications. Reference should therefore be made to indicate the need to use water quality standards that is protective of public health.

C. Fish and fishery products

Para 47

Amend para 47 as follows for clarity.

.....For example, fish that may contain foodborne parasites, but may not have gone through appropriate parasite control can be marketed as **"not suitable for raw consumption"**. If the fish is cooked before consumption ~~although~~ allergies may need to be considered.

INDIA

General Comments

India would like to thank Japan and Canada for development of the document on control of foodborne parasites. The document has come up well and is generally acceptable. However, there are some inconsistencies that need to be addressed. Also, the Guidelines make a reference to relevant OIE documents that may have scope and mandate different from that of the Codex Alimentarius Commission and hence there is a need to clearly indicate that the Guidelines deal with matters related to food safety only. Proposals to address these and some other concerns are provided in the Specific Comments below.

Specific Comments

I. Section 2.1 Scope

Para 10

Insert the following text at the end of paragraph 10:

'For foods not covered by the above four categories, the guidance on primary production in the General Principles of Food Hygiene (CAC/RCP 1-1969) and other relevant product specific hygiene codes is considered adequate.'

Rationale: Paragraph 8 indicates that the guidelines are applicable to all foods while paragraph 10 conveys that the Section 3 (Primary Production) is subdivided into 4 food categories conveying that the same would apply only to the 4 food categories. This inconsistency needs to be appropriately addressed.

II. Section 2.2 Use

1. Para 14

Add the following text at the end of Para 14:

'These Guidelines, however, do not deal with matters of animal health unless directly related to food safety or suitability'.

Rationale: As reference is being made to the other applicable texts like those developed by the OIE, which deals also with matters other than food safety, it is proposed to add the above text to make the intention clear that these guidelines relate only to food safety as per the mandate of the Codex Alimentarius Commission.

2. Para 15

Delete the paragraph as the Guidelines do not have any annexes/supplements at present.

III. Section 2.3 Definitions:

Include definition of the term "Life Cycle" in the proposed draft Guideline. The life cycle can be defined as under:

"Life Cycle: This is the cycle represented by the parasites which passes through various stages. The parasite may pass its life cycle in one and the same host or it may change its host".

Rationale: The term Life cycle is referred at several places in the document and hence needs to be defined. The above definition is from the text book-Parasitology in Relation to Clinical Medicine, Chatterjee, 12th Edition- 1980, which may be used as a starting point for discussion.

IV. Section 3 Primary production

1. Category A. Meat, Subsection 3.2 Hygienic production of food sources

i. Para 28

Amend third sentence as under:

*'Human faeces should be disposed of in such a way as to eliminate contact **of potentially infectious faeces** with animals or pasture land.'*

Rationale: For better clarity.

ii. Para 31

Amend the text as under:

'Primary producers should supply water which is not a significant source of transmission of foodborne parasite to food-producing animals. ~~and block access of food producing animals to surface water to minimize the potential for infection with parasites.~~'

Rationale: The text presumes that all surface water will always be a significant source of transmission of parasite, which is not correct. Also, the first part of the sentence provides adequate guidance in the context without excluding the possibility of utilizing multiple sources of water.

2. Category B. Milk and milk products, Subsection 3.1 Environmental Hygiene

Para 42

It is proposed to amend the text as under:

*'Cats should be excluded, **as far as reasonably practical,** from barns and food production, handling and storage areas used for dairy herds (e.g., cows, goats, sheep and camels). **Appropriate control measures should be applied to minimize contamination from grazing Dairy herds should not allowed to graze areas where Felidae are commonly found since other feeding areas. Where this is not feasible the dairy herds should not be allowed to graze in such areas.**'*

Rationale: To make the guidance implementable in diverse situations.

3. Category C Fish and Fishery Products

Para 47

Amend second sentence as under:

'For example, fish that may contain foodborne parasites, but may not have gone through appropriate parasite control can be marketed as "not suitable for raw consumption" if the fish is cooked before consumption although allergies may need to be considered.'

Rationale: The text proposed to be deleted appears to be redundant and irrelevant in the context.

MALI**Observations d'ordre général**

Il approuve globalement l'avant-projet et est favorable à sa progression à l'étape suivante de la procédure.

Observations particulières

SECTION 3 : Prendre en compte le sous-point **3.5 : Contrôle des opérations** dans les points B et D.

Recommandation

Compte tenue de l'importance des maladies parasitaires humaines liées à l'eau dans les pays en développement, le Mali recommande la conduite de nouveaux travaux sur des Principes Généraux d'Hygiène Alimentaire à la maîtrise des parasites de l'eau.

MEXICO**COMENTARIOS GENERALES:**

México considera importante que se utilicen los nombres completos de los microorganismos incluyendo el género y especie, pues a lo largo del documento se menciona por ejemplo *Trichinella* o *Cysticercus*, en lugar de *Trichinella* spp. o *Cysticercus bovis*, y no todas las especies de un parásito están asociadas a enfermedades transmitidas por alimentos. Además se debería mantener el uso de la letra itálica (*cursiva*) y la primera letra del género en mayúscula, respetando las características de la nomenclatura binomial.

COMENTARIOS PARTICULARES:

Párrafo	COMENTARIOS	JUSTIFICACIÓN
3	Es necesario conocer los ciclos de los parásitos, las vías de transmisión y los requisitos ambientales para saber las medidas de control que pueden resultar efectivas. Los parásitos transmitidos por los alimentos pueden infectar a los humanos a través de la ingesta de alimentos frescos o procesados que se hayan infestado (p. ej., la carne que contiene larvas de <i>Trichinella</i> <u>spp.</u> o quistes tisulares de <i>Toxoplasma</i> <u>gondii</u>), o que se hayan contaminado con parásitos en fase infecciosa (p. ej., quistes, ooquistes, huevos). En el primer caso, los seres humanos pueden infectarse a través del consumo de carnes y despojos crudos, poco hechos o mal elaborados de animales domésticos, caza, pescado, crustáceos, cefalópodos y moluscos con parásitos en fase infecciosa. En el segundo caso, los seres humanos pueden infectarse también a través de la ingesta de agua y alimentos como las frutas y hortalizas frescas con parásitos en fase infecciosa, debido a contaminación fecal animal o humana (p. ej., ooquistes de <i>Cryptosporidium</i> <u>spp.</u> en las verduras frescas).	México considera importante mantener el uso de la nomenclatura binomial (indicar género, especie y en letra itálica), y cuando corresponda especificar spp. <i>Trichinella</i> spp. <i>Toxoplasma gondii</i> <i>Cryptosporidium</i> spp.
4	Se puede lograr el control de los parásitos transmitidos por los alimentos evitando la infección con fases infecciosas de los animales de cría destinados a la producción de alimentos (p. ej., el ganado, las aves de corral, el pescado), mediante análisis de laboratorio y medidas de seguimiento (p. ej., las que se incluyen en la sección 7.2.1 de las Directrices para el control de <i>Trichinella</i> spp. en la carne de suidos), la prevención de la contaminación de alimentos frescos y elaborados con fases infecciosas o inactivando los parásitos de los alimentos durante la elaboración. (...)	Comentario a la traducción al español: México considera importante que se mantenga el uso correcto de la nomenclatura binomial en la versión en español del documento. Para éste caso letra cursiva en el género y la abreviatura spp. sin letra cursiva. <i>Trichinella</i> spp.
6	La incidencia y la distribución de las especies parásitas en las materias primas utilizadas para los alimentos pueden estar afectadas por los cambios climáticos, los usos del	Consideramos que dentro de los ejemplos que pueden favorecer la propagación de enfermedades parasitarias transmitidas por

	<p>suelo y por otros factores ambientales. Otros factores que también inciden en la propagación de enfermedades parasitarias transmitidas por los alimentos son la conducta humana (por ejemplo, la contaminación del medio ambiente por heces humanas, debido a la falta de letrinas, y el contacto entre seres humanos que favorece la propagación de parásitos intestinales, fundamentalmente protozoos, además de la falta de conocimiento y aplicación de las buenas prácticas de higiene por parte de los preparadores de alimentos), así como aspectos demográficos y el comercio internacional. (...)</p>	<p>los alimentos respecto de la conducta humana están también las deficientes prácticas higiénicas de los preparadores de alimentos, por lo que sugerimos agregar la frase propuesta.</p>
<p>7</p>	<p>El principal propósito de estas directrices es aportar pautas relativas a la prevención, la inactivación y la reducción hasta a un nivel aceptable de la presencia de parásitos transmitidos por los alimentos que suponen un riesgo para la salud pública. Las presentes directrices proporcionan asesoramiento de base científica a los gobiernos y a la industria alimentaria con el fin de proteger la salud de los consumidores del riesgo que representan los parásitos transmitidos por los alimentos y garantizar prácticas equitativas en el comercio de alimentos. Además, estas directrices ofrecen información de interés para los consumidores y otras partes interesadas.</p>	<p>Con el objetivo tener una redacción más clara, México sugiere agregar el texto "del riesgo que representan", ya que de otro modo pudiera interpretarse como los consumidores de parásitos.</p>
<p>12</p>	<p>Pescado y productos pesqueros:</p> <ul style="list-style-type: none"> • <i>Opisthorchiidae</i> sp. • <i>Paragonimus</i> spp. • <i>Anisakidae</i> • <i>Heterophyidae</i> sp. • <i>Dipyllobothriidae</i> spp. <p>Frutas y hortalizas frescas:</p> <ul style="list-style-type: none"> • <i>Taenia solium</i> • <i>Echinococcus granulosus</i> • <i>Echinococcus multilocularis</i> • <i>Cryptosporidium</i> spp. • <i>Entamoeba histolytica</i> • <i>Ascaris</i> spp. lumbricoides 	<p>Se sugiere utilizar la nomenclatura correcta (letra cursiva) y la abreviatura spp. o sp. sin letra cursiva:</p> <p><i>Opisthorchis</i> sp. <i>Heterophyidae</i> sp. <i>Dipyllobothriidae</i> spp.</p> <p>Para el caso <i>Ascaris</i> en Frutas y hortalizas se sugiere especificar solo al <i>Ascaris lumbricoides</i>, pues no se encontró suficiente información que respalde la relación de <i>Ascaris suum</i> con enfermedades en seres humanos transmitidas a través de los alimentos.</p>
<p>17</p>	<p>Quiste: Fase ambiental del ciclo de vida de algunos parásitos protozoarios, inclusive, Incluye los quistes de parásitos intestinales (p. ej., <i>Entamoeba histolytica</i>, <i>Giardia duodenalis</i>); también puede referirse a los quistes tisulares de <i>Toxoplasma gondii</i>, sarcoquistes de <i>Sarcocystis</i> spp. o a los quistes hidatídicos de <i>Echinococcus</i> spp.</p> <p>Huésped definitivo: El huésped en el ciclo de vida de un parásito en el que tiene lugar la reproducción sexual. Es aquel en el cual el parásito se reproduce sexualmente (parásito adulto de helmintos y fase sexuada de los protozoos Apicomplexa).</p> <p>Huésped intermedio: El huésped que alberga al parásito en fase larvaria. Es el que alberga y en donde se desarrolla alguna o todas la fases larvarias de helmintos o la reproducción asexuada de los protozoarios Apicomplexa.</p> <p>Ooquiste: La fase de infecciosa de desarrollo de los parásitos coccidianos coccidios producidos mediante reproducción sexual en el huésped definitivo.</p> <p>Larvas: Forma inmadura de cualquier parásito, antes de adquirir su aspecto maduro. Puede ser infecciosa o no. Fase de desarrollo intermedia entre el huevo y el adulto de los helmintos y otros animales. Puede ser infectante o no.</p>	<p>México propone las modificaciones con el objetivo de mejorar la redacción en algunos casos, y de complementar las definiciones en otros.</p>

	Taquizoíto: Fase <u>intracelular de reproducción asexual rápida</u> de motilidad dentro del ciclo de vida de los coccidios (p. ej., <i>Toxoplasma gondii</i>); <u>que se transforman en</u> se produce una multiplicación rápida en el huésped antes de transformarse en bradizoítos <u>de reproducción lenta</u> y formar quistes tisulares <u>en el huésped</u> .	
26	(...) primaria; así, los félicos son los huéspedes definitivos de <i>Toxoplasma gondii</i> y las heces de los gatos infectados contienen quistes que a su vez contaminan los campos y otras zonas de alimentación.	Se sugiere utilizar la nomenclatura correcta, utilizando letra cursiva para nombrar el parásito.
36 bis (nuevo)	3.4 LIMPIEZA, MANTENIMIENTO E HIGIENE DEL PERSONAL EN LA PRODUCCIÓN PRIMARIA 36 bis. La mayoría de las fases infectantes de los parásitos resisten a los desinfectantes comunes por lo que debe utilizarse el arrastre mecánico bajo el chorro de agua durante el lavado de manos, a fin de reducir el riesgo de contaminación parasitaria en los alimentos.	Consideramos que además de las prácticas recomendadas en los párrafos 35 y 36 de esta sección, es importante detallar la técnica de lavado de manos, que debe ser mediante el arrastre mecánico bajo el chorro de agua, por lo que sugerimos agregar el párrafo 36 bis.
46	Entre los parásitos importantes transmitidos por el pescado se incluyen Opisthorchiidae <i>Opisthorchis sp.</i> en peces de agua dulce, <i>Paragonimus spp.</i> , en crustáceos de agua dulce, <i>Anisakidae</i> , en peces de agua salada, crustáceos y cefalópodos, Heterophyidae <i>Heterophyes sp.</i> , en peces de agua dulce o de agua salobre, y Diphyllobothriidae <i>Diphyllobothrium spp.</i> , en peces de agua dulce y peces de agua salada.	Se sugiere sustituir el <i>Opisthorchiidae</i> por <i>Opisthorchis sp.</i> , ya que solo un género está involucrado en la contaminación parasitaria en pescado. Se sugiere sustituir <i>Heterophyidae</i> por <i>Heterophyes sp.</i> , ya que solo un género está involucrado en la contaminación parasitaria en pescado. Se sugiere sustituir <i>Diphyllobothriidae</i> por <i>Diphyllobothrium spp.</i> , ya que solo un género está involucrado en la contaminación parasitaria en pescado.
56	Los animales, inclusive los perros y gatos, pueden ser huéspedes de parásitos transmitidos por el consumo de pescado y deberían estar apartados de los estanques de acuicultura en la medida de lo posible , por ejemplo colocando vallas alrededor de los estanques. (...)	Sugerimos eliminar la frase “en la medida de lo posible” ya que consideramos que esta práctica debe ser implementada a fin de disminuir el riesgo y eliminar la presencia de animales domésticos ya que son portadores de parásitos.
71	(...) Los huevos y los quistes parasitarios pueden sobrevivir durante años en el entorno y pueden ser muy resistentes a los cambios ambientales; así, los huevos de <i>Ascaris spp.</i> pueden mantenerse viables en lodos residuales, digeridos anaeróbicamente.	Se sugiere utilizar la nomenclatura correcta, incluyendo la abreviatura spp.
86	Los métodos de elaboración como salazón, curado, marinado, escabechado, encurtido y ahumado a 40 °C, además de incorporar aditivos alimentarios que pueden resultar ser eficaces para el control de ciertos patógenos transmitidos por el consumo de alimentos, <u>pero</u> resultan generalmente insuficientes para el control de las fases infectantes de los parásitos. (...)	Proponemos las modificaciones con el objetivo de dar mayor claridad a éste párrafo.
88	La fruta y las hortalizas deberían <u>tallarse y</u> lavarse con agua corriente y limpia para reducir los parásitos, aunque habría que señalar que la mayoría de los huevos de parásitos, quistes y ooquistes se quedan adheridos y son difíciles de eliminar de las frutas y hortalizas, <u>por lo que la eliminación mecánica (tallado) debe ser fundamental</u> .	Es importante hacer énfasis en que la eliminación mecánica mediante el tallado es una de las prácticas que se deben recomendar durante el lavado de frutas y hortalizas, ya que es más efectiva que los desinfectantes recomendados.
95	Deben seguirse normas de higiene personal adecuadas como, por ejemplo, lavarse las manos para evitar la transmisión de parásitos por vía oro-fecal. Por ejemplo, los trabajadores infectados con la tenia T. <i>Taenia solium</i> pueden contagiar <u>transmitir</u> huevos que causen la grave enfermedad de la neurocisticercosis.	Proponemos las modificaciones con el objetivo de dar mayor claridad a éste párrafo.

NIGERIA

Nigeria supports adoption of the Draft Guidelines of General Principles of Food Hygiene to the Control of Foodborne Parasites at Step 5/8.

Rationale: The document is user-friendly as it provides clarity and focus.

PHILIPPINES

Specific Comments

The Philippines would like to propose revisions on the list of issues posed by the EWG for better understanding

1. SECTION 3.4 CLEANING, MAINTENANCE AND PERSONNEL HYGIENE AT PRIMARY PRODUCTION, PAGE 10, PARAGRAPH 36, 2ND SENTENCE

From	To
In order to minimize the opportunity for contamination of the production environment with parasitic stages from human faeces, installation and use of the on-farm sanitary facilities should be installed, e.g., functional latrines in the field, and an adequate means of hygienically washing and drying hands. Waste from sanitary facilities should be hygienically disposed.	In order to minimize the opportunity opportunity potential for contamination of the production environment with parasitic stages from human faeces, installation and use of the operational on-farm sanitary facilities should shall be installed readily accessible , (e.g., functional latrines in the field that do not leak into the primary production area , and an adequate means of hygienically washing and drying hands). Waste from sanitary facilities should be hygienically disposed.

Rationale: The Global Good Agricultural Practices recommend a minimum distance from the sanitary facilities to primary production area for ease in accessibility yet poses no potential risk of faecal contamination.

2. SECTION 3.5 MONITORING AND SURVEILLANCE AT PRIMARY PRODUCTION, PAGE 10, PARAGRAPH 37

From	To
Surveillance and monitoring of foodborne parasites in food animals and in species that are potential sources of parasites could be effective in developing risk management strategies. Monitoring and surveillance can be useful as tools to verify the effectiveness of parasite controls, should begin at primary production.	Surveillance and monitoring of foodborne pathogens in food animals and in species that are potential sources of parasites could be effective shall begin in primary production . In developing risk management strategies. Monitoring and surveillance can be useful tools to verify the effectiveness of parasite control should begin at primary production. Verification of effectiveness of parasite controls can validate risk management strategies developed.

Rationale: to simplify and render a straightforward statement.

3. SECTION 3, C. FISH AND FISHERY PRODUCTS, PAGE 11, PARAGRAPH 47

From	To
During the parasite hazard analysis, producers should consider how the food will be further processed, prepared and consumed in order to determine appropriate parasite controls. For example, fish that may contain foodborne parasites, but may not have gone through appropriate parasite control can be marketed as “ not suitable for raw consumption ” if the fish is cooked before consumption although allergies may need to be considered.	During the parasite hazard analysis, producers should consider how the food will be further processed, prepared and consumed in order to determine appropriate parasite controls. For example, fish that may contain foodborne parasites, but may not have gone through appropriate parasite control can be marketed as “ not suitable for raw consumption ” if the fish is to be cooked before consumption. although allergies Potential allergic reactions may need to shall be considered.

Rationale: Allergic reaction from ingesting fish/fishery product may also be due to parasite related hazards

4. SECTION 5.2.2.1 FREEZING, PAGE 14, PARAGRAPH 83, LAST SENTENCE

From	To
Freezing of meat cannot be recommended in areas where <i>T. britovi</i> is found in wild mammals.	Freezing of meat cannot be is not recommended in areas where <i>T. britovi</i> is found in wild mammals.

Rationale: *T. britovi* is highly resistant to freezing and is therefore not recommended instead of cannot be recommended.

5. SECTION 5.5 WATER, PAGE 14, PARAGRAPH 90

From	To
<p>Water used for washing fruits and vegetables during processing may need to be treated to reduce parasites. Some parasites are resistant to common water disinfection techniques. For example, some parasitic stages (e.g., <i>Cryptosporidium</i> oocysts) are resistant to common water disinfection techniques such as those utilizing chlorine. For these parasites, alternative validated methods may be used as a means of inactivating or removing parasites in water, especially those for direct human consumption, in contact with food or used as ingredient.</p>	<p>Water used for washing fruits and vegetables during processing may need to be treated to reduce parasites. Some parasites are resistant to common water disinfection techniques. For example, some parasitic stages (e.g., <i>Cryptosporidium</i> oocysts) are resistant to common water disinfection techniques such as those utilizing chlorine like chlorination. For these parasites, alternative validated methods may be used as a means of inactivating or removing parasites in water, especially those for direct human consumption, in contact with food or used as ingredient.</p>

Rationale: There may be a need to qualify the alternative validated methods to inactivate or remove parasites in water.

SENEGAL

Problème et justification: Le document ne constitue pas un document autonome et doit être considéré conjointement avec d'autres documents, par exemple Documents de l'OIE. Il ya des sections distinctes des divers produits qui rendent le document facile à utiliser. Même si il n'y a que 24 parasites d'origine alimentaire de haut rang qui ont été considérés par la FAO / OMS, il est prévu de donner aux États membres la possibilité de mettre en évidence d'autres parasites de problème de sécurité des aliments comme nouveau travail. Les produits spécifiques doivent aborder la question de la qualité de l'eau d'irrigation à la production primaire si nécessaire.

Position : Nous soutenons l'adoption du projet de directives des principes généraux d'hygiène alimentaire à la maîtrise des parasites d'origine alimentaire à l'étape 5/8.

Commentaire général: En raison de la pertinence de parasites dans l'eau, les directives de l'OMS sur l'eau potable doivent être référencées dans ce document. L'adoption d'une approche similaire sur l'annexe pour *Trichinella* et *C. bovis* a été utilisée, ce qui rend le document convivial car il offre clarté et précision. La question des décès causés par *Anisakis* allergénicité a également été bien traitée dans la section d'éducation des consommateurs pour la protection de la santé et la sécurité publique.

THAILAND**General comment**

We generally agree with the text appeared in CX/FH 15/47/6. We think that the Scope of the draft should be specifically focused on the food which will be affected by the risk of parasitic contamination.

Specific comment**2.1 Scope (paragraph 8)**

We would like to propose an amendment to paragraph 8 as follows:

These guidelines for the control of foodborne parasites are applicable to all food **associated with risk from parasites, particularly for meat and meat products, milk and milk products, fish and fishery products, and fresh fruits and vegetables**, except for water,...

Rationale: We are of the opinion that the scope in paragraphs 8 and 10 should be consistent. Also, the text should be focused on high risk commodities in accordance with the most important foodborne parasites and the associated food categories based on Table 2 of the FAO/WHO report.

2.3 Definitions (Paragraph 17)

We would like to propose a few minor amendments for the definitions as follows:

Larvae – immature form of any **helminthic** parasite, before the assumption of the mature shape. It can be infective or not.

Rationale: to give the emphasis on the immature form of helminths in comparison with the oocyst and tachyzoite.

Tachyzoite – motile ~~life cycle~~ stage of some coccidian parasites (e.g. *Toxoplasma gondii*); undergo rapid multiplication in the host before developing into bradyzoites and forming tissue cysts.

Rationale: 'life cycle' is an unnecessary modifier.

A. Meat

3.2 Hygienic Production of Food Sources (paragraph 24)

We would like to ask for the clarification on the reference to Chapter 6.4. (Biosecurity Procedures in Poultry Production) of the OIE Terrestrial Animal Health Code since poultry is not one of the associated commodities based on Table 2 of the FAO/WHO report. We suggest deleting this reference from paragraph 24 and keep the reference to OIE Terrestrial Animal Health Code only for Chapter 6.3. The Control of Hazards of Animal Health and Public Health Importance in Animal Feed.

3.3 Handling, storage and transport (paragraph 34)

We would like to ask for clarification on the references to Chapter 7.2. (Transport of animals by sea), 7.3. (Transport of animals by land), 7.4. (Transport of animals by air). The main focus of all three OIE Chapters is about animal welfare. However, we are of the opinion that the requirement in this Section 3.3 Handling, Storage and Transport should be focused on hygienic practice.

B. Milk and milk products

3.1 Environmental hygiene (paragraph 42)

We would like to propose an amendment to paragraph 42 as follows:

Domestic, feral, and wild cats should be ~~excluded~~ **prevented** from barns and food production, handling and storage areas used for dairy herds (e.g., cows, goats, sheep and camels).

Rationale: Not only domestic but feral and wild cats are also important hosts for *Toxoplasma gondii*.

C. Fish and fishery products (paragraph 47)

We would like to propose an amendment to paragraph 47 as follows:

"...For example, fish that may contain foodborne parasites, but may not have gone through appropriate parasite control can be marketed as **product to be cooked before consumption**. ~~"not suitable for raw consumption"~~ if the fish is cooked before consumption although allergies may need to be considered.

Rationale: Normally, fish is not marketed with label of 'not suitable for raw consumption'. Also, the allergy issue is already covered by Section 9.4 Consumer education (paragraph 99).

3.2 Hygienic production of food sources (paragraph 56)

We would like to propose an amendment to paragraph 56 as follows:

Animals, including dogs and cats, may be fishborne parasite hosts and should be excluded from aquaculture ponds to the extent possible, for example by placing fences around ponds **or farm**.

Rationale: to provide more example and flexibility to the users.

5.2.2.5 Washing (paragraph 88)

We would like to ask for clarification on the word 'running' in 'Fruit and vegetables should be washed with running, clean water to reduce parasites...' since in practice, the food business operator might use different techniques to create flowing/movement of water to remove the oocysts from the produce. We are not too sure whether the word 'running' denotes appropriate characteristics of the washing process.

Section 7 Establishment: Personal hygiene (paragraph 95)

We would like to propose an amendment to paragraph 95 as follows:

Proper personal hygiene such as hand-washing practices should be used to prevent faecal-oral transmission of parasites. For example, workers infected with the tapeworm *T. solium* **with improper hand-washing** can spread eggs that cause the severe disease neurocysticercosis.

Rationale: Since the proper hand-washing can prevent the faecal-oral transmission of parasites, we suggest specifying of improper hand-washing worker to the following sentence.

IDF

The comments of the IDF on the document are, at this stage, confined to issues relating to cattle and dairy:

- The definitions should be the same as in the report of FAO/WHO on global ranking of foodborne parasites

- We are concerned at the possible unjustified interventions recommended for cattle farming. Toxoplasmosis is not recognised in cattle and should not be a factor in foodborne transmission. This is supported by two references:

ACMSF:

- Most studies of cattle have failed to detect viable tissue cysts.
- There have been no published cases of isolation of the parasite from naturally infected cattle in Europe, US or Australia.
- There is no evidence to suggest that toxoplasma is excreted in the milk of naturally infected cattle.

EFSA:

- The parasite has been detected very rarely in tissues of an adult cow, and in aborted fetuses. For example of 2094 samples of retail beef meat in the US, no Toxoplasma infection was detected.

This must be balanced with the information on 'control' with regard to toxoplasma in the tables. We have included additional information on toxoplasma in the tables for information.

While the issues surrounding Toxoplasma have been toned down to some extent, there is still quite a focus on it in the dairy area considering the comments made by IDF. Milk is still mentioned as being associated with outbreaks (in section 40) and section 42 is still a bit unrealistic. Considering the IDF comments, the emphasis on Toxoplasma is still too much.

- It is not feasible to exclude cats from grazing areas. However, their access to production and handling areas hay, silage areas should be controlled.

Suggested text:

42. Cats should be excluded, **as far as reasonably practical**, from barns and food production, handling and storage areas used for dairy herds (e.g., cows, goats, sheep and camels). Dairy herds should not **be limited as far as reasonably practical**, allowed to grazing areas where Felidae are commonly found since cats are the only definitive hosts for *Toxoplasma gondii* and faeces from recently infected cats may contain environmentally resistant oocysts that contaminate fields and other feeding areas.

- *Toxoplasma gondii* is not necessarily a typical milk-transmitted foodborne parasite.

Suggested text:

Potentially milk-transmitted foodborne parasites include *Cryptosporidium* spp. and *Toxoplasma gondii*. Unpasteurized milk has been associated with ~~outbreaks~~ **human cases** of cryptosporidiosis and toxoplasmosis. Contamination of unpasteurized milk with *Cryptosporidium* may result from unsanitary milking conditions, such as when the udders are not properly cleaned. **Unpasteurized milk has been associated with outbreaks of cryptosporidiosis (e.g. Australia and the United Kingdom). Human cases** ~~Outbreaks of toxoplasmosis have~~ **only** been **linked directly** ~~associated with the consumption of~~ to unpasteurized goat's milk consumption and camel milk **although risk factors studies have suggested an association with drinking unpasteurized milk in several other countries (e.g. Poland, USA, Mexico)**. Tachyzoites of *Toxoplasma* in recently infected animals may be excreted in the milk, **potentially** resulting in milk-borne infection. ~~Unpasteurized milk has been associated with outbreaks of cryptosporidiosis in Australia and the United Kingdom.~~

Dubey, J.P., Jones, J.L. Comments on "detection of toxoplasma gondii in raw caprine, ovine, buffalo, bovine, and camel milk using cell cultivation, cat bioassay, capture ELISA, and PCR methods in Iran" (2014) *Foodborne Pathogens and Disease*, 11 (6), pp. 500-501.

Boughattas, S. Commentary on: "Detection of Toxoplasma gondii in raw caprine, ovine, buffalo, bovine, and camel milk using cell cultivation, cat bioassay, capture ELISA, and PCR methods in Iran" (2015) *Frontiers in Microbiology*, 6 (MAR), art.no.215.