

codex alimentarius commission



FOOD AND AGRICULTURE
ORGANIZATION
OF THE UNITED NATIONS

WORLD
HEALTH
ORGANIZATION



JOINT OFFICE: Viale delle Terme di Caracalla 00100 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

Agenda Item 4

**CX/FH 04/4
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON FOOD HYGIENE

**THIRTY-SIXTH SESSION
Washington, DC, USA, March 29 – April 3, 2004**

COMMENTS ON THE

PROPOSED DRAFT CODE OF HYGIENIC PRACTICE FOR MILK AND MILK PRODUCTS

Submitted by

Australia, Brazil, Canada, Egypt, Mexico, New Zealand, Switzerland, Uruguay and International Dairy Federation

GENERAL COMMENTS

AUSTRALIA

Australia wishes to congratulate the drafting group on this document. Australia supports the current version of the Codex Draft Code of Hygienic Practice for Milk and Milk Products as an acceptable compromise to cover all member countries' requirements and still provides a workable framework for the safe production of milk and milk products.

Australia supports the progression to Step 8, providing some minor issues outlined below are considered.

BRAZIL

Brazil congratulates the Drafting Group for the advances obtained and the efforts to grant an objective approach to the document.

CANADA

Canada would like to thank the United States and members of the Drafting Group for the progress made in the development of the revised document. We are pleased to offer two types of comments, those of an editorial nature and those regarding the issue of text placed in square brackets.

NEW ZEALAND

New Zealand believes the drafting group and the committee have made excellent progress on this code, and we are generally very satisfied with it. We have a few additional comments below.

URUGUAY

It is our pleasure to notify you that after examining document ALINORM 03/13 A, regarding the Proposed Draft Code of Hygienic Practice for Milk and Milk Products, it is the opinion of Uruguay that there are no objections to the document's approval

INTRODUCTION**EGYPT**

Second paragraph, first sentence, replace the first sentence of the second paragraph "All foods have no exception" with "All foods, especially milk and milk products have the potentiality to cause food borne illness."

Second paragraph, sixth sentence, Egypt finds that the contaminants can include other sources of contamination. Therefore, it is proposed to amend the sixth sentence of the second paragraph as follows:

"Potential also exists for the contamination of milk with the residues of veterinary drugs, pesticides, aflatoxins and the maximum limits of heavy metals and radio nuclides".

Second paragraph (towards end of paragraph), fourth sentence from the end of the paragraph, add the words "and the HACCP" at the end of the following sentence:

"This document is formatted in accordance with the Recommended International Code of Practice – General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 3, 1999."

SWITZERLAND

Second paragraph, 6th sentence: "Therefore implementing the proper hygienic control of milk and milk products throughout the food chain, **without impairing the rich and convenient source of physiological nutrients**, is essential to ensure the safety and suitability of these foods for their intended use.

Hygienic control measures should be guided in manner to conserve the physiological nutrients as far as possible. Milk and milk products should be treated in way to achieve the hygienic goal but "over-processing" should be avoided.

2.1 Scope**EGYPT**

First sentence, Egypt suggests to insert (,) between the words "production processing" in the first line to be as follows: "production, processing"

2.3 OVERARCHING PRINCIPLES APPLYING TO THE PRODUCTION, PROCESSING AND HANDLING OF ALL MILK AND MILK PRODUCTS

SWITZERLAND

Fourth paragraph, last sentence

The Code should only be used within the context of an understanding that there is a continuum of control **measures** that are applied from production to consumption.

2.4 Relative roles of milk producers, manufacturers, distributors and competent authorities

BRAZIL

In the title, Brazil proposes the introduction of the terms "retailers", "transporters" and "consumers", resulting in the following wording: "Relative Roles of Milk Producers, Manufacturers, Distributors, Retailers, Transporters, Consumers, and Competent Authorities".

In the second paragraph, first sentence, we suggest the introduction of "retailers", resulting in the following wording: "... with through communication and interaction between milk producer, the manufacturer, the distributor and the retailer."

In the third paragraph, third bullet, we suggest the introduction of "retailers", resulting in the following wording: "Distributors, transporters and retailers should assure that milk and milk products under their control are handled and stored properly and according to the manufacturer's instructions."

The justification to the inclusion of this term relates to the explanatory note, presented in the item 2.3, which states that: "The Code should only be used within the context of an understanding that there is a continuum of controls that are applied from production to consumption". Therefore, it is important to emphasize the role performed by retailers (by retailers, Brazil means "*person who sales milk and milk products in small quantities to the consumers*"). In order to assure the clear distinction between the terms "retailers" and "distributors", we suggest the inclusion of the latter definition, as well as the definition of "distributor" (*person who distributes milk and milk products from manufacturer to retailers*), in the item 2.5.

MEXICO

Mexico proposes modifying the heading of **Section 2.4** to "**Relative Roles of Milk Producers, Manufacturers, Distributors, Competent Authorities and the Consumer,**" due to the fact that throughout the document, and particularly in the fourth bullet of this section, there is a reference to the importance of how milk should be handled by the consumer.

2.5 DEFINITIONS

EGYPT

Egypt recommends to add the definition of "Hazard" to the list of definitions

Food Safety Objective

AUSTRALIA

This still needs to be defined and the definition should be consistent with that agreed in the draft Principles and Guidelines for the Conduct of Microbiological Risk Management.

While FSOs address microbiological hazards, there is a need for discussion about the feasibility of extending the concept of FSOs to include chemical and physical contaminants.

First sentence, The document refers to the term “the appropriate level of health protection”, but refers to “appropriate level of public health protection”, section 2.3 and elsewhere. The use of the term should be consistent throughout the document. Presumably, the term of public health protection is appropriate.

CANADA

The expression Food Safety Objectives (FSO) is still under discussion at the Codex Committee on Food Hygiene (CCFH), however, it has been defined by ICMSF in Volume 7, Microorganisms in Foods.

The definition of FSO is as follows:

FSO: as statement of the maximum frequency and/or concentration of a microbiological hazard in a food at the time of consumption that provides the appropriate level of protection (ALOP). In addition, **ALOP** is defined under the WTO/SPS agreement as being "the level of protection deemed appropriate by the Member (country) establishing a sanitary or phytosanitary measure to protect human, animal or plant life or health within its territory."

Therefore, we would suggest that in the interest of moving the Code forward that a reference be made to the ICMSF book and that that definition be used through out the document until such time as CCFH comes up with another definition.

MEXICO

Mexico suggests eliminating the term “microbiological”, currently found in square brackets, so that the Food Safety Objective can be a broad concept and applicable to any other type of risk.

Raw milk**SWITZERLAND**

For Switzerland the definition of raw milk is o.k. we just want to point out that a cow with 40°C has normally fever.

Shelf life**AUSTRALIA**

Perhaps we could consider adding, “As determined by a manufacturer” to the definition to re-enforce the principle in section 5.2.1.3.

The definition would then look as follows: SL – The period, as determined by a manufacturer, during which product (delete plural) maintains its microbiological safety and suitability at a specified storage temperature and, where appropriate, specific storage conditions.

EGYPT

It is proposed to add the following wording “and remains acceptable in flavour after packaging” after the word “suitability” for clarification. Egypt suggests the insertion of “and handling conditions” after “storage conditions” because handling conditions such as distribution and transport conditions affect the shelf life of the products.

As regards the establishment of the product shelf life in Egypt, it is the responsibility of the manufacturer, but under the supervision of the competent authority i.e. Egyptian Organization for Standardization and Quality Control (Egypt), in which the manufacturers are participants in its committees.

Validation**CANADA**

(same applies to 5.1.2 and Appendix III, 5.1.3, 5.2.1.2, Appendix A, Appendix B)

The section 5.1.2. Control Measure Selection, Validation , is the first one referring to *Guidelines for the Validation of Food Hygiene Control Measures* (CCFH document in preparation).

The word **Validation** is defined under the Recommended Code of Practice - General Principles of Food Hygiene CAC/RCP 1-1969, Rev. 3-1997, Amd. (1999), Annex, Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its Application.

The definition is as follows:

Validation: obtaining evidence that the elements of the HACCP plan are effective. In addition, the **HACCP Plan is defined as: a document prepared in accordance with the principles of HACCP to ensure** control of hazards which are significant for food safety in the segment of the food chain under consideration.

Even though we agree that the document being drafted by the USA on Validation will provide additional clarification on the use of the terms validation and verification, we believe that, in the interest of making progress with this Code, that the meaning of the word validation be used in the context of CCGP. When CCFH completes the document on validation, an addendum could be provided to indicate that the document on validation has become available and should be used in conjunction with other Codes drafted by CCFH (it would apply to many codes not only the one on Milk and Milk Products).

3 PRIMARY PRODUCTION**BRAZIL**

Last Paragraph, first sentence, Considering the importance to assure safety and suitability of milk and milk products, it is proposed to include, in the first sentence, last paragraph the following wording: “*The microbial load of milk should be as low as achievable, within the established Quality Control Norms of Maximum permissible levels according the official authority*”.

NEW ZEALAND

6th Paragraph, the first sentence should be a separate paragraph, in bold font, because it is a principle.

In the commentary following the principle (towards end of the paragraph), the word "effectiveness" should be replaced by "stringency". This avoids a conflict with the 4th principle in section 2.3, which requires control measures to be effective.

3.1 ENVIRONMENTAL HYGIENE

3.2.3.1 Feeding

BRAZIL

First Paragraph, first sentence, Brazil recommends the suppression of sentence "*With consideration given to the end use of the milk*", in order to retain the general approach characteristic to the principles presented in the document. When the inclusion of specific or exceptional situations is necessary, we suggest its insertion in the explanatory note or in Annex I.

We propose to remove "*microbiological or chemical*", in the first paragraph, considering the existing definition of "Contaminant", from the *Recommended International Code of Practice – General Principles of Food Hygiene*, CAC/RPC 1-1969, Ver. 3, 1997, and we also consider that the sentence "...microbiological or chemical contaminants into milk..." does not include biological hazards, as prions.

3.3 Handling, Storage and Transport of Milk

BRAZIL

In the first paragraph, Brazil suggests the following wording: "*Handling, storage and transport of milk should be conducted in a manner that will not compromise the safety and suitability of milk and milk products*". In order to maintain a harmonized characteristic to the principles presented in the document.

3.3.4 Collection, Transport and Delivery Procedures and Equipment

MEXICO

Second paragraph, first sentence, we suggest eliminating the text "without undue delay".

3.4 DOCUMENTATION AND RECORD KEEPING

BRAZIL

Brazil suggests the inclusion of a new item 3.4 to address the subject "*Cleaning, Maintenance and Personnel Hygiene at Primary Production*", while keeping the format of the document in accordance with the *Recommended International Code of Practice – General Principles of Food Hygiene*, CAC/RPC 1-1969, Ver. 3, 1997. We propose for the first paragraph the following wording: "*Milk handlers hygiene should be maintained in a manner that avoid contamination of milk and milk products.*"

Once this suggestion is accepted, the item "*Documentation and record keeping*" would be renumbered as 3.5.

3 ESTABLISHMENT: DESIGN AND FACILITIES

5.1 CONTROL OF FOOD HAZARDS

NEW ZEALAND

In the 3rd paragraph, a comma should follow the word "*appropriate*" to make the meaning clear.

5.1.1 Hazard Identification

NEW ZEALAND

4th Paragraph

It is not clear what is meant by the "severity" of a hazard. It would be preferable to reword as, "determine the severity of its adverse health effects and ..." This aligns with the HACCP Annex of the General Principles. Consequential changes would need to be made to section 5.1.2 and to sections 5.1.1 and 5.1.2 of Annex II.

5.1.2 Control Measure Selection

CANADA

(same applies to Appendix III, 5.1.3, 5.2.1.2, Appendix A, Appendix B)

This section is the first one referring to *Guidelines for the Validation of Food Hygiene Control Measures* (CCFH document in preparation). (See comments under the Section 2.5 Definitions)

NEW ZEALAND

Second paragraph, first sentence, New Zealand suggests consequential changes to "*identified as severe and/or likely to occur*" as a result of changes mentioned above, to "*identified at unacceptable levels*". The commentary also needs to be changed as a consequential to accepting the above suggestions.

Control measures and control measure combinations should be selected that will control the hazards identified as severe and/or likely to occur.

5.2.5 Physical and chemical contamination

MEXICO

First paragraph, end of the sentence, we suggest eliminating the text "and foreign substances", since these are included in the chemical hazards.

5.5 WATER

AUSTRALIA

First paragraph, first sentence, there is a provision for potable water to be used in manufacturing premises. This Code may be better served by focusing on food safety outcomes achieved through the process, rather than focusing on the microbiological specification of the input (water). The industry would benefit from the flexibility, which will need to consider local conditions and variations in water supply available at any specific time, providing the water doesn't affect the safety of the product. One approach would be to use the term 'suitable' instead of the word 'potable'.

CANADA

The fourth paragraph appears to be more of a guideline than a narrative and we suggest that it be moved to Annex II as the following statement:

"Filter systems should be monitored, cleaned and replaced at an adequate frequency."

9.3 LABELLING

BRAZIL

Brazil suggests the inclusion of a new paragraph in this item to address the subject storage instructions to the milk and milks products after opened, in order to assure safety and suitability until end's consumption by consumers.

ANNEX I - GUIDELINES FOR THE PRIMARY PRODUCTION OF MILK

3.2.1.2 Milk areas and related facilities

MEXICO

In the last bullet in point 3.2.1.2, the provision should be broadened to say: “the effective protection against harmful fauna”.

3.2.1 Animal health

NEW ZEALAND

We suggest “*sanitary authorities*” be changed to “*competent authority*” and consequential changes be made throughout the document. Similarly “*national authority*” and “*authority having jurisdiction*” are mentioned elsewhere and should be changed to “*competent authority*”. This aligns with recent Codex work and produces a consistent approach throughout the document.

3.2.3.1 Feeding

CANADA

First paragraph, reference is made to the Proposed Draft Code of Practice on Good Animal Feeding (in preparation - currently contained in CL 2000/30-AF). Since this document is not completed yet, but the code on Milk and Milk Products refers to it, one option would be to only make reference to it by way of a footnote indicating that it is still a draft.

MEXICO

Second paragraph, first sentence, we propose eliminating the term “fermented” every time that hygienic practices must be applied to feed in general and not only to fermented feed.

3.2.3.2 Pest

MEXICO

We propose that the title for the point 3.2.3.2 should be changed to: “3.2.3.2 Pest Control.”

On the other hand, we propose including an additional paragraph, to read as follows: “Empty containers with residues from toxic substances or pesticides should be disposed of properly”.

3.2.3.3 Veterinary Drugs

CANADA

First paragraph, reference is made to the Proposed Draft Guidelines on the Control of Veterinary Drug Residues in Milk and Milk Products (under development). Again, one option would be to only make reference to this document by way of a footnote indicating that it is still a draft.

AUSTRALIA

4th Para – The phrase ‘Milk from animals...’. Australia suggests deletion of ‘that can be transferred to milk’ and replace with the phrase ‘for which a milk withdrawal period applies...’.

The suggested text (1) links with concept in previous para that a competent authority authorised the products and determined a WHP as necessary (2) determining whether vet drugs can be transferred to milk (current wording) falls within the purview of a competent authority, not a milk producers as per the scope of 3.2.3.3.

3.2.4 Hygienic milking**AUSTRALIA**

Fourth paragraph, sentence starting “Animals showing clinical symptoms...”

Suggest addition to the end of this sentence “and should not contaminate milk from healthy animals”. (this comment was submitted previously).

NEW ZEALAND

6th Paragraph, In the 4th line, the word should be "records" (plural).

3.2.4.2 Milking Equipment Design

First paragraph, we recommend eliminating the term “significant” because the equipment must not be a source of contamination of milk.

3.2.4.4 Health and personal hygiene of Milking Personnel**3.3 Handling, storage and transport of milk****MEXICO**

Introductory paragraph: This text mostly makes reference to time and temperature control. This provision is again covered in **Sections 3.3.3** (page 78 [Spanish version] / 83 [English version]) **and 3.3.4.3** (page 80/85). At a certain point it becomes somewhat confusing so we suggest creating a section on time and temperature control during handling, storage and transport of milk in order to unify the paragraphs to avoid confusion and contradictions regarding the concepts.

3.3.2 Milk Storage equipment**Additional Provisions for the Production of Milk Used for Raw Milk Products****SWITZERLAND**

Milk tanks and cans can be used only to store milk and ~~whey~~ **milk products**.

It should be possible to store and transport all kind of milk products like whey, cream etc. provided that the cans are cleaned adequately prior to the next use as transport tool for raw milk.

3.3.3 Premises for, and storage of, milk and milking-related equipment

Additional Provisions for the Production of Milk Used for Raw Milk Products

NEW ZEALAND

It is the manufacturer that should approve use of milk held above the temperatures (although the authority having jurisdiction should still approve the temperature), as the manufacturer is responsible for the safety of the product and will know the intended use of the product.

3.3.4.3 Transport Time and Temperature

Special Provisions for the Production of Milk Used for Raw Milk Products

AUSTRALIA

First paragraph, seems to be an inconsistency between statement here (not exceed 8 degrees) with what's under 3.3.3, "additional provisions for raw milk products", where it states "equal to or greater than 6 degrees C".

SWITZERLAND

Special Additional provisions for the production of milk used for raw milk products.

To be in accordance with the other subtitles.

ANNEX II - GUIDELINES FOR THE MANAGEMENT OF CONTROL MEASURES DURING AND AFTER PROCESSING

DEFINITIONS

Microbiocidal and Microbiostatic

MEXICO

We propose modifying the definitions for "Microbiocidal treatments" and "Microbiostatic treatments" as follows:

"Microbiocidal treatments are control measures that eliminate the microorganisms present in food."

"Microbiostatic treatments are control measures that prevent the growth and outgrowth of microorganisms present in food."

Pasteurization

NEW ZEALAND

It is not appropriate to reference a verification process (phosphatase test) and we suggest the last sentence be deleted. Other definitions do not include a verification process. Including a verification process also unnecessarily restricts the use of alternative methods.

MEXICO

The definition for “pasteurization” will be compared against the current definition found in other working papers within the present group to make it consistent.

UHT:**SWITZERLAND**

Is of the opinion that the UHT treatment and the sterilization process should be defined separately and not mixed up. For us UHT und sterilization of milk are two different things. The UHT treatment kills the viable microorganisms and eliminates spores. The sterilization inhibits microbiological and enzymatic spoilage.

5.1.1 Hazard Identification**NEW ZEALAND**

Similar problems arise in this section as mentioned above in reference to Section 5.1 in the body of the Code. Consequential changes would address this section if the suggestions for section 5.1 within the body of the Code were accepted.

We suggest rewording the last sentence of the fourth paragraph, as follows: “*Consultation with the competent authority in relation to the herds, is appropriate.*”

5.1.2 Control Measure Selection**Combination of microbiological control measures****AUSTRALIA**

First paragraph, last sentence, suggest removal of the reference to “dairy industry”, by saying:

“Such suitable combinations are sometimes referred to by the food industry as hurdle technology.”

Further below (Second paragraph), “The combination of control measures has two main objective: (during processing and after processing),” appears to contradict the statement below (Third paragraph, first sentence):

“It may be necessary to ensure that growth of micro-organisms is kept to a minimum prior to processing, in between different processing steps, and after processing.” (this implies that the combination of control measures has three objectives).

Last paragraph, IDF provided the following comment in 2002:

The sentence starting with “Attention should also be paid...” could be improved to ensure that the attention is focused on the potential consequences of the deviations granted. We suggest the following rephrasing of the sentence:

“Attention should also be paid to the assessment of probabilities for any additional zoonotic hazards and/or any increased levels of microbiological hazards that may likely result from the deviations granted and to the sub-sequential application of microbiological control measures with such performance that they effectively control them ~~eliminate any additional risks associated with the transfer of additional zoonotic hazards to the milk as well as any likelihood of higher levels of microbiological hazards.~~”

NEW ZEALAND

New Zealand suggests a partial rewording of the italicised note to read “...*the concepts also can be applied to the control of chemical and physical hazards.*” This improves readability of the sentence.

We also suggest rewording the beginning the first paragraph to read “*Once unacceptable hazards have been identified, the next step...*” This is a consequential to changes in 5.1.1 as suggested above.

5.1.3 Establishment of Process Criteria (Critical Limit Determination)

MEXICO

Second paragraph, first sentence, and 5.2.1.2, we propose eliminating the square brackets surrounding the terms “validated” and “validation.”

5.2.1.2 Distribution of finished products

MEXICO

We recommend including the following bulleted text:

- In the store display cases by the people in charge or those responsible for their care.

5.2.3.1 Milk

MEXICO

Last paragraph, last sentence, the term “*Salmonella*” should be written in italics, and this should be done every time it represents the scientific name of a group of microorganisms.

APPENDIX A: MICROBIOSTATIC CONTROL MEASURES

Lactoperoxidase system: AUSTRALIA

Suggest adding the following sentence at the end: “The Guidelines were not intended for products entering international trade.” (see ALINORM 03/11, page 2, para 13.)

APPENDIX B: MICROBIOCIDAL CONTROL MEASURES

Irradiation: CANADA

Since this table only provides examples, there is no need to keep irradiation in

the list, therefore eliminating one more square bracket.

IDF

The text addressing the control measure “irradiation” is currently placed in square brackets.

IDF considers it advisable to retain the reference, mainly because it is a well-established control measures that is applied in some countries and which has been addressed by other Codex Committees, notably the CCFAC.

It should be noted that the 26th Session of the Codex Alimentarius Commission adopted a revised General Standard for Irradiated Foods and a Recommended (revised) International Code of Practice for the Radiation Processing of Food. The proper (correct) references to these should replace the current references

B.1.2 Process management

EGYPT

Process criteria

Egypt comments on the second paragraph as follows:

Processing at temperature above 72° c is validated now and there is no need for any current revision by experimental techniques. Therefore, Egypt suggests the inclusion of the following schedule of temperature-time combination that are considered equivalent to pasteurization.

Temperature	Time	Temperature	Time
89° c	1s	96° c	0.05 s
90° c	0.5 s	100° c	0.01 s
94° c	0.1 s		

As regards the changes in the composition of the product as in cream, Egypt would like to inform the Committee on Food Hygiene that the minimum temperature-time conditions for pasteurization of cream were approved at the 64th annual meeting of IDF in 1980. Examples of these temperature-time combination are as follows:

- The fat content of cream is 18%, to be pasteurized at 75° c for 15 seconds.
- The fat content of cream is 35% or more, to be pasteurized at 80° c for 15 seconds.

B.2.2 Process management

Process performance

CANADA

We believe the statement in square brackets is correct even though a processor could present data to justify the use of less than a 12 log reduction. However, the principle under commercial sterility stays the same, i.e., commercially sterile products should achieve a 12 log reduction of *C. botulinum*. The square brackets should be deleted.

SWITZERLAND

The 12 log reduction of *C. botulinum* is used in the canning industry. For sterilized milk it might be possible to apply the 12-D-concept but not for UHT milk. For the UHT treatment the demand for a 12 log reduction has to be deleted! For us a UHT treatment is not as intense as a sterilization.

IDF

IDF recommends the deletion of the reference to the 12 log reduction, currently put in square brackets.

The following rationale for the suggestion is brought forward in support of the recommendation:

- The occurrence of *Clostridium botulinum* in milk is extremely rare and/or extremely insignificant (one spore per litre of raw milk at maximum). Moreover, as *Clostridium botulinum* is an obligate anaerobe, multiplication and therefore toxin production in the milk is also practically excluded.
- For commercially sterilized milk no cases have been reported so far for which *Clostridium botulinum* would have had any relevance. Earlier reported cases occurring in Great Britain and Italy did not concern commercially sterilized milk, but composite products for which completely different conditions applied.
- An experimental risk assessment to support this performance criterion has never been carried out. The "botulinum cook" encompassing the concept of the "12 log reduction for *Clostridium botulinum*" originates from Esty and Meyer (belonging to the former National Canners Association, now National

Food Processors Association, USA) in 1920; they put 10^{12} spores of *Clostridium botulinum* per vial, and found the set of time-temperature heating conditions such that no surviving spores were found in the vials. Thus the probability of finding one surviving spore in a can containing initially one spore and submitting it to such heating was established to be 1 in 10^{12} .

- In any case, it would be practically impossible to validate compliance with this criterion because it will be virtually impossible to produce suspensions of spores of *Clostridium botulinum* of the milk in the necessary density.

From a food safety point of view and in light of the current heating practices in the production of commercially sterilized milk, it is considered irrelevant whether the 12 log reduction is maintained or not.

EDITORIAL COMMENTS (should be considered if the Code progresses to Step 8):

AUSTRALIA

Page 71, section 5.2.3.1 Incoming milk, first sentence, incorrect use of singular “criterion” and plural “criteria”.

Suggest: “Manufacturers should establish incoming milk criteria that take into account ...” or “Manufacturers should establish incoming milk criterion that takes into account...”

Page 71, section 5.2.3.2 Microbiological criteria, full stop after the 1st sentence.

Page 71, section 5.2.4. Microbiological cross contamination, 2nd para, suggest “...their actions could not contaminate milk. (ie “could not” instead of “couldn’t”

Page 72, section 5.2.5. Physical and chemical contamination, 3rd para, “... of allergenic components and/or ingredients that may be present...” (is add “be”)

Page 72, section 5.5. Water, 3rd para, 2nd sentence, remove one full stop at the end

Page 77, Special Provisions for the Production of Milk on Small Holder Dairy Farms, 1st para:

“...Generally used, milk is not chilled by the producer and/or milk is transported in cans.”(ie change “at the producer’s level” to “by the producer”)

Page 78, section 3.2.1.1, full stop after the 5th para

Page 82, section 3.2.4.4., last sentence of the 1st para, “...be carried out if clinically or...”

Page 83, section 3.3. 2nd sentence, “...for time/temperature control on the farm should be clearly ...” (ie “on the farm” instead of “at farm level”)

Page 84, section 3.3.3, 4th para, improve the sentence starting “Storage temperatures and times...” as follows:... “Storage temperatures and times should be such that any detrimental effect on the safety and suitability of milk is minimized.” (current wording a bit confusing)

Page 85, section 3.3.4.1, 3rd para, suggest: “Collection and chilling centers, if employed, should be designed and operated in a manner that minimizes or prevents the contamination of milk.” (ie delete “such”)

Page 85, section 3.3.4.1., 10th para, “Should driver’s clothing...” (ie “driver’s” instead of “driver”)

Pages 88 and 89, Annex II, numbering of first four sections

Page 88, Scope, last line, delete one “provided” as follows: “...control measures, provided that the general guidance in this Annex is followed.”

Page 89, definition of Pasteurisation, remove “any” from the definition. Suggest the following:

Pasteurisation is a microbiocidal heat treatment aimed at reducing the number of harmful micro-organisms in milk...”

Page 90, section 5.1. Control of food hazards, sentence starting with “Individual measures should be selected ...” ...suggest the following modification:

“Individual measures should be selected and applied in such combination as to achieve a sufficient performance that results in end products with acceptable levels of hazards.”

Page 91, section 5.1.1., full stop at the end of sentence “Hazard identification should take into consideration ...

Page 91, move title 5.1.2. Control Measure Selection

Page 93, move title 5.1.3. Establishment of Process Criteria

Page 95, section 5.2.3.1 Milk, 3rd para, remove one hyphen from “Any-non-compliance” to “Any non-compliance”

Page 102, 2nd para, change “0,22” to “0.22”

Page 104, three times on this page “a official” should be “an official”.

CANADA

3.0 Primary Production, Use of this section, 2nd paragraph, 3rd line

...production of milk intended for the manufacture of raw milk products

5.1.1 Hazard identification, after 2nd paragraph, delete .;

5.2.4, 2nd paragraph, ...to ensure that their actions could not contaminate milk.

5.5 Water, end of 3rd paragraph, ...on the filter. (Delete extra period)

Appendix III, 3.2.4.4, Health and personal hygiene of Milk Personnel, 4th line,

...be carried out if clinically (add one space)

Appendix III, 3.3.3, 2nd bullet point, ...a sufficient supply of water of a suitable quality ~~øf~~ for use (delete of)

Additional provisions...

This title has the wrong font size

5.1 Control of food hazards

The words "preventative" (7th line, 1st paragraph) and "preventive" (5th line, 2nd paragraph) are used but preventive is used more often later in the text. It may be better to use only preventive.

5.1.2

The title should be moved to the next line

2nd paragraph, 3rd line, ...are further described in Appendices (not Appendixes) A and B...

5.1.3

The title should be moved to the next line

5.2.1.3, last paragraph, ..taken into account by applying (delete an)

5.2.3, there is no 5.2.2

5.2.3.1 Milk

This title has the wrong font size

Appendix A, Water Activity Control

The following sentence should be reworded:

The minimum a_w value for preventing growth depends on the pathogen, ~~but lies typically between 0.93 and 0.96.~~
Water....

Reference to the range of a_w values is misleading since many pathogens may be able to grow below those values
e.g. *Listeria monocytogenes*

Appendix B

Bactofugation

It looks like the wrong font size is used.

B.2.2, Process criteria, 1st paragraph and 1st paragraph under UHT treatment

Part of a sentence needs to be reworded since this expression is used 3 times:...thermal process should be established in consultation with officially recognized thermal processing authority (delete: with a official or).