



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON FOOD HYGIENE
Forty-eighth Session**

Los Angeles, California, United States of America, 7 - 11 November 2016

**Comments on the
PROPOSED DRAFT REVISION OF
THE CODE OF HYGIENIC PRACTICE FOR FRESH FRUITS AND VEGETABLES (CAC/RCP 53-2003)**

**Comments Submitted by:
Argentina, Canada, Colombia, El Salvador, Iran, Mexico, New Zealand, Paraguay, Philippines, United States, African Union**

ARGENTINA

Argentina appreciates the opportunity to provide these comments and thanks the EWG for the work done in this draft.

GENERAL COMMENTS

1. Argentina suggests that the Spanish version should be reviewed as it is not syntactically clear and some paragraphs are repeating.
2. Argentina agreed to wait the OMS/ FAO information about quality water before to be included in this document
3. The term packaging in English can be translated into Spanish as “envasado” or as “empacado”. Argentina considers the meaning is not exactly the same, and inconsistency between the definitions is observed.

Argentina suggests, in the specific observations, changes in the Spanish version that could give a better interpretation, especially for Spanish-speaking countries, who have packaging facilities where several post-harvest activities are performed including packaging. Argentina suggests a review, in the Spanish version, of all paragraphs where the term packaging was used.

4. Argentina suggests defining the term elaboration.

SPECIFIC COMMENTES

Spanish version:

2.3 Definiciones

Envasador/**empacador**: persona responsable de ~~gestionar~~ **desarrollar** las actividades poscosecha y el envasado/**empaque** de frutas y hortalizas frescas

Establecimiento de envasado, establecimiento de empaque, instalación de envasado o planta de envasado: cualquier establecimiento en el que se ~~procede al envasado~~ **realizan actividades poscosecha y/o envasado/empaque** de las frutas y hortalizas frescas.

Actividades poscosecha: las actividades **realizadas después de la cosecha** inherentes al envasado, como lavado, selección, eliminación selectiva, tipificación, cortado y recorte que impliquen una mínima transformación/**empaque incluyendo el envasado** de las frutas y hortalizas frescas

Rationale: See general comment N° 3

24. Water used for agricultural purposes should be of suitable quality for its intended use. Special attention to water quality should be considered for the following situations.

Comment: Is the paragraph sufficient or necessary to specify the required quality of water?

130. All stakeholders – government, industry, and consumer organizations ~~and the media~~ – should work to communicate clear consistent messages on handling fresh fruits and vegetables safely. Consumer information on handling fresh fruits and vegetables safely should cover

ANNEX I

READY-TO-EAT FRESH PRE-CUT FRUITS AND VEGETABLES

INTRODUCTION

~~2. Some of the microbiological pathogens associated with fresh fruits and vegetables include *Salmonella* spp., *Shigella* spp., pathogenic strains of *Escherichia coli*, *Listeria monocytogenes*, norovirus and hepatitis A virus and parasites such as *Cyclospora*. Some of these pathogens are associated with the agricultural environment, whereas others are associated with infected workers or contaminated water. Because of the ability for pathogens to survive and grow on fresh produce, it is important for the pre-cut industry to follow good hygienic practices to ensure the microbiological safety of its products.~~

3. Some of the microbiological pathogens associated with fresh fruits and vegetables include *Salmonella* spp., *Shigella* spp., pathogenic strains of *Escherichia coli*, *Listeria monocytogenes*, norovirus and hepatitis A virus and parasites such as *Cyclospora*. Some of these pathogens are associated with the agricultural environment, whereas others are associated with infected workers, contaminated water or the processing environment. Because of the ability for pathogens to survive and grow on fresh produce, it is important for the pre-cut industry to follow good hygienic practices to ensure the microbiological safety of its products.

Rationale: The second and the third paragraphs are very similar. Argentina suggests keeping the 3th paragraph.

ANNEX II

SPROUT PRODUCTION

5.5.1. Water use during sprout production

~~37. Sprout producers should follow GHPs to minimize the potential for the introduction or spread of pathogens in processing water. The quality of water used should be dependent on the stage of the operation. Because of the potential for pathogen proliferation during the sprouting process, clean water could be used for initial washing stages, whereas water used later in the sprout production process (i.e. for the rinse following the microbiological decontamination of seed, and subsequent operations, including seed germination) should be preferably of potable quality or at least clean water.~~

38. Sprout producers should follow GHPs to minimize the potential for the introduction or spread of pathogens in processing water. The quality of water used should be dependent on the stage of the operation. Because of the potential for pathogen proliferation during the sprouting process, clean water could be used for initial washing stages, whereas water used later in the sprout production process (i.e. for the rinse following the microbiological decontamination of seed, and subsequent operations, including seed germination) should at least be clean water, and preferably of potable quality.

Rationale: The 37th and the 38th paragraphs are very similar. Argentina suggests keeping the 38th paragraph.

5.5.1.2 Initial rinse

~~39. The seeds should be rinsed thoroughly before the microbiological decontamination treatment to remove dirt and increase the efficacy of this treatment. Seeds should be rinsed and thoroughly agitated in large volumes of clean water, in such a way to maximize surface contact. The process should be repeated until most of the dirt is removed and rinse water remains clear.~~

40. The seeds should be rinsed thoroughly before the microbiological decontamination treatment to remove dirt and increase the efficacy of this treatment. Seeds should be rinsed and thoroughly agitated in large volumes of clean water, in such a way to maximize surface contact. The process should be repeated until most of the dirt is removed and rinse water remains clear.

Rationale: Argentina suggests keeping the 40th paragraph.

ANNEX III

FRESH LEAFY VEGETABLES

• ~~Specific information for fresh-cut, pre-cut or ready-to-eat bagged salads. Consumers need specific and clear guidance on how to safely handle fresh-cut, pre-cut or ready-to-eat (RTE) leafy vegetables. There is anecdotal evidence to suggest that some consumers find it difficult to distinguish between product that can be consumed without further washing and that which requires washing before consumption, particularly bagged produce such as herbs and spinach. Clear labelling is therefore important. If not labelled as “washed and ready to eat”~~

(or similar wording), then it needs to be washed.

~~• Specific information for fresh-cut, pre-cut or RTE bagged salads. Consumers need specific and clear guidance on how to safely handle fresh-cut, pre-cut or RTE leafy vegetables. There is anecdotal evidence to suggest that some consumers find it difficult to distinguish between product that can be consumed without further washing and that which requires washing before consumption, particularly bagged produce such as herbs and spinach. Clear labelling is therefore important. If not labelled as “washed and ready to eat” (or similar wording), then it needs to be washed.~~

• Specific information for fresh-cut, pre-cut or ready-to-eat (RTE) bagged salads. Consumers need specific and clear guidance on how to safely handle fresh-cut, pre-cut or RTE leafy vegetables. There is anecdotal evidence to suggest that some consumers find it difficult to distinguish between product that can be consumed without further washing and that which requires washing before consumption, particularly bagged produce such as herbs and spinach. Clear labelling is therefore important. If not labelled as “washed and ready to eat” (or similar wording), then it needs to be washed.

ANNEX V BERRIES

3.2.1.1 Water for primary production

15. ~~Only clean water~~ At least clean water should be used for berry production.

CANADA

Canada would like to congratulate Brazil and France for the work done on this document which is greatly improved. A lot of duplication was deleted making the reading of the document much easier.

General Comments

Grammatical/editorial comments throughout the document for consideration:

- Many sentences are missing the period at the end of the sentence.
- Consistency in the use of -ize and -ise (e.g., minimise and minimize).
- Consistency in the use of the hyphen (e.g., run-off and runoff, cross-contamination and cross contamination, postharvest and post-harvest).
- A few track changes are still apparent (underlined words and spacing) in the document.

Specific Comments

2.3 Definitions

Manure

Comment: Change to a lowercase the word “Animal” from the Manure definition.

Rationale: For consistency with the format of the other definitions.

Ready-to-eat fresh fruits and vegetables

Comment: Revise the ready-to-eat fresh fruits and vegetables definition.

Ready-to-eat fresh fruits and vegetables – any fruit or vegetable which is normally eaten in its raw state or any fruit or vegetable ~~handled, processed, mixed, cooked, or otherwise prepared into a form which is normally eaten without further microbiocidal steps.~~ that has been washed, peeled, cut or otherwise physically altered from its original form but remain in the fresh state.

Rationale: The word cooked should not be in the definition of a “fresh” ready-to-eat fruits and vegetables.

Standard Operating Practice (SOP)

Comment: Change the word “Practice” to “Procedure” and a modified definition is proposed.

Standard Operating Practice Procedure (SOP) – a set of detailed explanation instructions of how a policy is to be implemented. ~~The SOPs should contain full working instructions as well as information on applicability.~~ which describe how to carry out a routine activity.

Paragraph 17

Comment: Make the word example plural in the last sentence.

The use of an effective wind-break (natural such as trees or constructed barriers) or use of a protective covering ~~is an~~ are examples of measures that can be used to reduce pathogen and chemical contamination of the primary production site.

Paragraph 19

Comment: Italicize the word General.

Agricultural inputs should not contain biological, physical or chemical contaminants (as defined under the ~~General~~ *General Principles of Food Hygiene* (CAC/RCP 1-1969)) at levels...

Paragraph 28

Comment: Change the words “could not” to “cannot” in the last sentence.

This provision may be not necessary when water used for this purpose ~~could not~~ cannot reach the fruits and vegetables (e.g. tall fruit trees, live tree fences or indoor cultivation).

Paragraph 61

Comment: In the third bullet point, change “or storage them safely in site” with “for storing them safely in site”.

Policies should be established for the control of equipment when it is not in use, including policies for the removal of equipment from the work area or ~~storage~~ for storing them safely in site.

Paragraph 63

Comment: Remove the last comma of the sentence in the second last bullet point.

Where conveyances and/or containers are used for transporting anything in addition to foodstuffs or for transporting different foodstuffs at the same time, there should, be effective separation of products.

Paragraph 96

Comment: Delete the word “which” and change “processing of” to “process”.

The *Annex for Sprout Production* ~~which~~ provides additional specific recommendations for the ~~processing~~ process of germination process.

Paragraph 117

Comment: Add the word “harvesters”. Remove the word “they”. Add the word “is”.

Operators such as growers or harvesters, in cases where contract harvesters are used, ~~they~~ should keep current all relevant information on agricultural activities such as information concerning each lot, sprays used, date harvested, grower contact information, harvest practices and water quality, if water is used in harvesting.

Paragraph 121

Comment: In the last sentence, change the words “are not permitted” to “do not”

Pest control systems should be implemented to ensure that pest harbourage and access is minimized in the establishment to the extent practical, and that pests ~~are not permitted to~~ do not become a source of contamination of fresh fruits and vegetables or food contact surfaces.

Paragraph 129

Comment: Remove the words “provided and”.

Consumer handling information should provide specific directions for product storage and use, including regarding the ‘use-by’ date or other shelf-life indicators when ~~provided and~~ appropriate/needed.

ANNEX I

READY-TO-EAT FRESH PRE-CUT FRUITS AND VEGETABLES

Paragraph 14

Comment: Remove the 5. at the end of the paragraph.

Paragraph 18

Comment: Change the section number.

Refer to section ~~5.2.2.4~~ 5.2.2.3 of the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003).

Rationale: 5.2.2.4 is a reference to the wrong section.

Paragraph 19

Comment: Add a period in the section number

Refer to section ~~5.2.24~~ 5.2.2.4 of the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003).

ANNEX II**SPROUT PRODUCTION****5. Control of Operation**

Comment: Insert section “5.2.2 Specific process steps” after paragraph 17. Move section “5.5.1 Water use during sprout production” and section “5.5.1.2 Initial rinse” from their current location on page 29 to section 5.2.2 and change the section numbers accordingly. The text (paragraph 37 and paragraph 39) can be moved entirely with no proposed modifications to the text.

5.2.2.2 Specific process steps

~~5.5.1~~ 5.2.2.1 Water use during sprout production

~~5.5.1.2~~ 5.2.2.2 Initial rinse

Rationale: To be consistent with the section numbers in Annex II Sprout Production and for clarity and logical flow in the order of the specific process steps during sprout production.

5.2.2.2 Chemical Treatments

Comment: Remove section 5.2.2.2 Chemical Treatments.

Rationale: To be consistent with the section numbers in Annex II Sprout Production.

5.2.2.2.1 Microbiological decontamination of seeds

Comment: Change the section number.

~~5.2.2.2.1~~ 5.2.2.3 Microbiological decontamination of seeds

Rationale: To be consistent with the section numbers in Annex II Sprout Production and for clarity and logical flow in the order of the specific process steps during sprout production.

5.2.2.2.2 Rinse after seed treatment

Comment: Change the section number.

~~5.2.2.2.2~~ 5.2.2.4 Rinse after seed treatment

Rationale: To be consistent with the section numbers in Annex II Sprout Production and for clarity in the order of the specific process steps during sprout production.

Paragraph 20

Comment: Move paragraph 20 under a new section number and new title.

~~5.2.2.4 Cold storage~~ 5.2.2.9 Storage of finished product

Where appropriate, sprouts should be kept under cold temperature (e.g. 5°C) that will minimize microbial growth for the intended shelf life of the product. Regular and effective monitoring of temperature of storage areas and transport vehicles should be carried out.

Rationale: To be consistent with the section numbers in Annex II Sprout Production and for clarity since this information is for finished products; therefore it should be the last step under the specific process steps of sprout production.

5.2.2.6.2 Harvesting

Comment: Change the section number.

~~5.2.2.6.2~~ 5.2.2.7 Harvesting

Rationale: To be consistent with the section numbers in Annex II Sprout Production and this is a process step on its own not a sub-section.

5.2.2.3.1 Final rinse and cooling

Comment: Change the section number.

~~5.2.2.3.1~~ 5.2.2.8 Final rinse and cooling

Rationale: To be consistent with the section numbers in Annex II Sprout Production and this is a process step on its own not a sub-section.

Paragraph 38 and 40

Comment: Delete paragraph 38 and 40.

Rationale: Duplicate of paragraph 37 and 39.

ANNEX III: FRESH LEAFY VEGETABLES

Paragraph 18

Comment: Make the word "item" plural.

Paragraph 19

Comment: Delete the third bullet point.

Rationale: Duplicate of second bullet.

Paragraph 20

Comment: Make the word "item" plural.

ANNEX IV: MELON

5.5.1 Post-harvest water use

Comment: Change the section number and move section 5.2.2.2 Chemical treatments after this new numbered section.

~~5.5.1~~ 5.2.2.1 Post-harvest water use

5.2.2.2 Chemical treatments

Rationale: To be consistent with the section numbers in Annex III Melon and section 5.5.1 cannot be before section 5.2.2.3.

Paragraph 30 and 31

Comment: Make the word "item" plural.

ANNEX V: BERRIES

Paragraph 8

Comment: Delete the text strikethrough below.

This Annex follows the format of the *General Principles of Food Hygiene* (CAC/RCP 1-1969) and should be used in conjunction with it and other applicable codes such as the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003), and Annex I, the Annex for *Ready-to-Eat Fresh Pre-cut Fruits and Vegetables*, ~~Annex II of the *Guidelines on the Application of General Principles of Food Hygiene to the Control of Viruses in Food* (CAC/GL 79-2012), the *Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables* (CAC/RCP 44-1995) and the *Code of Practice for the Processing and Handling of Quick Frozen Foods* (CAC/RCP 8-1976).~~

Rationale: For consistency with the other Annex in this Code and a reference to these Codes are already included in section 2.2 Use of the Code of Hygienic Practice for Fresh Fruits and Vegetables.

Paragraph 32 and 33

Comment: Make the word "item" plural.

COLOMBIA

Colombia is pleased to present the following comments on the "**Proposed Draft Revision of the Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003)**" at Step 3, sent by the Secretariat of the Codex Alimentarius Commission.

Heretofore we reference the Spanish version of document CX/FH 16/48/6.

I. Annex I, Paragraph 21; Annex II, Paragraphs 3, 4, 16, 19, 27, 28, 37, 38, 39, 40 and Item 5.2.2.2.1

Colombia recommends replacing the term "decontamination" with "disinfection" as refers to seeds, as this is the term used to refer to the treatments that reduce the microbial load of seeds and which appears in the documents of the Food and Agriculture Organization of the United Nations (FAO), as indicated below:

- Food and Agriculture Organization (FAO) of the United Nations. Quality Declared Seed System. Rome, Italy 2006. pg. 17.
- Food and Agriculture Organization (FAO) of the United Nations: Regional Office for Latin America and the Caribbean. Manual Técnico [Technical Manual] *Producción Artesanal de Semillas de Hortalizas para la*

Huerta Familiar [Artisan Production of Vegetable Seeds for Backyard Vegetable Gardens] Santiago, Chile. 2011. ppg. 39; 83.

- WILLAN R. L. A Guide to Forest Seed Handling. DANIDA Forest Seed Center FAO. Rome, Italy 1991. Proposal:

Proposal: Strike "~~decontamination~~" and replace with "**disinfection.**"

II. Appendix I. 2.3. Definitions.

Regarding the suggested definitions, the proposed text should be placed in brackets since paragraph 6 states that, "(...) As CCFH47 agreed to request 'Scientific advice to help clarify the use of clean, potable and other types of water in the General Principles of Food Hygiene and other hygiene texts' regarding the microbiological parameters of clean water, the EWG decided to wait for this scientific advice from FAO and WHO."

Proposal: [Types of water:

Clean water: Water that does not compromise food safety in the circumstances it is used.

Potable water: Water that meets the quality standards of drinking water, as described in the WHO Guidelines for Drinking Water Quality.]

EL SALVADOR

El Salvador appreciate the document prepared by the eWG, presided over by Brazil and France.

2.1 Scope

4. This code of practice covers general hygienic practices

2.3 Definitions

- Biological control: the use of competing biologicals (such as insects, microorganisms and/or microbial metabolites) for the control of mites, pests, plant pathogens and spoilage organisms. [Translator's note: change does not affect the English version.]

- Manure: Animal excrement **obtained from livestock operations**, which may be mixed with litter or other material, and which may be fermented or otherwise treated

- Postharvest activities: activities performed incidental to packing, such as washing, sorting, culling, grading, cutting, and trimming involving minimal transformation of fresh fruits and vegetables, **and storage.**

- Primary production of fruits and vegetables: those steps involved in the growing and harvesting of fresh fruits and vegetables including, for example, soil preparation, planting, irrigation, application of ~~fertilizers and~~ agricultural chemicals, field-packing or transport to a packing establishment.

- Standard Operating Practice (SOP): a detailed explanation of how a policy is to be implemented. The SOPs should contain full working instructions as well as information on applicability. [Translator's note: change does not affect the English version.]

We feel that the terms "potable water," "clean water," and "drinking water quality" should be clearly established, as well as the acceptability criteria, ex. for irrigation water, the scientific advice from FAO and WHO is needed. The possibilities and access countries have to water use should also be considered.

We recommend standardizing concepts in Codex documents.

IRAN

General comments:

1. The text needs to be edited before publication especially in punctuation.
2. Hazards are classified into biological, physical and chemical. In the text "microbial hazards" is seen frequently, while "biological" is referred to in 2 cases. So, it is more appropriate to use "**biological hazards**" rather than "microbial hazards".

Appendix I: PROPOSED DRAFT REVISION TO THE CODE OF HYGIENIC PRACTICE FOR FRESH FRUITS AND VEGETABLES (CAC/RCP 53-2003)

3.2.1.4. Agricultural chemicals

34. In order to minimize the emergence of microbial resistance, when selecting agricultural chemicals consideration should be given to the *Guidelines for Risk Analysis of Foodborne Antimicrobial Resistance* (CAC/GL 77-2011).

New Paragraph instead of 35: Agricultural extension officers should be trained/updated in proper

application procedures – types of pesticides, times and frequency of pesticide applications, etc. – so that they can, in turn, train farmers and growers in proper application procedures.

3.2.2.1 Location, design and layout

46. The internal design and layout should permit compliance with good hygienic practices for the primary production of fresh fruits and vegetables indoors, including protection against cross-contamination between and during operations. Each establishment should be evaluated individually in order to identify specific hygienic requirements for each product

New Paragraph (after 46): In cases where the farmer lives on the premises, his house/accommodation should not be close to the site of primary production, storing and packing of fresh fruits and vegetables in order to minimize risk of cross-contamination.

3.3.2. Storage and transport from the field to the packing facility:

New line (bullet) at the end of the section: The length of time of transportation should be as short as possible to minimize the risk of quality loss of fruits and vegetables.

3.2.4. Equipment associated with growing and harvesting

Containers (including liners of containers made from biodegradable materials) that are no longer cleanable should be disposed of since they may increase the risk of microbial contamination and **chemical migration**.

9.4 Consumer Education

130. All stakeholders –government, industry, consumer organizations and the media –should work to communicate clear consistent messages on handling fresh fruits and vegetables safely. Consumer information on handling fresh fruits and vegetables safely should cover:

- Avoiding the purchase of damaged or rotten products to minimize microbiological contamination.
- Avoiding the increase in product temperature during transportation. Time in transit for fresh fruits and vegetables between retail/markets and the home should be kept as short as possible
- Storage/ refrigeration of fresh fruits and vegetables. Products should preferably be stored in a cool environment. Some prepackaged products should be refrigerated as soon as possible.
- Once removed from the refrigerator, processed prepackaged products should be consumed as soon as possible.
- Cross-contamination. Consumers need to handle, prepare, and store produce safely to avoid cross-contamination with foodborne pathogens from various sources (e.g. hands, sinks, cutting boards, utensils, raw meats, **and other raw and/or unwashed fruits and vegetables**).

ANNEX I: READY-TO-EAT FRESH PRE-CUT FRUITS AND VEGETABLES

INTRODUCTION: Paragraph 2 is repeated twice.

1. OBJECTIVE

4. Hygienic recommendations for the primary production of fresh fruits and vegetables are covered under the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003). This Annex recommends the application of Good Hygienic Practices (GHPs) for all stages involved in the production of ready-to-eat fresh pre-cut fruits and vegetables, from receipt of raw materials to distribution **and consumption** of finished products.

5. The primary objective of this Annex is to identify GHPs that will help control biological, physical, and chemical hazards associated with the processing of ready-to-eat fresh pre-cut fruits and vegetables. Particular attention is given to minimizing microbiological hazards. This Annex provides elements that should be taken into account in the production, processing and distribution **and consumption** of these foods.

ANNEX III: FRESH LEAFY VEGETABLES

INTRODUCTION

1. Fresh leafy vegetables are grown, processed and consumed in multiple ways and in diverse conditions throughout the world. They are grown on farms that vary from very large to very small. Fresh leafy vegetables are marketed both locally and globally to provide year round availability to consumers and are sold as fresh, fresh-cut, pre-cut or ready-to-eat products such as pre-packaged salads. **In addition, in some countries home vegetable gardens are common in some regions. That is to say, families grow vegetables in home vegetable gardens for their own consumption.**

2. A broad array of microbial pathogens have been associated with fresh leafy vegetables as reported in international outbreak data, including Enterohemorrhagic *Escherichia coli*, *Salmonella enterica*, *Campylobacter* spp, *Shigella* spp, Hepatitis A virus, Norovirus, *Cyclospora cayentanensis*, *Cryptosporidium parvum*, *Giardia lamblia*, *Yersinia pseudotuberculosis* and *Listeria monocytogenes*. Epidemiological evidence, outbreak investigations and risk assessments have identified areas of risk for pathogen contamination of leafy vegetables including key risks from water, animals, workers and manure-based soil amendments. Fresh leafy vegetables are grown and harvested in large volume, often for export and increasingly in places that are new to harvesting and distributing fresh leafy vegetables, therefore the potential for human pathogens to spread has also grown. Fresh leafy vegetables are marketed, **or consumed directly in cases where they are grown in home vegetable gardens**, as diverse products including whole, unprocessed heads, loose leaves, mixed cut leaves and fresh herbs, and pre-cut packaged products. Fresh leafy vegetables are packed in diverse ways, including field packed direct for market, in packing houses and pre-cut products processed in sophisticated processing plants. As fresh, ready-to-eat leafy vegetables move through the supply chain, there is also the potential for the introduction and growth of pathogens. There is no further processing treatment that would eliminate or inactivate the target microorganisms. Examples of control measures are illustrative only and their use and approval may vary among member countries

9.4 Consumer Education

19. Consumer information on handling fresh leafy vegetables safely should cover:

- a. **Texts of Bullets 2 and 3 are one and the same.**
- b. **add a new paragraph:**

For consumers who grow vegetables in their home gardens for their own consumption, information on handling fresh leafy vegetables safely should cover

specific information on safe handling and growing green leafy vegetables (including use of pesticides), as well as handling, washing, disinfecting, and preparing them at the consumption point.

MEXICO

Paragraph	Comments
<p>2.3 Definitions</p> <p>Biological Control: Use of competing biologicals (such as insects, microorganisms and/or microbial metabolites) <u>for the control of</u> mites, pests, plant pathogens and spoilage organisms</p>	<p>[Translator's note: this change does not affect the English language version]</p> <p>We suggest adding the phrase "<u>for the control</u>" to make the definition clearer.</p>
<p>Biofilm: A cluster consortia of microorganisms that bind to a surface.</p>	<p>We suggest changing the word consortia to "microbial cluster" or "<u>cluster of microorganisms</u>"</p> <p>Synonyms of consortia: Association, monopoly, group, set, community, grouping, company.</p> <p>Synonyms of cluster: Agglomeration, clump, mass, lump, pile, compound, union.</p>
<p>Packer/bagger Person responsible for the management of post-harvest processing and packaging of fresh fruit and vegetables.</p>	<p>We suggest adding the word "bagger" as synonymous with "packer" as both terms may be used.</p>
<p>3.2.1.5 Biological Control</p> <p>41. Consumer safety should be considered when using competing biological organisms and/or their metabolites applied <u>for the control of</u> pests, mites, plant pathogens and spoilages organisms in fresh fruit and vegetables. [Translator note: this change does not affect the English language version]</p>	<p>In keeping with the proposed change to the definition of this term, we suggest that the term "Biological Control" should be used throughout the document. [Translator note: the proposed change does not affect the English language version]</p>
<p>3.1.2. Animals and human activity</p> <p>Appropriate biological, pest control cultivation, physical, and chemical measures for <u>the control of harmful fauna</u> should be used, in order to exclude animals from the primary production and handling</p>	<p>This point is in relation to the presence of animals or harmful animals and therefore we suggest eliminating the term "pest". Point 3.4.3 deals with pest control systems.</p>

<p>areas, to the extent practicable. Examples of methods worthy of mention are physical barriers such as fences, active deterrents such as devices that make noise, scarecrows, images of owls, aluminum strips, or other farming methods such as crop rotation.</p>	
<p>3.2 Hygienic production of fresh fruit and vegetables 3.1.1.1 Water for primary production 3.2.1.1.2. Water for fertilizers, pest control and other <u>plant protection products or pesticides</u> agricultural chemicals <u>25# Receptacles and containers used to store water for this purpose must be kept clean and protected from domestic and wild animals, humans, runoff water, and the spraying of chemicals.</u> <u>25## Care must be taken to ensure that agricultural chemicals, organic fertilizers, health stations, machinery, farm tools and equipment are not stored close to water sources and water storage tanks.</u></p>	<p>We suggest the heading of 3.2.1.1.2 “Water for fertilizers, pest control and other agricultural chemicals” should be changed to “Water for fertilizers, pest control and other <u>products for plant protection or pest control</u>”</p> <p>We suggest the addition of two paragraphs after number 25 to provide guidance on water receptacles and containers. Furthermore, guidance is given on the storage of agricultural chemicals that should not be stored close to sources of water.</p>
<p><u>3.2.1.4 Use and handling of products for plant protection and pest control. <u>Agricultural chemicals</u></u> 37. The mixing of agricultural chemicals should be carried out in such a way as to avoid contamination of water and land in the surrounding areas. <u>Mixes should be prepared in areas specifically designated for this purpose. These areas shall be clearly identified with signs warning of the hazard to persons entering the area.</u></p>	<p>We suggest that the heading 3.2.1.4 “Agricultural chemicals” be changed to Use and handling of products for plant protection and pest control”</p> <p>We also suggest adding the text proposed to paragraph 37, on areas to be used for the mixing of agricultural chemicals.</p>
<p>Biological Control [this change does not affect the English language version] 41. Consumer safety should be considered when using competing biological organisms and/or their metabolites applied for the control of pests, mites, plant pathogens and spoilages organisms in fresh fruit and vegetables. (This change does not affect the English language version)</p>	<p>In keeping with the proposed change to the definition of this term, we suggest that the term biological control of should be used throughout the document. [The proposed change does not affect the English language version]</p>
<p>5.3 Incoming material requirements <u>105# Assessment of pesticide residues must be considered when accepting or rejecting incoming material.</u></p>	<p>We suggest adding a paragraph after 105, proposing that pesticide residue should be a criterion of acceptance or rejection used by fresh fruit and vegetable processing plants. Having no such control can have consequences for consumer health.</p>
<p>5.7 Documentation and records 110. Documentation and records can enhance the credibility and efficacy of food safety control systems. Growers should keep current all relevant information on agricultural activities such as the site of production, suppliers’ information on agricultural inputs, lot numbers of agricultural inputs, irrigation practices, <u>records of the</u> use of agricultural chemicals, water quality data, pest control and cleaning schedules for indoor establishments, premises, facilities, equipment and containers.</p>	<p>We believe it is important to specify that a record should be kept of the application of pesticides by the grower so these applications can be monitored.</p>

New Zealand would like to thank Brazil and France, as co-chairs of the Working Group, and the participating member states, for preparing the draft revision documents.

Comments on the draft revision document:

General comments:

- Agree that clarification is needed about what 'clean' water is. Until then 'potable' water should be used for sprout production.

Specific comments on the draft revision text:

Paragraph	Comment	Rationale
Appendix 1		
2	Include a short paragraph here along the lines of Annex I (2) introducing the microbial hazards by name at the start. For example <u>'Some of the microbiological pathogens associated with fresh fruits and vegetables include <i>Salmonella</i> spp., <i>Shigella</i> spp., <i>Campylobacter</i>, pathogenic strains of <i>Escherichia coli</i>, <i>Listeria monocytogenes</i>, <i>Yersinia pseudotuberculosis</i>, norovirus, hepatitis A virus and parasites such as <i>Cyclospora</i>, <i>Giardia</i> and <i>Cryptosporidium</i>'.</u>	Microorganisms (e.g. <i>Listeria monocytogenes</i>) are introduced at different parts of the document (e.g. P70), while there is no mention of any specific pathogens earlier to engage the reader. This sentence is taken from Annex III paragraph 2.
7 (Definitions)	Agricultural inputs: Add <u>'including compost'</u> after 'fertilizers' in the definition of "	Compost (organic fertilizer) is a significant input in terms of microbial hazards
Definitions	Antimicrobial agents: Delete: 'but causes little or no damage to the fresh fruits and vegetables, such as disinfectants and fungicides'.	Implicit in the context of the document
Definitions	Biosolids: Delete 'untreated' in: the name for the solid, semisolid or liquid untreated residue generated during the treatment of domestic sewage in a treatment facility.	Contradictory having 'untreated' and 'treated' in the same context.
Definitions	Ready-to-eat fresh fruits and vegetables: Delete 'cooked'.	'Cooked' is outside the scope of this document.
Definitions	Include the definition of <u>'flood irrigation': A system of irrigation where water is pumped or brought to the fields and is allowed to flow along the ground among the crops'</u>	Flood irrigation is mentioned in paragraph 13 without definition.
13	Add <u>'The risk from chemical hazards should also be assessed.'</u> after the 4 th sentence.	The risk from chemical hazards from environmental events such as flooding, should be included.
21	Bullet 1: insert <u>'roof water'</u> in the examples after 'reused irrigation water'	Roof water catchment is also done, and carries risks of contamination by pests, birds etc.
21	Bullet 2: Add <u>'wildlife'</u> after 'livestock' in the examples of 'prevent and minimize contamination'. (e.g. from livestock, <u>wildlife</u> , sewage treatment, human habitation, manure.....)	Wildlife are a source of hazards in growing areas
21	The provided link to the WHO document (guidelines) doesn't work.	New link available?
22	Include <u>'chemical water treatment'</u> , under 'possible corrective actions' after 'filtering water'	Chemical water treatment can be an alternative to the corrective actions mentioned.
3.2.1.1.3	Consider adding information on 'aquaponics' as a specific subset of hydroponics.	Aquaponics has specific areas of risk associated with the use of water and fish

		waste as inputs into produce-growing areas
28	Add ' cleaning activities ' to the first sentence under 'Water for other agricultural uses'	Cleaning activities would need to have clean water.
30	Change bullet 2 to : <ul style="list-style-type: none"> • <u>Composting, if done properly, can be a practical and efficient method to inactivate foodborne pathogens in manure. In general, only fully composted animal waste or plant material should be applied to production fields. Manure, biosolids and other natural fertilizers which are untreated or partially treated should not be used after plant emergence or after a transplant is put into the soil unless appropriate corrective actions are being adopted to reduce microbial contaminants such as using a time between application and harvest of fresh fruits and vegetables that will reduce pathogens remaining in the amended soil to levels that are unlikely to result in contamination of the product.</u> Delete bullet 5.	Bullet 2 and Bullet 5 should be combined to make it clear that 2 is preferred, but if incompletely composted material is used, then there are recommendations that should be followed.
33	Add link to established Codex levels	Adding the link would be useful to the reader
35	Add ' and safety ' after 'application'	Safety procedures are important during chemical spraying.
45	Add ' maintained ' after 'constructed'	Ongoing maintenance is important to safe production too.
51	Add ' and at regular intervals, after using the toilet, and after any contact with contaminated surfaces ' in the second sentence and after 'food contact surfaces'	These additions need to be specified as they are important for maintaining hygiene
55	Add ' including harvest areas ' after 'should not be allowed to enter any food handling area'	Exclusion of sick workers from contact with produce during harvest is important.
56	Add a new first bullet saying ' <u>The grower should have and implement a sickness and exclusion policy</u> '	A formal requirement and instruction during training will help define duties during sickness.
56	Change to "Growers should be encouraged to recognize symptoms of diarrhoeal, food-transmissible communicable <u>diseases, including vomiting and diarrhoea,</u> or other injury, and re-assign agricultural workers as appropriate.in case the disease doesn't affect the safety of the product."	Provide clarification in wording and include vomiting as a symptom.
57	Delete 'Cuts and wounds should be covered by suitable waterproof dressings when personnel are permitted to continue working'	Repeated in the next sentence
57	Add ' <u>Dedicated personal protective clothing and equipment should only be used in the assigned areas</u> ' as a new sentence after the first sentence.	To underline that protective clothing and equipment should only be used in assigned areas, to prevent cross-contamination.
64	Add ' <u>Also see section 3.2.4</u> ' here	Maintenance mentioned earlier as well
66	Bullet 3: Means of verification need to be specified here. For example ' <u>by a testing regimen</u> '	Not enough information provided

Section 5.3: 103	Delete 103 and the two bullet points of 105	This section as titled is about the range of 'incoming materials' (for example, 'Agricultural Inputs'. But the points discussed in 103 and the two bullets of 105 are about 'fruit and vegetables', i.e. the final products. Suggest deleting the parts that are not relevant
112	Add ' <u>agricultural chemicals, use and storage</u> ', ' <u>compost records of purchase and use</u> ' to the list. Include in Water monitoring and test results, ' <u>including testing of wash water chemical levels</u> '	Other relevant records that should be kept.
116	Add ' <u>date harvested</u> ' before 'date packed'	Important detail missing from the list.
129	Add ' <u>They also need instructions to wash the produce, where necessary.</u> ' as a last sentence	Instructions for washing needed, where necessary.
138	Add ' <u>Sickness reporting and exclusions policy</u> ' to the list of bullets	Missing point to be added.
Annex 1		
3	Delete whole paragraph	Repeat of Paragraph 2
8	Replace with 'This Annex does not directly apply to fresh fruit and vegetables that have been <u>minimally</u> trimmed leaving the food <u>otherwise</u> intact.'	To avoid confusion with the 'trimming' mentioned in paragraph 6, the step of 'minimal trimming' should be made clear here. For example, minimal trimming could be cutting off the base of the stalk after harvest, as opposed to cutting into pieces (the latter would fall under paragraph 6.
Annex 2		
8	Replace with "When seeds are known to be destined for the production of sprouts for human consumption, wild or domestic animals should not be allowed to graze in the fields where seeds are grown (e.g. employing sheep for spring clip back of alfalfa) <u>or restricted from grazing for a recommended number of days prior to harvest, where this has been established for a specific seed type.</u>	Exclusion of grazing animals (and thus the manure from this source that may contribute pathogens to the seeds) from a seed-producing paddock prior to harvest should be considered for the period of time if this has been established for a particular crop.
19	Last sentence should read 'Rinsing should be repeated sufficiently to <u>reduce</u> the antimicrobial agent <u>to an acceptable level.</u>	More practical and achievable than elimination
31	Add 'visible' after 'obvious' Seed containers should be examined at their arrival to minimize the potential for introducing <u>obvious</u> and <u>visible</u> contaminants <u>into</u> the establishment.	More inclusive
37	Delete ' or at least clean water '	Potable water needed here
38	Delete paragraph	Repeat of paragraph 37
5.8	Add ' <u>for seeds and sprouts</u> ' after 'Recall Procedures' in title.	Recall procedures needed for sprouts too, not just seeds
40	Delete paragraph	Repeat of paragraph 39

41	Third bullet – Where a lot has been recalled because of a food safety health hazardand which may present a similar risk hazard should be evaluated for safety. Fourth bullet – Seeds which may present a risk hazard should be held.....	Initially referring to food safety hazards then risk (to human health) associated with the hazard.
Annex III		
2	Change ‘enterohemorrhagic’ to ‘ pathogenic ’	There are types of pathogenic <i>E. coli</i> that are not enterohemorrhagic, but equally necessary to control
19	Delete 3rd bullet point	Repeat of second bullet point
Annex IV		
2	Last sentence - add ‘ contaminated irrigation water ’ as risk factor. ‘.....contributing to melon outbreaks include: contaminated irrigation water , infected food handlers, poor personal hygiene.....’	Contaminated irrigation water is also a risk factor for melons
10	Add to last bullet ‘Use biodegradable materials that do not introduce contamination and then only once to prevent cross-contamination	May be sources of contamination too at initial use
Annex V		
6	Add wording – This Annex encompasses all edible varieties of berries, including but not limited to: strawberries.....	There are other berry types too (like elderberries, boysenberries, etc.)
26	Add ‘ pick and ’ before ‘pack berries’ at end of sentence.	Both activities must be hygienically carried out

PARAGUAY

Paraguay appreciates the opportunity to comment on the document. While we generally agree with the content, we submit the following comments:

General comments

Paraguay supports the inclusion under the Scope of the sentence “*Certain requirements may not be applicable to fresh fruit that are a low level hazard and have not historically been the source of an outbreak, that is to say the fruit of tall trees that have inedible peel.*” It is our opinion that some fruits, such as coconut, represent a low hazard due to their characteristics.

Regarding the quality of water for the different uses and the meaning of suitable quality water, we agree that it is important to wait for the scientific advice from the FAO and WHO, requested by the CCFH at its 47th session, to provide further clarity on the use of clean, potable and other types of water in the *General Principles for Food Hygiene* and other hygiene texts, regarding the biological parameters of clean water.

Specific comments

Point 2.3 Definitions

Current wording - Agricultural worker - any person that undertakes one or more of the following: cultivation, harvesting and packing of fresh fruits and vegetables

Proposed wording - any person that undertakes one **or** more of the following: cultivation, harvesting and packing of fresh fruits and vegetables [Translator’s note, this change does not affect the English version]

Rationale: Improve wording.

POINT 3. PRIMARY PRODUCTION

Current text

10. To the extent possible, potential sources of environmental contamination should be identified prior to primary production activities. In particular, primary production should not be carried out in areas where the presence of potentially harmful substances would lead to an unacceptable level of such substances in or on

fresh fruits and vegetables after harvest.

Proposed text:

10. ~~To the extent possible~~ Potential sources of contamination from the environment should be identified prior to primary production. In particular, primary production should not be carried out in areas where the presence of potentially harmful substances would lead to an unacceptable level of such substances in or on fresh fruits and vegetables after harvest.

Rationale:

In our opinion the wording "to the extent possible" removes the mandatory element from the action of identifying possible sources of contamination from the environment prior to carrying out the activities.

Current text:

11. Where possible, growers should evaluate present and previous uses of both indoor and outdoor fresh fruits and vegetable primary production site(s) as well as adjoining land (e.g. crop grown, feed lot, animal production, hazardous waste site, sewage treatment site,) in order to identify potential microbial hazards. The potential for other types of contamination (e.g. from agricultural chemicals, mining extraction site, hazardous wastes, etc.) should also be considered.

Proposed text:

11. ~~Where possible, g~~ Growers should evaluate the present and previous uses of primary production sites of fresh fruit and vegetables (indoor and outdoor) as well as adjoining sites (e.g. crop grown, feed lot, animal production, hazardous waste site, sewage treatment site), in order to identify potential microbial, chemical and physical hazards. The potential for other types of contamination (e.g., from agricultural chemicals, mining extraction sites, hazardous wastes) should also be considered.

Rationale:

In our opinion the wording "where possible" removes the mandatory element from the action of evaluating the present and previous uses of primary production sites of fresh fruit and vegetables

3.1.2 Wild and domestic animals and human activity

Current text:

Paragraph 18, second subparagraph

- Primary production and handling areas should be properly maintained to reduce the likelihood of vector (e.g insects and rodents) attraction. Activities to consider include efforts to minimize standing water in fields, restrict animal access to water sources (may be based on local ordinances for public irrigation systems), and keep production sites and handling areas free of waste and clutter.

Proposed text:

Primary production and handling areas should be ~~properly~~ maintained **in conditions designed to** reduce the likelihood of vector attraction (insects and rodents). Activities to consider include efforts to minimize standing water in fields, restrict access by animals to water sources (may be based on local ordinances for public irrigation systems), and keep production sites and handling areas free of waste and clutter.

Rationale:

The change is proposed to improve the wording and make the requirement to reduce likelihood of vector attraction clearer.

3.2.1.1 Water for primary production.

Current text:

20. An appropriate and adequate supply of water of a suitable quality for use in different operations in the primary production of fresh fruits and vegetables should be available. The source of the water used for primary production and the method of delivery can affect the risk of contamination of fresh fruits and vegetables.

Proposed drafting:

20. An ~~appropriate and~~ adequate supply of water of a suitable quality for use in the different operations of primary production of fruit and vegetables should be available. The source of water used for production and the method of distribution, may affect the risk of contamination of fresh fruit and vegetables.

Grounds:

We suggest deleting the term "appropriate," as we believe it makes the sentence redundant and repetitive as the term "appropriate" and "adequate" are synonymous in Spanish. Furthermore, we propose replacing in Spanish – idóneo with apto, as it is more commonly used in our region [Translators note: This change does not affect the English version].

POINT 3.3.2 STORAGE AND TRANSPORT FROM THE FIELD TO THE PACKING FACILITY

Paragraph 63, subparagraph 5

Current text:

- Fresh fruits and vegetables should not be transported in vehicles used previously to carry animal manure, bio-solids or pesticides unless they are adequately cleaned and disinfected. Receptacles in vehicles and/or containers, when being used to transport fresh fruits and vegetables, are not to be used for transporting anything which may result in contamination of products.

Proposed text:

- Fresh fruits and vegetables should not be transported in vehicles used previously to carry animal manure, bio-solids or pesticides unless they are adequately cleaned and disinfected. **Furthermore, cleaning and disinfection processes must be verified to ensure they have been carried out effectively** Receptacles in vehicles and/or containers, when being used to transport fresh fruits and vegetables, are not to be used for transporting anything which may result in contamination of products.

Rationale:

We suggest the inclusion of the sentence "*Furthermore, cleaning and disinfection processes must be verified to ensure they have been carried out effectively,*" to avoid contamination of the fruit as a result of improper cleaning and disinfection, with special consideration for risk of contamination by biological agents or pesticide residue.

PHILIPPINES

General Comments:

The Philippines, as member of the Electronic Working Group, supports the recommendation of the EWG on the following:

1. Avoid duplication or repetition of paragraphs or provisions with those found in the specific Annexes or in other Codex guidelines such as on antimicrobial resistance;
2. Ensure consistency with the General Principles of Food Hygiene;
3. Request for scientific advice from FAO/WHO on the quality of water for different uses (i.e. clean water, potable water); and
4. Non-inclusion of Annexes on carrots, tomatoes, and hydroponics in the draft, since this will require further discussions with the Committee as possible new work proposals.

Specific Comments:

1. Annex I, page 22, Title of the Document

From	To
READY-TO-EAT FRESH PRE-CUT FRUITS AND VEGETABLES	READY-TO-EAT (RTE) FRESH PRE-CUT FRUITS AND VEGETABLES

Rationale: Inclusion of "(RTE)" after "Ready-to-Eat". In food technology and food service, RTE is an acceptable acronym for "ready-to-eat".

2. Annex I, page 22, Introduction, paragraphs 2 and 3

Para 2 and 3 are the same paragraphs, we propose to delete para 3

3. Annex I, page 22, Scope, paragraph 7, last sentence

From	To
For other establishments, (e.g those that use ready to eat pre-cut fresh fruits and vegetables in combination with other products, such as sauces, meat, cheese, etc.) only the specific sections that	For other establishments, (e.g. those that use ready to eat fresh pre-cut fresh fruits and vegetables in combination with other products, such as sauces, meat, cheese, etc.) only the specific sections that

relate to the processing of the fresh pre-cut fruit and vegetable components will apply.	relate to the processing of the RTE fresh pre-cut fruit and vegetable components will apply.
--	---

Rationale: For consistency.

4. Annex I, page 23, Section 2.3 Definitions

We propose the addition of the definition of:

Modified atmosphere packaging (MAP) - means packaging in which the atmosphere surrounding the pre-cut fruits and vegetable is different from the normal composition of air.

Rationale: The term was mentioned in paragraph 17 and should be clearly defined.

5. Annex I, page 23, Section 4, Heading

From	To
Establishment: Design and Facilities	<u>Packing</u> Establishment: Design and Facilities

Rationale: For consistency with other part of the document.

6. Annex I, page 23, 4.4.2 Drainage and waste disposal, paragraph 14

- Change "annex" to "**Annex**"
- Delete "5." in the last sentence

7. Annex II, page 29

Paragraphs 37 and 38 are similar except for the phrase "should be preferably potable quality or at least clean water" (para 37) and "should at least be clean water, and preferably of potable quality" (para 38). We propose to retain para 38, and delete para 37.

8. Annex II, page 29

Paragraphs 39 and 40 are the same so we propose to delete para 40

UNITED STATES

GENERAL COMMENTS

The United States appreciates the efforts of the electronic working group (EWG) to develop the *Proposed Draft Revision of the Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003). We believe that we should be able to address comments and resolve any issues at the 48th Session of the Codex Committee on Food Hygiene (CCFH48).

We have not included comments on minor issues such as formatting and punctuation; we plan to provide the Codex Secretariat with a copy of the document on which these have been marked.

SPECIFIC COMMENTS

SCOPE

Paragraph 4

Comment: Delete the final sentence:

~~Some requirements may not be applicable to fresh fruits with very low risk with no record as a source of outbreak i.e. fruits from tall tree with inedible peel such as durian, mangosteen, coconut, rambutan, etc~~

Rationale: The U.S. does not support the added statement because we do not believe that absence of a recorded outbreak is a sufficient basis to indicate the fruit or vegetable does not present a risk. Over the years we have seen numerous outbreaks from produce types that had no previous record of an outbreak. Moreover, the Code provides sufficient flexibility to apply the provisions as appropriate and necessary based on risk. The last sentence of paragraph 3 notes that "the code is, of necessity, a flexible one to allow for different systems of control and prevention of contamination for different groups of commodities." The "Use" section of the Code further states "Flexibility in application is an essential element of this code. Implementation of any hygienic practices is proportionate to the risk of foodborne illness or the characteristics of the commodity." We suggest that instead of this sentence we make revisions in the "Use" section as indicated below.

USE

Paragraph 6

Comment: Revise the paragraph as follows:

This code follows the format of the *General Principles of Food Hygiene* (CAC/RCP 1-1969) and should be used in conjunction with it and other applicable codes such as the Guidelines on the *Application of General Principles of Food Hygiene to the Control of Foodborne Parasites* (CAC/GL 88-2016), *Guidelines on the Application of General Principles of Food Hygiene to the Control of Viruses in Food* (CAC/GL 79-2012), the *Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables* (CAC/RCP 44-1995) and the *Code of Practice for the Processing and Handling of Quick Frozen Foods* (CAC/RCP 8-1976). **Because of the wide variation in the nature of fruits and vegetables and production practices**, flexibility in application is an essential element of this code. Implementation of any hygienic practices is proportionate to the risk of foodborne illness or the characteristics of the commodity **(e.g., conditions and practices associated with growing fruits from tall trees and that have inedible peel, such as durian, mangosteen, coconut and rambutan, present a lower likelihood of contamination at primary production than fruits such as melons or berries grown on or near the ground)**.

Rationale: To address concerns that prompted the addition of the sentence in the scope.

DEFINITIONS

Comment: Revise the definition of hydroponics as follows:

Hydroponics – a general term for the production of plants without soil in ~~a water~~ **an aqueous** nutrient medium.

Rationale: Editorial.

PRIMARY PRODUCTION

Paragraph 39

Comment: Delete “living areas” and “the inhabitants of the area” from the last sentence:

Agricultural chemicals should be stored in a safe, well ventilated place, away from production areas, ~~living areas~~ and harvested fruits or vegetables, and disposed of in a manner that does not pose a risk of contaminating crops, ~~the inhabitants of the area~~, or the primary production environment.

Rationale: While we do not disagree that it is appropriate to take steps to protect people from agricultural chemicals, this is out of scope of food hygiene.

Paragraph 56

Comment: Revise the first bullet as follows:

Growers should be encouraged to recognize symptoms of diarrheal, **or other** food-transmissible communicable diseases ~~or other injury~~, **(or conditions such as infected wounds)** and reassign agricultural workers as appropriate, ~~in case the disease doesn't~~ **to an activity that does not** affect the safety of the product.

Rationale: Clarification. Diarrheal illness is a food-transmissible communicable disease; injury should be tied to foodborne illness, e.g., wounds infected with *Staphylococcus aureus*.

Paragraph 61

Comment: Change “Standard operating procedure” to “SOPs” in the 3rd sentence:

~~Standard operating procedure~~ **SOPs** should be developed for the maintenance, cleaning and disinfecting operations of growing and harvesting equipment.

Rationale: The acronym for Standard Operating Procedures (SOPs) was defined in paragraph 53.

Paragraph 61, 3rd bullet

Comment: Revise as follows:

Policies should be established for the control of equipment when it is not in use, including policies for the removal of equipment from the work area or ~~storage them~~ safely **storing them** ~~in~~ **on** site.

Rationale: Editorial.

Paragraph 67

Comment: Revise as follows:

When primary production is carried out in indoor establishments (e.g. greenhouses), the recommendations of the *General Principles of Food Hygiene*, ~~section 6.3~~ **on pest control** should be followed ~~with respect to pest control~~.

Rationale: Editorial.

Paragraph 69

Comment: Change “must” to “should”:

Suitable provision ~~must~~ **should** be made for the storage and removal of waste. Waste ~~must~~ **should** not be allowed to accumulate in fresh fruit and vegetable handling and storage areas or the adjoining environment. Storage areas for waste should be kept clean.

Rationale: Editorial to reflect Codex terminology.

PACKING ESTABLISHMENT: DESIGN AND FACILITIES**Paragraph 71**

Comment: Revise as follows:

Packing activities can occur in the field or in facilities. Field pack operations should implement the same sanitary practices **as facilities** where practical or be modified as needed to minimize risks.

Rationale: Clarification.

Paragraph 78

Comment: Revise as follows:

Care should be taken to ensure that equipment used in handling fruits and vegetables **does** not damage the fruit or vegetable and can be cleaned and disinfected in order to avoid **becoming a** source of contamination, such as **from** biofilms.

Rationale: Clarification.

CONTROL OF OPERATION**Paragraph 110**

Comment: Modify to include relevant information from paragraph 117, which we recommend deleting:

Documentation and records can enhance the credibility and effectiveness of the food safety control system.

- ~~Growers~~ **Operators such as growers and contract harvesters** should keep current all relevant information on agricultural activities such as the site of production; suppliers' information on agricultural inputs; lot numbers of agricultural inputs; irrigation practices; use of agricultural chemicals, **including type and use date; harvest practices and harvest date;** water quality data; pest control; and cleaning schedules for indoor establishments, premises, facilities, equipment and containers.

- Packers should keep current all information concerning each lot such as information on incoming materials (e.g. information from growers, lot numbers), data on the quality of processing water, pest control programmes, cooling and storage temperatures, chemicals used in postharvest treatments, and cleaning schedules for premises, facilities, equipment and containers, etc.

Rationale: This makes the section more comprehensive.

Paragraph 114

Comment: Delete the paragraph

~~Appropriate records of production, processing, packaging and distribution should be kept long enough to facilitate recalls and foodborne illness investigations, if required. This period will likely be much longer than the shelf life of the product.~~

Rationale: The paragraph is essentially a repeat of paragraph 109.

Paragraph 116

Comment: Revise as follows:

Detailed records should be kept that link each supplier of the product with the immediate subsequent recipient of each product throughout the food chain. The information needed to link each supplier should include, if available, **and as appropriate to the point in the food chain, the grower name, address and phone number;** the packer name, address, and phone number; date packed, date released, type of product (e.g. fruit or vegetable name and/or variety name, etc.) including brand name, lot identification and number of lots, and transporter.

Rationale: Section 5.8 is a general section on recall procedures, but paragraph 116 focuses on packer information. A packer would need grower information. Paragraph 117 refers to “grower contact information,” which is confusing since that paragraph applies to records kept by “operators such as growers”.

Paragraph 117**Comment:** Delete

~~Operators such as growers or, in cases where contract harvesters are used, they should keep current all relevant information on agricultural activities such as information concerning each lot, sprays used, date harvested, grower contact information, harvest practices and water quality, if water used in harvesting.~~

Rationale: The reference to “grower contact information” is confusing, since the paragraph applies to records kept by “operators such as growers” and the paragraph refers to information not applicable to recall procedures. The information is adequately covered in 5.7 Documentation and records (paragraph 110).

ANNEX 1 READY-TO-EAT, FRESH, PRE-CUT FRUITS AND VEGETABLES

Comment: Add commas as indicated above and wherever the terms “ready-to-eat, fresh, pre-cut” appear together.

Rationale: Punctuation correction. Multiple adjectives require commas.

Paragraph 3**Comment:** Delete

~~Some of the microbiological pathogens associated with fresh fruits and vegetables include *Salmonella* spp., *Shigella* spp., pathogenic strains of *Escherichia coli*, *Listeria monocytogenes*, norovirus and hepatitis A virus and parasites such as *Cyclospora*. Some of these pathogens are associated with the agricultural environment, whereas others are associated with infected workers, contaminated water or the processing environment. Because of the ability for pathogens to survive and grow on fresh produce, it is important for the pre-cut industry to follow good hygienic practices to ensure the microbiological safety of its products.~~

Rationale: duplication of paragraph 2.

PRIMARY PRODUCTION**Paragraph 11**

Comment: Revise to use the Section number rather than specific items in a section. Note that a similar approach appears in multiple places and the same comment applies (e.g., paragraph 13 for section 4, paragraph 15 for section 5, paragraph 23 for section 6, paragraph 26 for section 9, and paragraph 28 for section 10). This also applies in each of the annexes.

Refer to ~~items 3.1 to 3.4~~ **Section 3** of the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003) and additionally:...

Rationale: The “items” listed are all the items in the section, so it would be appropriate to refer to the entire section. Note that if this recommendation is rejected, in all places where reference is to “item 10.1 to 10.4” in section 10, a revision would be needed, as section 10 only contains “items 10.1 and 10.2”.

PACKING ESTABLISHMENT: PERSONAL HYGIENE**Paragraph 24**

Comment: Revise to refer to the *General Principles of Food Hygiene*. (This would apply in all the appendices where a similar reference to Section 7 is made.)

~~Refer to item 7 of the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003).~~

Refer to the General Principles of Food Hygiene (CAC/RCP 1-1969).

Rationale: “Item 7” (paragraph 124) in the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003) is simply a reference to the *General Principles of Food Hygiene*. It is more direct to simply refer to the *General Principles of Food Hygiene*.

TRAINING**Paragraph 29****Comment:** Revise as follows:

Training ~~required of~~ **for** persons responsible for the production of fresh pre-cut fruits and vegetables, **should** include the following:

Rationale: Clarification, since “required” does not say by whom and Codex codes are recommendations.

ANNEX II SPROUT PRODUCTION

CONTROL OF OPERATION

Paragraph 18

Comment: Combine bullets 5 and 6

- ~~The duration of treatment and the concentration of antimicrobial agent used should be accurately measured and recorded.~~
- The duration of treatment and the concentration of antimicrobial agent used should be **accurately measured**, controlled, monitored and recorded.

Rationale: They are duplicative.

Paragraph 21

Comment: Revise as follows:

During germination, ~~keep~~ the environment and equipment **should be kept** clean to avoid potential contamination. All equipment should be cleaned and disinfected before each new batch.

Rationale: Editorial

Paragraph 26

Comment: Revise the 3rd sentence as follows:

If ~~lots of seeds~~ **seed lots** are found to be contaminated, they should not be sold or used for the production of sprouts for human consumption.

Rationale: Avoids a misinterpretation that “lots of seeds” means “many seeds;” “seed lots” is used elsewhere in the annex.

Paragraphs 37 and 38

Comment: Delete paragraph 37 and revise paragraph 38 as indicated.

~~37. Sprout producers should follow GHPs to minimize the potential for the introduction or spread of pathogens in processing water. The quality of water used should be dependent on the stage of the operation. Because of the potential for pathogen proliferation during the sprouting process, clean water could be used for initial washing stages, whereas water used later in the sprout production process (i.e. for the rinse following the microbiological decontamination of seed, and subsequent operations, including seed germination) should be preferably of potable quality or at least clean water.~~

38. Sprout producers should follow GHPs to minimize the potential for the introduction or spread of pathogens in processing water. The quality of water used should be dependent on the stage of the operation. Because of the potential for pathogen proliferation during the sprouting process, clean water could be used for initial washing stages, whereas water used later in the sprout production process (i.e. for the rinse following the microbiological decontamination of seed, and subsequent operations, including seed germination) should ~~at least be clean water, and preferably of~~ **be** potable quality.

Rationale: The same information is in two paragraphs; we recommend deletion of paragraph 37, since the last sentence in paragraph 38 is clearer. The last sentence refers to water used at multiple points in sprout production and indicates that it should at least be clean and, preferably, potable. We think it critical that potable water be used, at a minimum, for germination. Note that paragraph 19 (5.2.2.2, Rinse after seed treatment) indicates rinsing with potable water and paragraph 22 (5.2.2.6.1, Pre-germination soak) says “seeds should be soaked in potable water...” and “after soaking, seeds should be rinsed thoroughly with potable water.” Thus, it would be inconsistent to say that clean water could be used for germination when we indicated that potable water was needed at an earlier step. Our recommended change in the last sentence makes the statements about water consistent in the annex. We would not object to changing paragraphs 19 and 22 to specify “clean, or preferably potable” water in those instances. If so, we would revise the last sentence here to say “...whereas water used later in the sprout production process (i.e. for the rinse following the microbiological decontamination of seed, and subsequent operations, ~~including~~ **other than** seed germination) should at least be clean water, and preferably of potable quality. **Water used for seed germination should be potable.**

Paragraphs 39 and 40

Comment: Retain paragraph 39 and delete paragraph 40. Move paragraph 39 to follow paragraph 17.

39. The seeds should be rinsed thoroughly before the microbiological decontamination treatment to remove dirt and increase the efficacy of this treatment. Seeds should be rinsed and thoroughly agitated in large

volumes of clean water, in such a way to maximize surface contact. The process should be repeated until most of the dirt is removed and rinse water remains clear.

~~40. The seeds should be rinsed thoroughly before the microbiological decontamination treatment to remove dirt and increase the efficacy of this treatment. Seeds should be rinsed and thoroughly agitated in large volumes of clean water, in such a way to maximize surface contact. The process should be repeated until most of the dirt is removed and rinse water remains clear.~~

Rationale: Paragraphs 39 and 40 are the same. We also suggest that paragraph 39 be moved to follow paragraph 17 and precede section 5.2.2.2 (Chemical treatments). Paragraph 39 is placed in the section on water use during sprout production, but is not strictly about water, providing information on the rinsing process that takes place prior to seed decontamination (chemical treatments). The point about using clean water for initial washing stages is addressed in paragraph 38.

ANNEX III FRESH LEAFY VEGETABLES

Paragraph 19, bullets 2 and 3

Comment: Delete the 3rd bullet

- Specific information for fresh-cut, pre-cut or ready-to-eat bagged salads. Consumers need specific and clear guidance on how to safely handle fresh-cut, pre-cut or ready-to-eat (RTE) leafy vegetables. There is anecdotal evidence to suggest that some consumers find it difficult to distinguish between product that can be consumed without further washing and that which requires washing before consumption, particularly bagged produce such as herbs and spinach. Clear labelling is therefore important. If not labelled as “washed and ready to eat” (or similar wording), then it needs to be washed.

~~• Specific information for fresh-cut, pre-cut or RTE bagged salads. Consumers need specific and clear guidance on how to safely handle fresh-cut, pre-cut or RTE leafy vegetables. There is anecdotal evidence to suggest that some consumers find it difficult to distinguish between product that can be consumed without further washing and that which requires washing before consumption, particularly bagged produce such as herbs and spinach. Clear labelling is therefore important. If not labelled as “washed and ready to eat” (or similar wording), then it needs to be washed.~~

Rationale: Bullets 2 and 3 are the same.

ANNEX IV MELONS

Paragraph 9, third sentence

Comment: Revise as follows:

Netted rind surfaces, in contrast to smooth rind surfaces, provide an environment where microbial pathogens may more easily adhere to, survive on, and become more difficult to eliminate **from the melon** during post-harvest practices.

Rationale: Editorial for clarity.

Paragraph 20, second bullet

Comment: Revise as follows:

- Minimize or avoid fully submerging melons in colder dump tank water. When **melons are** submerged, water is more likely to infiltrate ~~into~~ the melons.

Rationale: Editorial for clarity. Delete “into” because “Infiltrate” means “to pass into.”

Thank you for the opportunity to provide these comments.

AFRICAN UNION

General comment: The Codex Committee on Food Hygiene (CCFH) will discuss the Proposed Draft Revision of the Code of Hygienic Practice for fresh fruits and vegetables at Step 4.

Introduction section

Issue: Replace the first sentence in paragraph 1 “Introduction” which reads “*Scientific research over the last decades has shown that a diet rich in fruits and vegetables is protective against many cancers and lowers coronary heart disease....*” with “**Scientific research over the last decades has shown that a diet rich in fruits and vegetables promote good health....**”

Rationale: The original sentence suggests the suitability of consumption of food (fruits and vegetables) in the prevention of diseases, even though food (fruits and vegetables) should not be presented as having an absolute therapeutic effect. The recommended introduction therefore conforms to the requirements of the

General Guidelines for Claims (CAC/GL 1-1979) (Rev 1-1991), section 3.4. which prohibits any claim as to the suitability of a food for use in the prevention, alleviation, treatment or cure of a disease, disorder or particular physiological condition.

1.1 Scope, paragraph 4

Issue: Modify the first sentence in the scope to read as follows: “**This Code of Practice covers General Hygienic Practices from primary production to consumption of fresh fruits and vegetables in order to ensure safe and wholesome product**”.

Rationale: The modified sentence allows logical flow and clarity of expression.

2.3 Definitions, paragraph 7

Issue: Antimicrobial agents: Replace the original statement with the following: “**any substance of natural, synthetic or semi-synthetic origin which at intended use concentrations kills or inhibits the growth of microorganisms but causes little or no damage to the fresh fruits and vegetables. Examples are disinfectants and fungicides**”.

Rationale: The recommended definition provides clarity of expression

3.2.1.3 Soil, paragraph 31

Issue: Replace the sentence in paragraph 31 with the following sentence: “*Soils should be evaluated for **microbial hazards**. If the evaluation concludes that such hazards may compromise the safety of crops, **appropriate** control measures should be implemented to reduce the microbial hazards to acceptable levels. If this cannot be achieved, by available control measures, growers should not use these soils for primary production*”.

Rationale: The rephrased sentence provides clarity on the specific types of hazards to be evaluated, thereby removing any ambiguities. It provides flexibility in the choice of appropriate control measures since the specified control measures (topsoil replacement or solar heat disinfection) are not feasible in small-scale farming.

3.2.1.4 Agricultural chemicals, paragraph 37

Issue: Replace the word “**mixing**” in **paragraph 37** with “**use**”. The sentence will read as follows: “*The **use** of agricultural chemicals should be carried out in such a way as to avoid contamination of water and land in the surrounding areas*”.

Rationale: The *mixing* of agricultural chemicals is one of the several ways by which water and land can be contaminated on the farm. However, the improper *use* of agricultural chemicals, which includes mixing of agricultural chemicals, covers all possible ways by which water and land and the surrounding areas on the farm can be contaminated by agricultural chemicals. Therefore, the replacement of the word (**mixing**) with the word (**use**) is more appropriate.

3.2.4 Equipment associated with growing and harvesting

Issue: Modify the sentence to read as follows:” *Policies should be established for the control of equipment when it is not in use, including policies for the removal of the equipment from the work area or **storing** them safely **on site***”.

Rationale: The modified sentence provides clarity of meaning.

3.3.1 Prevention of cross-contamination, paragraph 62

Bullet 1:

Issue: Replace the word “**contamination**” with “**contaminant**”. The sentence will read as follows: “*The field should be evaluated for the presence of hazards or **contaminants** prior to harvest to determine if the field or portions thereof should not be harvested.*”

Rationale: The modified sentence provides clarity of understanding and the word contaminant is more appropriate than contamination.

9.4 Consumer Education, paragraph 130

Bullet 1:

Issue: Replace the sentence with the following “**Avoiding the purchase of damaged, rotten or products sold under unsanitary conditions to minimize microbiological contamination.**”

Rationale: The new sentence provides clarity on the specific avoidable conditions that can promote microbial contamination of fresh fruits and vegetables that need to be stressed in Consumer Education to ensure the microbiological safety of these products.

ANNEX I: READY-TO-EAT FRESH PRE-CUT FRUITS AND VEGETABLES

Introduction, paragraph 2

Issue: Delete the entire paragraph 3 which states: “**Some of the microbiological pathogens associated with fresh fruits and vegetables include *Salmonella* species, *Shigella* species, pathogenic strains of *Escherichia coli*, *Listeria monocytogenes*, *Norovirus* and hepatitis A virus and parasites such as *Cyclospora cayetanensis*. Some of these pathogens are associated with the agricultural environment, whereas others are associated with workers or contaminated water. Because of the ability of pathogens to survive and grow on fresh produce, it is important for the pre-cut industry to follow Good Hygienic Practices to ensure the microbiological safety of its products.**”

Rationale: This paragraph is a repetition of paragraph 2 of the introduction section making it redundant.

ANNEX III: FRESH LEAFY VEGETABLES

Introduction, paragraph 2

Issue: Rephrase the sentence in line 9 to read as follows: “*Fresh leafy vegetables are marketed in diverse **forms** which include whole, unprocessed heads, loose leaves, mixed cut leaves and fresh herbs, and pre-cut package products*”.

Rationale: The new sentence provides clarity on the different forms of leafy vegetables that are offered for sale which are not necessarily different products.

ANNEX IV: MELONS

5.2.2.3 Cooling melons

Issue: Bullet 5: Replace the sentence with the following: “*It is recommended that **the concentration** of antimicrobial agents in the water at the temperature of use, should be adequate.*”

Rationale: The new text provides adequate clarity and understanding.

ANNEX V: BERRIES

2. SCOPE, USE AND DEFINITIONS, paragraph 5

Issue: Rephrase paragraph 5 to read as follows: “*This Annex covers specific guidance related to the **safety of berries**, from primary production to consumption, **including** berries that are intended to be consumed raw (e.g. fresh berries) and/or are processed without a microbiocidal step. »*

Rationale: The new sentence provides clarity.

10.2 Training programs, paragraph 36

Issue: Reconstruct the sentence to read as follows: “In addition to those listed in the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003), specific employee training programmes should include safe handling, transport and storage practices to ensure that berries are immediately cooled after harvesting ».

Rationale: This reconstruction provides clarity and understanding.