

CODEX ALIMENTARIUS COMMISSION



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Agenda Item 7

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON FOOD HYGIENE

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COMMENTS ON THE PROPOSED DRAFT ANNEX ON MELONS TO THE CODE OF HYGIENIC PRACTICE FOR FRESH FRUITS AND VEGETABLES (CAC/RCP 53-2003) (At Step 3)

Submitted by: Australia, Brazil, Colombia, Guatemala, Honduras, Mexico, New Zealand, United States & Uruguay

AUSTRALIA

Australia wishes to provide the following comments with regard to CX/FH 11/43/7 Proposed Draft Annex on Melons to the Codex of Hygienic Practice for Fresh Fruits and Vegetables

General Comments

Australia considers that the draft Annex on Melons is very comprehensive and congratulates the working group on the work completed to date. The document complements both the main Code of Hygienic Practice for Fresh Fruit and Vegetables (CAC/RCP 53-2003) and the other Annexes. Australia agrees that the entire Code and all annexes should be reviewed by the Committee to ensure consistency and remove duplication.

Additionally, Australia notes that section 7 -Establishment: Personal Hygiene of the Code has not been included in this document and suggests inclusion and reference to the *General Principles of Food Hygiene*.

Australia recognises that once a melon is contaminated with pathogens, removing or killing the pathogen is difficult. Prevention of microbial contamination along all steps in the production and distribution chain is necessary. Australia notes that safe production, distribution and handling of fresh melons depend on many factors and the efforts of many people in the distribution chain. Australia considers that the draft Annex provides adequate coverage of the required factors.

Specific Comments

3.1.2 Wild and domestic animals and human activity (Page 6)

“Many animal species (e.g. insects, birds, amphibians, chickens, feral pigs, ~~and~~ domestic or wild dogs and livestock such as cattle and sheep) including humans that may be present in the production environment are known to be potential carriers of foodborne pathogens. Animals are a

common source of contamination of surface water that may be used for irrigation. The following should be considered:

Rationale:

Australia considers that cattle and sheep, or livestock, should be included as having the potential to carry foodborne pathogens, especially if production sites for melons are in close proximity to land used for livestock.

3.2 Hygienic primary production of melons (Page 7)

Australia suggests the following amendment to dot point 3 of section 3.2:

“Ensure that employees follow good hygienic practices (especially hand washing ~~and the use of clean gloves~~, prior to handling melons) when turning melons on the cups or during harvesting operations.”

Rationale:

Australia is concerned about the reference to the use of clean gloves in dot point 3 of 3.2 and questions the feasibility and practicality of the proposed guidance. The incorrect use of disposable gloves can compromise product safety e.g. food handlers are often seen using them to protect their hands, rather than protecting the foods they are handling. Food handler often wear the same pair of gloves for food handling and other tasks; this is not good hygienic practice.

Australia notes that dot point 3 Section 3.2.3 - Personnel health, hygiene and sanitary on page 9 discusses the documenting procedures for use of gloves in the field. Australia acknowledges that this document aims to provide useful guidance to all countries, and therefore suggests examples be provided regarding situations where the use of reusable gloves would be appropriate. Australia considers that the use of reusable gloves is not appropriate for food handling. Food safety training for production handlers should include guidelines for hand washing and the appropriate use of disposable gloves when necessary.

Australia suggests the following amendment to dot point 3 of section 3.2.3 on page 9:

“If gloves are used, a procedure for glove use in the field should be documented and followed. ~~If the gloves are reusable, they should be made of materials that are easily cleaned and disinfected, and they should be cleaned regularly and stored in a clean area. If disposable gloves~~ **Only new disposable gloves should be used, they should be discarded when they become torn, soiled, or otherwise contaminated or every 30 minutes after continuous use on the same job. If changing to a new task the gloves should be changed. Disposable gloves should never be washed and reused for further use.**”

3.2.1.1 Water for Primary Production, first paragraph, last sentence (Page 7)

“~~It is recommended that g~~ Growers **should** assess and manage the risk posed by these waters as follows:”

Rationale:

Use of the word “should” is consistent with that used in Annex III for leafy vegetables and conveys a stronger direction to growers than the word “recommend”. Australia considers that it is not just recommended but essential that growers assess the risk posed by water as this is a major source of contamination.

3.2.1.1 Water for Primary Production, last dot point (Page 7)

“Frequency of testing should depend on the **risk of contamination of the** source of the irrigation water (~~less for adequately maintained deep wells, more for surface waters~~) and the risks of

environmental contamination, including intermittent or temporary contamination (e.g., heavy rain, flooding, etc.).”

Rationale:

Australia considered this point presupposed the outcome of the risk analysis, i.e. that deep wells are less of a risk than surface water. In some cases surface water may be more contaminated than deep wells. The suggested amendment removes this.

3.2.3.1 Personal hygiene and sanitary facilities

Square bracketed dot point regarding use of hand wipes.

“[In situations when clean, running water is unavailable, the use of **anti-bacterial** hand wipes along with hand sanitizer could be considered.]”

3.3.1 Prevention of cross-contamination, 3rd dot point

“Proper cleaning and disinfection of equipment should be done since **improper use of** knives, ~~if improperly used,~~ can wound melon rinds and provide a point of entry for contaminants that may be in soil and water.”

Rationale:

Suggested amendment improves readability of sentence.

3.3.1 Prevention of cross-contamination, 2nd last dot point

“Train agricultural workers to recognize and not harvest **damaged** melons ~~that have mechanical damage.~~”

Rationale:

Removing the reference to mechanical damage, acknowledges that damage may occur to melons through means other than just mechanical, ie: splits, damage from animals, birds or insects.

3.4.2 Cleaning procedures and methods (Page 11)

Australia suggests the following amendment to the first paragraph.

“Cleaning and disinfection programs should not be carried out in a location where the rinse water might contaminate melons **or water sources.**”

Rationale:

Australia considers care must be taken to protect not only the melons but the water sources used on and around the melons.

4.2.1 Design and Layout (Page 11)

“It is important to consider the sanitary design and layout for packing/processing equipment and the establishment because of the seasonal nature of the melon harvest. Packing/processing establishment operations may be used only a few months of the year and thus **may** be dormant for many months, leaving them susceptible to pest infestations, **or may have alternative uses that are not compatible with the hygienic storage of melons.** When dormant, packing/processing establishments should be appropriately protected from pest infestations. Their design should allow thorough cleaning before the start of the season.”

Rationale:

Section 4.2.1 discusses the use of Packing / Processing establishments and operations that are only used for a few months a year and that may lay dormant for many months leaving them susceptible to pest

infestations. Australia suggests that in some cases such establishments may not lay dormant but may have alternative uses. If these uses are not compatible with the hygienic storage of melons then the facility will also need to be cleaned.

5.2.2.1 *Post-harvest water use (Page 12)*

Australia suggests that “Post-harvest water” should be referred to as “water postharvest” and recommends this change throughout the document.

“5.2.2.1 Post-harvest water use-Use of water postharvest

Water is often used in dump tanks to transport melons from field containers into the packing or processing establishment. If the temperature of the water in the dump tank is cold and the internal temperature of the melons is hot from field heat, a temperature differential is created that may aid in the infiltration of microbial pathogens into the rind and/or the edible portion of the fruit. The following should be considered when using ~~post-harvest water~~ **postharvest:**”

5.2.2.1 *Post-harvest water use, 1st dot point (Page 12)*

~~“Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.”~~

Rationale:

Deletion of this dot point as it is a repeat of a dot point contained at 4.4.2.

5.2.2.1 *Post-harvest water use, 2nd dot point (Page 12)*

“Clean water should be used in dump tanks. **Dump tank water should have sufficient levels of antimicrobial agents to reduce the potential risk of cross contamination. The primary purpose of the water disinfectant is not to clean the melons but rather to prevent the water from becoming contaminated should pathogens be introduced into the water from the melon skins.** Antimicrobials **in the dump water** may reduce, but will not eliminate microbial pathogens if present **on the melon skins.**, as they are primarily used to **Their primary use is to** disinfect the water.”

Rationale:

The suggested amendment makes it clear that the reference is to microbial pathogens present in the water.

5.2.2.2 *Post-harvest water use, 1st dot point (Page 12)*

~~“Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.”~~

Rationale:

Deletion of this dot point as it is a repeat of a dot point contained at 4.4.2.

5.2.2.3 *Cooling melons, 3rd dot point (Page 13)*

“If water is used for cooling and is recirculated, **disinfectants should be used,** it should be evaluated and monitored to ensure ~~that disinfectant~~ levels are sufficient to reduce the potential risk of cross-contaminating melons.”

Rationale:

Wording is clearer that disinfectant is used and that the levels are sufficient to reduce possible contamination.

5.2.2.5 *Cutting, slicing and peeling melons, 2nd dot point (P13)*

In the last line of the second dot point in section 5.2.2.5 there is a typographical error; “Stream” should be replaced with “steam”.

5.2.2.5 *Cutting, slicing and peeling melons, last dot point (Page 13)*

“It is recommended that pre-cut melons should be **wrapped/packaged and** refrigerated as soon as possible and distributed under refrigeration temperatures (i.e., 4°C or less).”

Rationale:

Covering cut surfaces of melons will reduce the risk of cross-contamination.

5.2.3 *Microbiological and other specifications, final sentence (Page 13)*

“Trend analysis of testing data should be undertaken to evaluate the effectiveness of food safety ~~control~~ **management** systems.”

Rationale:

Australia suggests the term “food safety control systems” should be replaced with the term “food safety management systems”, as the term “food safety management systems” encompasses a wider range of activities and includes control measures.

5.7 *Documentation and records, 1st paragraph, last sentence (P14)*

“The description should include, but is not limited to, the following: an evaluation of the production site, **distribution systems for water used pre-harvest and postharvest** ~~water and distribution system~~, manure use and composting procedures, personnel illness reporting policy, sanitation procedures and training programs.”

Rationale:

Australia suggests that in section 5.7, where reference is made to “water and distribution system”, mention should be made of pre-harvest and postharvest water.

10.2 *Training programs (Page 15)*

“Refer to the General Principles of Food Hygiene and the Code of Hygienic Practice for Fresh Fruits and Vegetables. In addition:

10.2 Training programs”

Rationale:

Australia considers the success of a food safety management plan depends on adequate training of all people involved. Australia considers that a food safety training program for people who handle melons from production to distribution should focus on preventing faecal contamination of the melons from human hands, animals, water and soil that may come into contact with the melon skins and flesh. Australia notes that information about training in Section 10, on page 15, of the draft Annex is useful. Australia suggests that further emphasis could be placed on training in this section by referring to Section 10 (Training) of the *Code of Hygienic Practice for Fresh Fruit and Vegetables (CAC/RCP 53-2003)* and the *General Principles of Food Hygiene*.

BRAZIL

Brazil congratulates the drafting group led by Japan for the advances obtained and the efforts to grant an objective approach to the document. Continuing the revision of the document, the alterations in the items described below are suggested.

SPECIFIC COMMENTS

3.1 Environmental hygiene (page 2)

We suggest to exclude the sentence “In addition, melons grown in warm, humid conditions may favor growth and survival of foodborne pathogens” in the first paragraph as high humidity are not an ideal weather conditions to growing melons¹. Additionally, according to Section 3.1 of the Code of Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003), growing or adjoining sites should be previously analysed for contaminants of concern.

Potential sources of environmental contamination should be identified prior to production activities. This is important because contamination that occurs in the field may not be removed during subsequent steps. ~~In addition, melons grown in warm, humid conditions may favor growth and survival of foodborne pathogens.~~

Growers should take steps to minimize the potential for contamination from any sources identified.

3.2.3.1 Personnel hygiene and sanitary facilities (Page 9)

Brazil does not support the recommendation in square brackets in the last bullet point of this section, as personal hygiene facilities should be available to ensure that an appropriate degree of personal hygiene can be maintained, including supply of potable or clean water, to avoid contaminating food. This proposed sentence is not consistent with Section 4.4.4 e 7.3 of the Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969, Rev. 4 (2003)).

~~• [In situations when clean, running water is unavailable, the use of hand wipes along with hand sanitizer could be considered].~~

3.3.1 Prevention of cross-contamination (Page 10)

Consider to exclude the first bullet point, as the proposed recommendation not indicate clearly a measure to prevent cross-contamination and another hygiene provision related to field contamination are covered by Section 3.3.1 of the Code of Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003).

Specific control methods should be implemented to minimize the risk of cross-contamination from microorganisms associated with manual harvesting methods. The following should be considered:

~~• The field should be evaluated for the presence of hazards or contamination prior to harvest to determine if the field melons should be harvested.~~

3.3.2 Storage and Transport from the production site to the packing/processing facility (Page 10)

Consider to replace “its own” to “written” to harmonize with the adopted hygiene provision in Section 5.7 of the Code of Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003).

¹Manual de Segurança e Qualidade para a Cultura do Meloeiro (<http://www.cnpat.embrapa.br/frutas/appcc.html>)
Cultivo de melão - manejo, colheita, pós-colheita e comercialização (http://www.senar.org.br/atividades/download/Cartilha_melao_131.pdf)

Each transporter should have ~~written its own~~ SOP for shipping containers/trailers to confirm that they are clean, sanitary and in good structural condition.

5.2.2.1 Post-harvest water use (Page 12)

Consider to delete the first bullet point, as the proposed hygiene provisions is already covered by fifth bullet point in Section 4.4.2 Drainage and waste disposal of the Code of Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003)

Water is often used in dump tanks to transport melons from field containers into the packing or processing establishment. If the temperature of the water in the dump tank is cold and the internal temperature of the melons is hot from field heat, a temperature differential is created that may aid in the infiltration of microbial pathogens into the rind and/or the edible portion of the fruit. The following should be considered when using post-harvest water:

~~• Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.~~

Consider to insert the sixth bullet point below the fourth bullet point, as both hygiene provisions are related to water infiltration into the rind and/or the edible portion of the melon.

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

- Water temperatures should be higher than the internal temperatures of melons, so as to minimize the risk of water infiltration.

Consider to delete the last bullet point, as according to section 5.2.2.1 of the Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003), the quality of water used should be dependent on the stage of the operation.

~~• If melons receive a wash treatment, the wash water should be potable.~~

5.2.2.2 Chemical treatments (Page 12)

Consider to delete the first bullet point, as the proposed hygiene provisions is already covered by fifth bullet point in Section 4.4.2 Drainage and waste disposal of the Code of Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003).

Fungicides may be applied to melons by use of an aqueous spray or immersion to extend the post-harvest life of the fruit. The following are recommended:

~~• Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.~~

Consider to include “preferably potable water” in the second bullet point to be consistent with Section 5.2.2.1 Definition of the Code of Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003) and Section 5.2.2.2 of the Annex on Fresh Leafy Vegetables.

- Clean ~~water~~ or **preferably potable water** should be used in water-based chemical treatments to ensure that the water used is of sufficient microbial quality for the intended use and does not contaminate the melons with foodborne pathogens.

Consider to delete the sentence “ensure that the water used is of sufficient microbial quality for the intended use and does not contaminate the melons with foodborne pathogens” in the second bullet point, as clean water is already defined in Section 2.3 Definition of the Code of Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003).

- Clean water or preferably potable water should be used in water-based chemical treatments to ensure that the water used is of sufficient microbial quality for the intended use and does not contaminate the melons with foodborne pathogens.

5.2.2.3 Cooling melons (Page 13)

Consider to remove the fifth bullet point in this section, which are related to cleaning procedures and cross-contamination, and include the provision in Section 5.2.4 Microbiological cross-contamination of this proposed Annex.

- ~~Cooling equipment should be cleaned and disinfected on a regular basis according to written procedures to ensure that the potential for cross-contamination is minimized.~~

5.2.2.5 Cutting, slicing and peeling melons (Page 13)

Consider to remove the third and fourth bullet points in this section, which are related to cleaning procedures and cross-contamination, and include the provision in Section 5.2.4 Microbiological cross-contamination of this proposed Annex.

- ~~Cutting or peeling knife blades should be cleaned and disinfected on a regular basis according to written procedures to reduce the potential for cross-contaminating melons during the cutting or peeling process.~~
- ~~Knife blade disinfecting solutions should be monitored to ensure that the disinfectant is present at sufficient levels to achieve its intended purpose and does not promote the potential for cross-contamination.~~

5.3 Incoming material requirements (Page 13)

Consider to provide support, as a reference in footnote, to the presence of foodborne pathogens in melons with decay or damage, as the hygiene provisions provided in Section 3 Primary production of this proposed Annex should be implemented by businesses operating primary production to ensure the effectiveness of food safety control systems.

- Avoid using whole melons that have visible signs of decay or damaged rinds (e.g., mechanical damage or cracking) due to the increased risk of the presence of foodborne pathogens in melons with decay or damage.

5.7 Documentation and records (Page 14)

Consider to replace “business managing the melon primary production operation” to “businesses operating primary production” in the first paragraph to harmonize with the adopted provision in Section 3.2.3 of the Annex on Fresh Leafy Vegetables and of this proposed Annex.

Where practicable, a comprehensive written food safety control plan that includes a written description of each of the hazards identified in assessing environmental hygiene, as well as the steps that will be implemented to address each hazard, should be prepared by the **businesses operating primary production** ~~business managing the melon primary production operation~~. The description should include, but is not limited to, the following: an evaluation of the production site, water and distribution system, manure use and composting procedures, personnel illness reporting policy, sanitation procedures and training programs.

10.2 Training programs (Page 15)

Consider to include “where required” in the first paragraph to harmonize with the adopted provision in Section 10.2 of the Annex on Fresh Leafy Vegetables and ensure the same flexibility.

Where required, personnel involved in primary production, packing, processing or transport operations of melons should receive training appropriate to their tasks and should be periodically assessed while performing their duties to ensure tasks are being completed correctly. Training should be delivered in a

language and manner to facilitate understanding of what is expected of them and why, and should emphasize the importance of using hygienic practices. A well-designed training program considers the barriers to learning of the trainees and develops training methods and materials to overcome those barriers.

COLOMBIA

Colombia is pleased to submit the following comments on the **Proposed Draft Annex on Melons to the Code of Hygienic Practice for Fresh Fruits and Vegetables Annex IV: Annex on Melons** at Step 3 of the Procedure, circulated by the Secretariat of the Codex Alimentarius Commission.

We herein refer to the document as it appears in Appendix II of CX/FH 11/43/7, based on the Spanish version.

I. 2.1 Scope – Paragraph 1

During post-harvesting melons are subjected to various treatments, including the use of disinfectants that come into contact with the product.

“This Annex covers specific guidance related to the production, harvesting, packing, processing (e.g., trimmed, sliced and/or diced), storage, distribution, marketing, and consumer use of fresh melons that are intended to be consumed without further microbiocidal steps.”

Proposal: This Annex covers specific guidance related to the production, harvesting, **post-harvesting**, packing, processing (e.g., trimmed, sliced and/or diced), storage, distribution, marketing, and consumer use of fresh melons that are intended to be consumed without further microbiocidal steps.

II. 2.3 Definitions – Paragraph 2

Ground spots (*mancha de superficie*) can be caused by sunstroke, shades, attacks by pests, among other climatic and morpho-physiological factors.

Anyway, the translation into Spanish is not appropriate; it should be *mancha con tierra*.

“Ground spot means the point of direct contact where melons sit directly on the soil or on top of thin plastic mulch.”

Proposal: ~~Ground~~ **Contact** spot means the point of direct contact where melons sit directly on the soil or on top of thin plastic mulch.”

III. 3.1.1 Location of the production site – Paragraph 3

If the fruit is harvested early, when it is still climacteric and does not have the characteristics needed to develop the physiological ripening processes, the product would be lost completely.

“The effects of some environmental events, such as heavy rains, cannot be controlled. For example, heavy rains may increase melons' exposure to pathogens if soil contaminated with pathogens splashes onto melon surfaces. . Consideration should be given to harvesting earlier if the weather forecast for heavy rain or delaying harvest and performing extra washing when heavy rains have recently occurred.”

Proposal: The effects of some environmental events, such as heavy rains, cannot be controlled. For example, heavy rains may increase melons' exposure to pathogens if soil contaminated with pathogens splashes onto melon surfaces. Consideration should be given to harvesting earlier (**provided that fruit is ripe enough to continue its development**) if the weather forecast for heavy rain or delaying harvest and performing extra washing when heavy rains have recently occurred.

IV. 3.2.3.1 Personnel hygiene and sanitary facilities – Paragraph 6

The use of disposable hand wipes along with hand sanitizer is not enough to ensure that personnel's hands are safe; since during work high hand contamination may occur with organic matter, which is

appropriately removed using water and soap. Hand wipes are not appropriate means of removing organic load from hands, considering they may become means of recontamination, which may lead to disinfectant effectiveness reduction.

“[In situations when clean, running water is unavailable, the use of hand wipes along with hand sanitizer could be considered]”

Proposal: Delete.

V. 3.3 Handling, storage and transport – Paragraph 1

"Internalization" is the term used to refer to this phenomenon, as infiltration is associated with the passage of a liquid through the pores of a solid.

“(…) to minimize stem scar and rind infiltration, such as during washing operations, of foodborne pathogens into the edible portions of melon flesh. (…)”

Proposal: “(…) to minimize stem scar and rind **internalization**, such as during washing operations, of foodborne pathogens into the edible portions of melon flesh. (…).

VI. 3.3.1 Prevention of cross-contamination – Paragraph 5

The translation is not in agreement with the English version.

“Los recipientes de recolección que entran en contacto con los melones no deberían utilizarse para ningún otro fin que no sea retener el producto (p. ej., no deberían tener efectos personales, desechos, etc.).”

Proposal: Los recipientes de recolección que entran en contacto con los melones no deberían utilizarse para ningún otro fin que no sea retener el producto (p. ej., no deberían tener ~~efectos~~ **objetos** personales, desechos, etc.).

VII. 3.4.1 Cleaning programs – Paragraph 1

The health of implements should be ensured in order to prevent cross-contamination.

“Harvesting equipment, including knives, pruners, machetes, that come into direct contact with melons should be cleaned and disinfected at least daily or as the situation warrants.”

Proposal: Harvesting equipment, including knives, pruners, machetes, that come into direct contact with melons should be cleaned and disinfected ~~at least daily or as the situation warrants~~ **with the daily frequency necessary based on the use.**

VIII. 5.1 Control of food hazards – Title

The text of the paragraph refers to the practices that need to be conducted in order to prevent cross-contamination.

“Control of food hazards”

Proposal: Control of ~~food hazards~~ **cross-contamination.**

IX. 5.2.2.1 Post-harvest water use – Paragraph 1

"Internalization" is the term used to refer to this phenomenon, as infiltration is associated with the passage of a liquid through the pores of a solid.

“(…) a temperature differential is created that may aid in the infiltration of microbial pathogens into the rind and/or the edible portion of the fruit. (…)”

Proposal: (...) a temperature differential is created that may aid in the **internalization**–of microbial pathogens into the rind and/or the edible portion of the fruit. (...)

GUATEMALA

General Comments

Guatemala congratulates the working group that prepared the proposed draft annex and appreciates the effort and the work conducted. However, in revising the document we have noted that a proposed draft annex more specific to melon management, is needed. For example, appropriate temperature management in melon transport and storage, which is critical in this commodity, is not mentioned or suggested. Suitable characteristics for harvest are not referred to either, and emphasis should be placed on certain melon management practices and workers' training.

Specific Comments:

Introduction

Paragraph 2 reads as follows:

Like other fresh fruits and vegetables that are eaten raw, the safety of melon products depends on maintaining good hygienic practices along the food chain during primary production, packing, processing, retail, and at the point of consumption.

We suggest the deletion of the phrase "melon products" and include simply "melon safety" as it is more general and does not only cover melon products but melons themselves. For drafting purposes, "las" should be added before "buenas prácticas de higiene" (Spanish version). We also suggest the deletion of the whole paragraph after "food chain" as the food chain covers all these steps and is understood; now if all these items are to be added to be more specific, then the words "which includes" after "food chain" should be added, and the word "transport" should be added after "processing" as it is part of the food chain too and is, like other processes, important for melon, since it should be in optimum condition for delivery. The paragraph should be redrafted as follows:

Like other fresh fruits and vegetables that are eaten raw, the safety of ~~melon products~~ melons depends on maintaining good hygienic practices along the food chain ~~during primary production, packing, processing,~~ **TRANSPORT**, retail, and at the point of consumption.

Or

Like other fresh fruits and vegetables that are eaten raw, the safety of ~~melon products~~ melons depends on maintaining good hygienic practices along the food chain which includes primary production, packing, processing, transport, retail, and at the point of consumption

The third sentence in paragraph 2 reads as follows:

The major risk factors that have been identified as contributing to melon outbreaks include: poor temperature control (including extended holding at ambient temperature and poor cold storage), infected food handlers and poor personal hygiene. As fresh and pre-cut melon products move through the food chain, there is also the potential for the introduction, growth and survival of foodborne pathogens.

We suggest that the paragraph also includes cross contamination as it is a cause of contamination in melon, whether during transport due to poor hygiene, during unloading or retail outlet or during processing for consumption, which should be placed in brackets as examples. For drafting purposes, all should be written either in the plural or in the singular; when referring to "productos de melón frescos" (Spanish version), the document should read "de productos de melones frescos o de productos de melón fresco". The paragraph should be redrafted as follows:

The major risk factors that have been identified as contributing to melon outbreaks include: poor temperature control (including extended holding at ambient temperature and poor cold storage), cross contamination (which includes poor hygiene practices for personnel, transport, retail outlet, utensils and consumer) ~~infected food handlers and poor personal hygiene~~. As fresh and pre-cut melon products move through the food chain, there is also the potential for the introduction, growth and survival of foodborne pathogens.

3.1 Environmental Hygiene

The paragraph reads as follows:

Potential sources of environmental contamination should be identified prior to production activities. This is important because contamination that occurs during production may not be removed during subsequent steps. In addition, melons grown in warm, humid conditions may favor growth and survival of foodborne pathogens. Growers should take steps to minimize the potential for contamination from any sources identified.

We suggest that this paragraph includes not only the sources of environmental contamination of the commodity, but also the potential contamination of the commodity towards the environment with the harvest and the use of fertilizers and pesticides. The inclusion of an environmental impact study should be requested as it is part of the social responsibility towards the environment we should all have and profess.

Paragraph 3.2 Hygienic primary production of melons

The paragraph reads as follows:

Special consideration should be given to production practices specific to melon production because of the unique characteristics of the melons and the rind of some melons

There is redundancy because "production" appears twice, and because the word "melon" appears three times in the same sentence. We suggest a better drafting as follows:

Special consideration should be given to production practices ~~specific to melon production~~ for melons because of their unique characteristics, such as the rind ~~melons and the rind of some melons~~

Third bullet point:

Ensure that employees follow good hygienic practices (especially hand washing and the use of clean gloves, prior to handling melons) when turning melons on the cups or during harvesting operations.

For drafting purposes and better understanding, we suggest: Adding the preposition "and" instead of "or" before the phrase "during harvesting operations" since turning and harvesting operations are two different activities.

Ensure that employees follow good hygienic practices (especially hand washing and the use of clean gloves, prior to handling melons) when turning melons on the cups and during harvesting operations.

3.2.1.1 Water for primary production (Water quality)?

First bullet point

The paragraph reads as follows:

Assess the potential for microbial contamination (e.g., from livestock, human habitation, sewage treatment, manure and composting operations) and the

We suggest the deletion of the word livestock and its replacement with "livestock or agricultural activities", which is broader and covers everything related to crops and livestock production.

Assess the potential for microbial contamination (e.g., from ~~livestock~~, agricultural activities, human habitation, sewage treatment, manure and composting operations) and the.....

3.2.1.1.1 Water for irrigation

We suggest using "Irrigation characteristics" as a subheading as the section discusses methods and forms of irrigation more than water for irrigation. Details are provided in the previous section.

3.2.1.1.1 ~~Water for irrigation~~–Irrigation characteristics

3.2.1.2 Manure, biosolids and other natural fertilizers

We suggest the addition of a bullet point indicating whether composting will be used, as it must be certified by specialized institutions to avoid any contamination due to poor management.

3.2.3 Personnel health, hygiene and sanitary facilities:

The paragraph reads as follows:

All agricultural workers should properly wash their hands using soap and clean, running water before handling melons, particularly during harvesting and post-harvest handling. Agricultural workers should be trained in proper techniques for hand washing and drying.

Delete the second sentence from the second bullet point as there is a specific section for training, where this sentence should be included.

All agricultural workers should properly wash their hands using soap and clean, running water before handling melons, particularly during harvesting and post-harvest handling. ~~Agricultural workers should be trained in proper techniques for hand washing and drying.~~

3.2.3.1 Personnel hygiene and sanitary facilities

The first bullet point reads as follows:

Provide areas away from the field and packing lines for agricultural workers to take breaks and eat.

Add areas to store personal belongings.

Provide areas away from the field and packing lines for agricultural workers to take breaks, eat and store personal belongings.

The second bullet point reads as follows:

All agricultural workers should be trained in proper use of hygiene facilities. Training should include toilet use, proper disposal of toilet paper or equivalent, and proper hand washing and drying procedures.

Delete this paragraph as there is a section on training, which should state that workers need be trained.

~~All agricultural workers should be trained in proper use of hygiene facilities. Training should include toilet use, proper disposal of toilet paper or equivalent, and proper hand washing and drying procedures.~~

Paragraph 2 reads as follows:

As far as possible, sanitary facilities should be located close to the field and readily accessible to the work area.

Specify that they should be close to, but never inside the field.

As far as possible, sanitary facilities should be located close to the field, but never inside, and readily accessible to the work area.

The third bullet point of paragraph 2 reads as follows:

Facilities should include clean running water, soap, toilet paper or equivalent, and single use paper towels or equivalent.

We suggest stating that sanitary facilities should be duly supplied, from which it is understood that they should have water, soap, paper, etc..., so the bullet point should be redrafted as follows:

Facilities should include clean running water and be duly supplied.

The fourth bullet point of paragraph 2 reads as follows:

[In situations when clean, running water is unavailable, the use of hand wipes along with hand sanitizer could be considered].

Delete this bullet point as hand wipes do not successfully remove or eliminate dirt from hands like washing with water and soap. This paragraph should not be left as a suggestion.

~~[In situations when clean, running water is unavailable, the use of hand wipes along with hand sanitizer could be considered].~~

3.2.4 Equipment associated with growing and harvesting

Delete the first bullet point since there is a section on training, and it should be moved there.

~~• Agricultural workers should be trained to follow the SOPs.~~

3.3 Handling, storage and transport

It should include or specify melon temperature management during both transport and storage. If this is a standard specific to melon, it should consider the special management this commodity should have, and temperature is an important aspect, as is humidity percentage.

3.3.1 Prevention of cross-contamination

Add a sixth bullet point indicating that melon transport should be suitable and that vehicles should only be used to transport melons, thus avoiding cross contamination.

The transportation used for melon should be in optimum hygiene conditions.

3.3.2 Storage and Transport from the production site to the packing/processing facility

The second bullet point reads as follows:

Fresh melons should not be transported in vehicles used previously to carry animals, animal manure or biosolids ~~unless they are adequately cleaned and disinfected~~. Receptacles and vehicles and/or containers, when being used to transport melons, are not to be used for transporting anything which may result in contamination of melons.

Delete the second sentence since there is much risk due to melon texture; only laboratory analysis through sampling can ensure that transport is manure bacteria-free, which poses additional expenses for companies, which is why we propose not to include it in the paragraph.

4.4 Facilities

In the second bullet point, more emphasis should be placed on floors being made of a suitable easy-to-clean material.

Delete the third bullet point as there is a section on training only. Move the bullet point to this section.

- Floors should be kept as dry as possible using appropriate methods. Floors being made of a suitable material that is easy to clean and disinfect.
- ~~Food handlers should have proper training to remove — standing water or push standing water to the drains~~

5.2.2.2 Chemical treatments

Delete the word used in the first sentence of the second bullet point for a better understanding and to avoid repetition since the word "used" appears at the beginning of the sentence.

Clean water should be used in water-based chemical treatments to ensure that the water ~~used~~ is of sufficient microbial quality for the intended use and does not contaminate the melons with foodborne pathogens.

5.5.3 Ice

The paragraph reads as follows:

For cooling or keeping melons cold during transport and distribution, putting ice on the top of melons should be avoided since this practice is not hygienic. Ice melts at refrigeration temperatures such that water will drip from one melon to another, potentially cross-contaminating the melons. It is recommended that an alternative means of cooling be used with melons to avoid the risk of cross-contamination, both within and among the pallets of melons.

Delete this paragraph as it is not a practice performed in the country; besides, it reads "putting ice on the top of melons should be avoided". If there is too much risk, it is a practice that should by no means be allowed, or suggested. Further, emphasis should be placed on ice being made of potable water.

~~For cooling or keeping melons cold during transport and distribution, putting ice on the top of melons should be avoided since this practice is not hygienic. Ice melts at refrigeration temperatures such that water will drip from one melon to another, potentially cross-contaminating the melons. It is recommended that an alternative means of cooling be used with melons to avoid the risk of cross-contamination, both within and among the pallets of melons.~~

5.7 Documentation and records

Add more examples:

- Cleaning programs records
- Vehicle washing records and exclusive use for melon transport
- Disposable glove use
- Temperature records
- Water chlorination records

5.8

The paragraph reads as follows:

In the event of a foodborne illness outbreak associated with melons, maintaining appropriate records of production, processing and distribution may help to identify the source of contamination in the melon food chain and facilitate product recalls.

Add the word "packing" after "processing", as packing contains information related to melon production too. Therefore, packing records should also be kept.

In the event of a foodborne illness outbreak associated with melons, maintaining appropriate records of production, processing, packing and distribution may help to identify the source of contamination in the melon food chain and facilitate product recalls.

10.2 Training Programmes

Include more considerations in this section.

- Training in personal hygiene and hand washing in fields
- Training in harvesting practices
- Training in harvesting practices
- Training in melon storage temperatures
- Training in hygiene and disinfection of tools and working materials
- Training in hygiene of sanitary services and facilities
- Training in health

Add an additional section to HACCP

HONDURAS

Honduras appreciates the opportunity to submit comments on the PROPOSED DRAFT ANNEX ON MELONS TO THE CODE OF HYGIENIC PRACTICE FOR FRESH FRUITS AND VEGETABLES (CAC/RCP 53-2003) and acknowledges the effort of the working group and its member countries.

With all due respect, Honduras believes that in situations such as the temperature differential between the fruit and storage pile water; if there are studies that have determined how many degrees this difference could be, it would be very important to include this in the document and to make it clear to growers so that they are aware of the temperature ranges that they will need to monitor.

Again, we appreciate the opportunity to participate through comments on this document.

SECTION 3 - PRIMARY PRODUCTION

3.1 Environmental Hygiene

A risk analysis or risk assessment of Potential sources of environmental contamination should be ~~identified~~ realized prior to production activities.

These vectors include, but are not limited to, humans, domestic and wild animals, or indirectly from contaminated water, insects, or fomites such as dust, in this case, a natural windbreak such as trees and/or vegetation could be useful, provided they are species that do not attract birds, possibly acting as a spray barrier as well.

3.1.2 Wild and domestic animals and human activity

Many animal species (e.g., reptiles, insects, birds, amphibians, chickens, feral pigs, and domestic or wild dogs)

(e.g., presence of animal faeces, large areas of animal tracks, or burrowing). Where such evidence exists, growers should evaluate the risks and whether the affected ~~sections~~ areas, lot and/or furrow of the melon production sites contaminated with faecal material should be harvested; all harvest personnel should have proper training to take these decisions.

3.2 Hygienic primary production of melons

- In the third bullet point: Ensure that employees follow good hygienic practices (especially hand washing and disinfecting and the use of clean gloves, prior to handling melons) the use of gloves may depend on the variety of melon and the activity to be conducted.

- **The following text is suggested for inclusion: After the harvest, remove and properly store plates; if they are to be reused, growers should have a SOP for their cleaning and disinfection as appropriate.**

3.2.1.1 Water for primary production

Perform a risk analysis of potential sources of microbial contamination

3.2.3 Personnel health, hygiene and sanitary facilities

All agricultural workers should properly wash **and disinfect** their hands using soap and clean, running water before handling melons, particularly during harvesting and post-harvest handling.

Non-essential persons and casual visitors, particularly

children, **(16 years old, for daytime work in agricultural or livestock farms,)** should not be allowed in the harvest area as they may present an increased risk of contamination.

3.2.3.1 Personnel hygiene and sanitary facilities

For worker convenience, these areas should provide access to toilet and hand-washing facilities **as well as a dustbin with a lid**, so agricultural workers can practice proper hygiene.

Training should include toilet use, proper disposal of toilet paper or equivalent, and proper hand washing and **disinfection, as well as** drying procedures.

Facilities should be present in sufficient number to accommodate personnel (e.g., ~~1 per 10 people~~ **1 per 20 people**) and be appropriate for both genders if the workforce contains males

~~[[In situations when clean, running water is unavailable, the use of hand-wipes along with hand sanitizer could be considered]].~~

The first bullet point in section 5.2.2.1 is repeated in section 5.2.2.2, again in the first bullet point.

5.2.4 Microbiological cross-contamination

Where wet dump stations are used for unloading field containers,

the containers should not be directly immersed into dump tanks, **where they have been in direct contact with the soil**, to reduce the potential for product cross-contamination with field or road debris.

MEXICO

Mexico reiterates its commitment to Codex Alimentarius and appreciates the opportunity to submit comments on the Proposed Draft Annex on Melons to the Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003) (At Step 3).

GENERAL COMMENTS:

We have noted that the practices that are proposed in this text are very similar and in some cases a repetition of was those appearing in the Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003), so it would be advisable if the annexes to this code, including the annex being proposed as new work on tomatoes, could be integrated into it and stating only the practices specific to each commodity.

We suggest that the word "cantalupo" be replaced with "**cantaloup**" in the translation into Spanish, as it is an internationally used term.

We have noted that the terms "**padding**" and "**plastic pads**" are used interchangeably throughout the document. If these inputs are different depending on their use, we suggest that their use or application be clarified. If they have the same use, we suggest that the terminology used in the document be made consistent, so we recommend that the term "**plastic pads**" be used as its use is more clearly understood. We therefore request consistency in the use of this term in the translation into Spanish ("**almohadillas de plástico**").

If the use of gloves and hand wipes is accepted, the way in which both inputs will be disposed of should be indicated in order to prevent them from becoming sources of contamination.

The numbering should be revised as it is not correct.

SPECIFIC COMMENTS:

SUGGESTED CHANGES	RATIONALE
<p>INTRODUCTION Footnote 1. FAO report to the Codex Committee on Food Hygiene for the development of an Annex on Melons to the Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RPC 53- 2003).</p>	<p>As regards the footnote, we believe clarification on the date of publication or further reference on the mentioned FAO report is needed.</p>
<p>2.3 Definitions Mancha de superficie, significa el punto de contacto directo donde los melones se sientanasientan directamente sobre el suelo o encima de un mantillo de plástico delgado. Melones, en el presente documento, se refieren al cantaloupe cantaloupe (también conocido como <i>muskmelons</i> y <i>rockmelons</i>), melón de piel lisa (<i>honeydew</i>), sandía y variedades de melones, enteros y/o precortados</p>	<p>The word "asientan" is better understood than "sientan", applicable to the document in Spanish (translation issue). It is worth stating that the main reason for the development of this annex specific to melons, particularly cantaloupe (Family: <i>Cucurbitaceae</i>, Scientific name: <i>Cucumismelo</i>), was skin characteristics. It would therefore be unnecessary to include honeydew, watermelon and other melon varieties, as they would be considered to be lower risk and would be covered by the Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RPC 53- 2003).</p>
<p>3.2 Hygienic primary production of melons Third bullet point of section 3.2: <ul style="list-style-type: none"> Ensure that employees follow good hygienic practices (if the product is field-packed, greater care will be needed in especially hand washing and the use of clean gloves, prior to handling melons) when turning melons on the cups or during harvesting operations. </p>	<p>It is considered to include the word "hygienic" in this section, so we suggest it be deleted. In order to make the need for glove use during melon handling clearer, we believe it necessary to state that this practice should be used "if the product is field-packed, greater care will be needed in..." as the commodity will not be subsequently treated for a further cleaning step in which contamination could be reduced.</p>
<p>3.2.1.1.1 Irrigation methods Water for irrigation</p>	<p>We suggest that the name "Water for irrigation" be changed to Irrigation methods, as this section mainly discusses methods themselves, not the type of water suggested for us, which is already indicated in section 3.2.1.1 Water for primary production. We therefore suggest that it be removed from this section and moved before 3.2.1.2 Manure, biosolids and other natural</p>

	fertilizers, with the appropriate renumbering.
3.2.1.1.3 3.2.1.1.4 Water for harvesting and other agricultural uses	Renumber section 3.2.1.1.4 to 3.2.1.1.3
3.2.1.2 Manure, biosolids and other natural fertilizers Last bullet point of section 3.1.1.2: <ul style="list-style-type: none"> Use of untreated and/or partially treated manure, biosolids, and other natural fertilizers should not be used after plant emergence or after a transplant is put into the soil, unless it can be demonstrated that product contamination will not occur. 	<p>We suggest the following change for a better wording (Spanish version): “después del trasplante en el suelo.”</p> <p>We suggest the deletion of the last phrase in this paragraph, as it first imposes a limitation and then provides an opportunity to use untreated and/or partially treated, at a stage which is important to avoid commodity contamination.</p>
3.2.3.1 Personnel hygiene and sanitary facilities Second bullet point of section 3.2.3.1: <ul style="list-style-type: none"> All agricultural workers should be trained in proper use of hygiene facilities. Training should include toilet use, proper disposal of toilet paper or equivalent, and proper hand washing and drying procedures. 	This bullet point refers to the training that personnel should have, so we suggest that it be moved to SECTION 10 – TRAINING
3.3 Handling, storage and transport Written SOPs should be developed and implemented to ensure appropriate handling, storage and transport of melons.	We suggest that the word "written" be deleted from the second paragraph; it is redundant, as it is assumed that, being a procedure, it must be developed in writing and therefore printed.
3.3.1 Prevention of cross-contamination <ul style="list-style-type: none"> Proper cleaning and disinfection of equipment should be done since knives, if improperly used, can wound melon rinds and provide a point of entry for contaminants that may be in soil and water. When plastic pads padding is used with post-harvest handling equipment to prevent damage to melons, they it should be constructed of material that can be cleaned and disinfected. Ensure that plastic pads padding are is cleaned and disinfected before and during use . 	<p>In section 3.3.1, we suggest that the paragraph in the third bullet point be divided into two bullet points, referring only to proper cleaning and disinfection of equipment. It should be redrafted as follows: “Proper cleaning and disinfection of equipment should be done”. And the second idea will refer to melon damage: “avoid using knives improperly to prevent melon rind wounds and providing a point of entry for contaminants that may be in soil and water.”</p> <p>Furthermore, in the paragraph containing the concept of "padding", we suggest that it be changed to “plastic pads” (“almohadillas de plástico”) and that the term be used consistently in the translation into Spanish.</p>
SECTION 5 - CONTROL OF OPERATION 5.2.2.1 Post-harvest water use <ul style="list-style-type: none"> Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination. Clean water should be used in dump tanks. Antimicrobials may reduce, but will not eliminate microbial pathogens if present, as they are primarily used to disinfect the water. <ul style="list-style-type: none"> Where appropriate, the pH, soil (including organic) load, turbidity, water hardness, product throughput 	<p>In section 5.2.2.1 we suggest that the following paragraph be deleted: “Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination” as the information contained is not related to the subject addressed in this section.</p> <p>The paragraph that reads "• Clean water should be used in dump tanks. Antimicrobials may reduce, but will not eliminate microbial pathogens if present, as they are used" should be moved after the paragraph that reads: "• Where appropriate, the pH, soil (including organic) load,</p>

<p><u>capacity should be controlled and monitored to ensure the efficacy of the antimicrobial treatment.</u></p> <p><u>• Clean water should be used in dump tanks. Antimicrobials may reduce, but will not eliminate microbial pathogens if present, as they are used</u></p> <p>• If melons receive a wash treatment, the wash water should be potable, <u>provided that there is no subsequent treatment.</u></p>	<p>turbidity, water hardness, product throughput capacity should be controlled and monitored to ensure the efficacy of the antimicrobial treatment."</p> <p>In order to clarify the part of the process in which potable water is used, we suggest that the sentence that reads "<u>provided that there is no subsequent treatment</u>" be included at the end of the paragraph.</p>
<p>5.2.2.2 Chemical treatments Fungicides may be applied to melons by use of an aqueous spray or immersion to extend the post-harvest life of the fruit. The following are recommended:</p> <p>• Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.</p>	<p>In section 5.2.2.2 Chemical treatments, we suggest the deletion of the paragraph that reads "Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination" as the information provided in this paragraph is not related to chemical treatments.</p>
<p>5.2.2.5 Cutting, slicing and peeling melons</p> <p>• Melons should be washed with potable water before cutting or peeling.</p> <p>• Antes de cortar o aplicar cualquier otro proceso de elaboración, puede lograrse una reducción más de la contaminación microbiana al restregar el melón con un higienizador o aplicar un proceso alternativo de descontaminación de la superficie, tal como el uso de agua caliente, un chorro de agua agua corriente o algún otro tratamiento.</p>	<p>In section 5.2.2.5 Cutting, slicing and peeling melons, we suggest that "un chorro de agua" be changed to "agua corriente" in the Spanish translation.</p> <p>• Antes de cortar o aplicar cualquier otro proceso de elaboración, puede lograrse una reducción más de la contaminación microbiana al restregar el melón con un higienizador o aplicar un proceso alternativo de descontaminación de la superficie, tal como el uso de agua caliente, agua corriente o algún otro tratamiento.</p>
<p>5.2.4 Microbiological cross-contamination</p> <p>• Where dry dump stations are used for unloading field containers (e.g., bins, gondolas, trailers, or wagons), melon contact surfaces (including padding plastic pads materials to protect melons from physical damage) should be constructed of material that can be cleaned and disinfected.</p>	<p>In section 5.2.4 Microbiological cross-contamination in the paragraph where the concept of "padding" is used, we suggest that it be changed to "plastic pads" ("almohadillas de plástico"), as stated above, for consistency of the term used in Spanish.</p>
<p>5.3 Incoming material requirements</p> <p>• Avoid using whole melons that have visible signs of decay or damaged rinds (e.g., mechanical damage or cracking) due to the increased risk of the presence of foodborne pathogens in melons with decay or damage.</p>	<p>In section 5.3 Incoming material requirements We suggest that the word "whole" be deleted, as it seems as if damaged non-whole melons <i>could</i> be used.</p>

NEW ZEALAND

New Zealand would like to thank Canada and members of the physical working group for preparing the Proposed Draft Annex on Melons to the Code of Hygienic Practice for Fresh Fruits and Vegetables.

New Zealand would like to offer the following specific comments to the draft text:

Section	Proposed change	Rationale
Introduction, first paragraph	Melons, such as cantaloupe, watermelon, and honeydew, are ready-to-eat fruits which are often consumed without any further processing treatment that would eliminate or inactivate any pathogens present. Melons are consumed in a variety of ways (i.e. as melon, in beverages, in salads and as garnishes) alone, mixed with other foods in salads and other dishes and as garnishes.	NZ suggests that by saying 'consumed alone it may imply a person eating alone. The other changes may be better given as examples, rather than an exhaustive list. Further the inclusion of ready-to-eat and the last sentence from the second paragraph highlights that there are inherent risks associated with this product.
Introduction, 2nd paragraph, last sentence	Fresh melons are consumed without further processing treatment that would eliminate or inactivate pathogens, if present.	Delete this sentence as it has been moved and adapted for inclusion in the first paragraph
2.3	Ground spot means the point of direct contact where melons sit directly on the soil or on top of thin plastic mulch or pad.	To be more consistent with 3.2.
3.1.1	Consideration should be given to harvesting earlier if the weather forecast is for heavy rain or delaying harvest and performing extra washing when heavy rains have recently occurred.	Word missed.
3.2	Netted rind surfaces, in contrast to smooth rind surfaces, provide an environment where m Microbial pathogens may more easily adhere to, and survive on netted rind surfaces than smooth rind surfaces , and become more difficult to eliminate during post-harvest practices.	Making microbial pathogens the subject of the sentence makes for easier comprehension.
3.2.1.1	Growers should identify the sources of water used on farm (municipality, recycled water used , irrigation water , reclaimed wastewater, discharge water from aquaculture, well, open canal, reservoir, rivers, lakes, farm ponds, etc.).	Delete reference to irrigation water as this is a use of water rather than a source of water. Inserted comma between well and open canal.
3.2.1.1.1	Water for irrigation - 1 st bullet point Avoid direct water contact with the melon during irrigation, i.e. overhead irrigation methods, particularly with netted rind melons, because wetting the outer rind of melons increases the risk of pathogen contamination.	This change acknowledges that the risk of pathogen contamination is through direct water contact with the melon, and that overhead irrigation methods may not be the only method.
3.2.3.3	Personal cleanliness	NZ suggests that if gloves are worn they

	When personnel are permitted to continue working with cuts and wounds covered by water proof dressings, they should wear clean gloves to ...	should be 'clean'. This is consistent with wording in the final bullet point in 3.2 Hygienic primary production of melons.
3.3.1	Prevention of cross-contamination – last bullet point Dispose of culled melons in a way that melon culls will not attract animal and insect pests.	Simplifies the intent of the bullet point
5.2.2.1	Post-harvest water use, First bullet point • Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.	This bullet point is repeated from 4.4.2, and doesn't seem appropriate here.
5.2.2.1	Post-harvest water use, 4th bullet point Minimise or avoid fully submerging melons in older dump tank water [that is cooler than the internal temperature of the melon]. When submerged, water and pathogens are is more likely to infiltrate into the melons.	NZ suggests that the risk is microbial pathogen infiltration from the use of unclean water or by infiltration of pathogens on the surface, rather than water infiltration. The text has been placed in square brackets because this addition may not be required if the suggestion to move the 5 th bullet point is agreed.
5.2.2.1	Post-harvest water use, 5th bullet point Water temperatures should be higher than the internal temperatures of melons, so as to minimize the risk of microbial pathogen and water infiltration.	New Zealand suggests that this bullet point should be elevated in importance to come first. The difference in temperature between the dump/wash water and the melon is one of the key factors that contribute to water infiltration through the creation of an osmotic effect. NZ also suggests that the risk is microbial pathogen infiltration, rather than water infiltration.
5.2.2.2	Chemical treatments, 1 st bullet point • Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.	This bullet point is repeated from 4.4.2, and doesn't seem appropriate here.
5.2.2.5	Cutting, slicing and peeling melons, 2 nd bullet point • Before cutting or other processing, a further reduction in microbial contamination may be achieved by scrubbing in the presence of a sanitizer ₂ or application of an alternate alternative surface decontamination process such as hot water, steam or other treatments.	Clarity of grammar. "Alternate" suggests applying decontamination processes in succession, rather than using a different process.
10.2	Training programs • Concerns about children/infants who may	Clarity around the potential transfer of pathogens from a human reservoir such as

	accompany parents working in the production site, <u>given</u> with the potential for transfer of pathogens with <u>from</u> a human reservoir	a child.
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UNITED STATES OF AMERICA

GENERAL COMMENTS

The U.S. does not object to the Working Group's recommendation that the entire *Codex Code of Hygienic Practice for Fresh Fruits and Vegetables* and its annexes be reviewed by CCFH to ensure consistency and remove duplication once the work on the annex on melons has been finalized. However, this effort should be considered along with other proposals for new work. Although there may be text that is more widely applicable and better suited for the Code than being duplicated in each annex, a rearrangement of material should not take resources away from the development of new guidance in areas where it is needed.

The United States is providing a number of suggestions for revisions, primarily to provide clarity.

SPECIFIC COMMENTS

In the comments below, text to be removed is indicated by strike outs and text to be added is underlined.

INTRODUCTION

The last sentence in the second paragraph, which states "Fresh melons are consumed without further processing treatment that would eliminate or inactivate pathogens, if present," should be moved to the first paragraph and the first paragraph modified to state:

"Melons, such as cantaloupe, watermelon, and honeydew, are ready-to-eat fruits which are often consumed without any further processing treatment that would eliminate or inactivate any pathogens present. alone, mixed with other foods in salads and other dishes and as garnishes. Melons are consumed in a variety of ways (e.g., as melon, in beverages, in salads and as garnishes). They are popular in meals and as snacks..."

Rationale: Moving the last sentence of the second paragraph to the beginning of the first paragraph helps to emphasize the importance of the guidance in minimizing the presence of pathogens because melons are ready-to-eat. Other suggested revisions are primarily editorial to improve clarification of the information being presented.

In the first sentence of the second paragraph, modify the sentence as shown below:

"Like other fresh fruits and vegetables that are eaten raw, the safety of melon products depends on maintaining good hygienic practices along the food chain during primary production, harvesting, packing, processing, storage, distribution, marketing, retail, and at the point of consumption."

Rationale: This makes the introduction more consistent with the "Scope" of the document (section 2.1).

In the second paragraph, insert the indicated sentence after the third sentence as shown below:

"...There have been a number of outbreaks associated with melon consumption with a large number being caused by *Salmonella* spp². "A recent foodborne outbreak in the United States from melons

² Report of the FAO to the Codex Committee on Food Hygiene Working Group on the development of an Annex on melons for the Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RPC 53-2003)

contaminated with *Listeria monocytogenes* emphasizes the importance of good sanitary design of the facility and equipment and implementation of good sanitation procedures wherever melons are handled.”

Rationale: This recent outbreak, resulting in at least 72 cases and 13 deaths, points out that *Salmonella* is not the only pathogen of concern and that GHPs can be critical with intact raw agricultural commodities

Start a new paragraph with the sentence that states “The major risk factors...” and make the modifications as shown below.

[New paragraph]

~~The major risk factors that have been identified (footnote 1) as contributing to melon outbreaks include: poor temperature control (including extended holding at ambient temperature and poor cold storage), infected food handlers and poor personal hygiene. growth and survival of microbial pathogens include the characteristics of melon rind (i.e., netted rind), low-acid melon flesh and pulp, and infiltration of microorganisms into melons. Factors associated with risk of contamination of melons along the production chain include contamination in the production site from animals, pests, soil and soil amendments, water sources and irrigation practices, and damage to melons during harvest activities. Post-harvest activities that may contribute include exposure to wildlife and pests in and around packing facilities, post-harvest handling, and sanitation practices. As fresh and pre-cut melon products move through the food chain, there is also the potential for the introduction, growth and survival of foodborne pathogens, particularly if processed melons are not held at refrigerated temperatures to ensure the integrity of the cold chain. Moreover, morphological characteristics of certain types of melons, for instance netted rind, will be prone to attachments by microbial pathogens. Fresh melons are consumed without further processing treatment that would eliminate or inactivate pathogens, if present.~~

Rationale: The edits suggested to the second paragraph better capture the information presented in the FAO report. It is important that the annex not summarily label whole melons as potentially hazardous foods requiring time/temperature control for safety. The time/temperature factors as they were related to outbreaks (as noted in the FAO report) primarily relate to pre-cut melons and poor handling practices after melons have left the packing or processing facility.

2.3 DEFINITIONS

Insert the term “other” before “varieties of melons” as shown below:

“... honeydew, watermelon and other varieties of melons.”

Rationale: Editorial clarification.

SECTION 3 - PRIMARY PRODUCTION

3.1.1 Location of the production site

Second paragraph. The sentence states “The proximity of high risk production sites, such as animal...”. We question the need for the term “high risk,” as it is unclear as to what the specific risks are and why the risk is high. We recommend the term be deleted as shown below:

“The proximity of ~~high risk production~~ sites such as animal production facilities, hazardous waste sites and waste treatment facilities should be evaluated for the potential to contaminate melon production fields...”.

Rationale: Editorial to improve clarity.

3.1.1 Water for primary production

In the second bullet, in the third sentence delete the indicated phrase so the sentence reads as follows:

“Settling or holding ponds that are used for subsequent irrigation may ~~be microbiologically safe, but may~~ attract animals...”.

Rationale: The phrase is inconsistent with the message in the sentence that water in settling or holding ponds may become a vehicle for spreading microbial contamination to melons. Because settling or holding ponds are usually located in proximity to melon fields and are open to the environment, none are likely to be microbiologically safe. Removing the phrase does not affect the important point of the sentence – to caution about the use of water in settling or holding ponds for irrigation without some type of water treatment.

3.2.1.1.1 Water for irrigation

Delete the first sentence about netted melon rind surfaces and begin the paragraph as follows:

~~“Netted melon rind surfaces, in contrast to smooth rind surfaces, may foster greater attachment and survival of foodborne pathogens. For this reason, †The quality of irrigation water and type of irrigation method used is an important consideration...”~~

Rationale: This sentence is redundant with one that appears in section 3.2.

3.2.1.1.2 Water for fertilizers, pest control and other agricultural chemicals

Revise the last sentence as shown below:

Foodborne pathogens can survive ~~and grow~~ in many agrichemical solutions, including pesticides, if unclean water is used.

Rationale: The importance of the statement should focus on the fact that pathogens can survive in agricultural solutions if unclean water is used. By deleting the term “and grow” and adding the term “if unclean water is used” that message gets emphasized.

3.2.1.2 Manure, biosolids and other natural fertilizers

In the first bullet delete the term “human” and replace with “foodborne” as shown below:

~~“Use proper treatment by physical, chemical or biological methods to reduce the risk of potential human foodborne pathogen survival.”~~

Rationale: Maintains consistency with the theme of the annex, i.e., to focus on foodborne pathogens.

The second, third, and fourth bullets all address composting. The last bullet in the fourth bullet states: “In general, only fully decomposed animal waste or plant material should be applied to melon fields.” This is an important point that actually should apply to both aerobic and anaerobic composting methods. If composting is not done properly, it may become a vehicle for spreading pathogens on fresh produce. It is recommended that this sentence be moved from the fourth bullet to the end of the second bullet. In this way, it applies to any method of composting. With this change, these bullets would appear as follows:

- “Composting, if done properly, can be a practical and efficient method to inactivate foodborne pathogens in manure. In general, only fully decomposed animal waste or plant material should be applied to melon fields.
- When using aerobic composting methods, regularly and thoroughly turn compost heaps to ensure that all of the material will be exposed to elevated temperatures because pathogens can survive for months on the heap surface.
- When using anaerobic methods, special consideration should be given to determine the length of time needed to inactivate pathogens that may be present. ~~In general, only fully decomposed animal waste or plant material should be applied to melon fields.”~~

Rationale: Clarifies the importance that any method (aerobic or anaerobic) of composting should be done properly and be fully decomposed before being applied to melon fields.

3.2.3.1 Personnel hygiene and sanitary facilities

Delete the last bullet that appears in square brackets.

Rationale: Proper hand washing is a vital and necessary public health practice in food harvesting. Using alcohol gel or hand wipes in place of hand washing in food harvesting does not adequately reduce important foodborne pathogens on food workers' hands. Concern about the practice of using alcohol-based hand gels or wipes in place of hand washing with soap and water can be summarized into the following points:

- Alcohol-based hand wipes and gels should not be used as an alternative to hand washing with soap and water because wipes and hand gels do not work as well on wet, soiled hands in reducing microbial pathogens on the hands of workers.
- Agricultural work involves a high potential for wet hands and hands contaminated with organic material. Scientific research has questioned the efficacy of alcohol-based sanitizers on moist hands and hands contaminated with organic material.
- Numerous research papers have shown that alcohols have very poor activity against protozoan oocysts and certain nonenveloped (nonlipophilic) viruses, such as hepatitis A virus and norovirus, which are key pathogens of concern with produce.

Attached to these comments is a more detailed summary of available scientific research on this topic.

3.2.3.2 Health Status

In the first bullet delete the phrase "keep records of it" so the bullet appears as follows:

"Growers should be encouraged to observe symptoms of diarrheal or food-transmissible, communicable diseases; ~~keep records of it~~ and reassign agricultural workers as appropriate."

Rationale: It is not clear as to what records should be kept and why.

3.3.1 Prevention of cross-contamination

Revise the second bullet in the first set of bullets as follows:

"Particularly with manual harvesting, as well as field packing operations, good personal hygiene should be implemented to prevent surface contamination of melons."

Rationale: It is important to emphasize the need for good personal hygiene in field packing operations, where the melons may be handled multiple times.

In the second set of bullets, add a new fourth bullet:

"Field packing operations should be conducted in a manner to minimize cross-contamination of melons by equipment or packaging materials. Good sanitary practices are essential at all time."

Rationale: Again, we feel it is important to emphasize the importance of good hygiene in field packing operations, since no treatments to minimize pathogens will occur.

3.4.2 Cleaning procedures and methods

Replace the term "tested" with the term "validated" as shown below:

"Where appropriate or necessary, cleaning and disinfecting procedures should be ~~tested~~ validated to ensure their effectiveness."

Rationale: It is unclear what testing is needed. Ensuring a procedure is effective is validation.

SECTION 4 – ESTABLISHMENT: DESIGN AND FACILITIES

4.2.1 Design and layout

Revise the last sentence as follows:

“Their design should allow thorough cleaning and sanitizing of food contact surfaces to ensure microbial pathogens do not become established in the facility or on the equipment before the start of the season.”

Rationale: The facility and equipment should be designed to be cleaned and sanitized. The last portion of the sentence “before the start of the season” is deleted because it more appropriately belongs under Section 6 (see comments below) because it addresses the process of cleaning and sanitizing.

SECTION 5 - CONTROL OF OPERATION

5.1 Control of food hazards

Add the following sentences at the beginning and end of the section:

“Prevention of contamination is a key control point for all produce operations, including melon operations. Establishments should pay special attention to product flow and segregation from incoming soiled to outgoing washed product to avoid cross-contamination. If melons pass over brushes during the operation, care should be taken to be sure they do not damage or cross-contaminate the melons. They should be routinely inspected and adjusted as needed”

Rationale: We believe that a statement emphasizing prevention is important with respect to control of operations. Brushes may be used to remove soil from melons and can cause damage if care is not taken. They can also transfer contamination from one melon to another.

5.2.2.1 Post-harvest water use

Add a new first sentence as follows:

“If melons are passed through a spray-line, potable water should be used and the level of water disinfectant, if used, should be monitored to ensure proper levels are maintained.”

Rationale: Dump tanks are not the only post-harvest water use; water sprays are also common. Potable water with disinfectants at appropriate levels should be used for such operations.

Delete the bullet “Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.”

Rationale: This bullet was deleted from this section during the work group meeting but was inadvertently left in the copy sent to Codex. It is duplicative of the bullet in section 4.4.2, where it correctly belongs.

5.2.2.2 Chemical Treatments

Delete the bullet “Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.”

Rationale: This bullet was deleted from this section during the work group meeting but was inadvertently left in the copy sent to Codex. It is duplicative of the bullet in section 4.4.2, where it correctly belongs.

5.2.2.3 Cooling melons

Change the wording in the third bullet to the following:

“If water is used for cooling and is recirculated, disinfectants should be used, it should be evaluated and monitored to ensure that disinfectant levels are sufficient to reduce the potential risk of cross-contaminating melons.”

Rationale: Clarification that the use of disinfectants is recommended for cooling and recirculated water.

5.2.2.5 Cutting, slicing and peeling melons

In the second bullet, last line, change the term “stream” to “steam”.

Rationale: Editorial correction, typographical error.

SECTION 6 – PACKING ESTABLISHMENT: MAINTENANCE AND SANITATION

It is recommended that Subsection 6.1 be added to Section 6, as follows:

6.1 Maintenance and Cleaning

6.1.1 General

“Food contact surfaces should be cleaned and sanitized before the start of the season and throughout the melon season to ensure microbial pathogens do not become established in the facility or on the equipment.”

Rationale: Food contact surfaces should be cleaned and sanitized before the start of the melon season and throughout the season as the facility is used so as to prevent the build up of *Listeria monocytogenes* on the equipment and result in contamination that can lead to illness.

SECTION 7 – PACKING ESTABLISHMENT: PERSONAL HYGIENE

This section is conspicuous in its absence. We recommend adding it with a reference to the General Principles of Food Hygiene.

SECTION 9 - PRODUCT INFORMATION AND CONSUMER AWARENESS

In the fifth bullet, change “i.e.” to “e.g.” so it states “(e.g., cantaloupes)”.

Rationale: There may be other netted melons besides cantaloupe.

ATTACHMENT

Summary of Research on Hand Wipes and Gels:

Considerable attention has been devoted to the use of alcohol-based hand rubs and gels as a substitute for soap and water hand washing, as a means of disinfecting the hands. Food workers and harvesters should not use alcohol hand rubs and wipes as an alternative to soap and water hand washing because wipes and hand gels do not work as well on wet, soiled hands in reducing microbial pathogens on the hands of workers. Alcohol hand rubs may not reduce bacterial contamination on hands unless used frequently on relatively clean hands. Alcohol hand rubs, gels and hand wipes have poor efficacy against protozoa, such as *Giardia* or the oocysts of *Cyclospora* that are found in soil or water contaminated with feces (Rose and Slifko, 1999). Also, in general, alcohol hand rubs and gels have been demonstrated to be less effective against hepatitis A virus (HAV) and norovirus (NoV) surrogates than soap and water hand washing, especially in the presence of fecal contamination (Lages *et al.*, 2008; Bidawid *et al.*, 2000; Sickbert-Bennett and Weber, 2005). In addition, several investigators found NoV to be resistant with in vitro tests to certain chemicals, including ethanol (Doultree *et al.*, 1999; Duizer *et al.*, 2004; Girard *et al.*, 2010).

Mixed results have been reported with disinfection studies on the hands, depending on the test method and viral surrogate or strain used. The lack of a standardized test for viral disinfection tests on the hands, together with different test methods, viral strains and surrogates used in these studies, has further complicated the interpretation and application of disinfection study results. Innate resistance to disinfectants differs among viral strains due to structural differences and other intrinsic and extrinsic factors. Factors such the increased resistance to disinfection found with viral clumping or the presence of organic material (such as human feces), need to be addressed when observing the impact of disinfectants against human NoV and HAV (McDonnel and Burke, 2011; Teunis *et al.*, 2008; Thurman and Gerba, 1988; Sattar *et al.*, 1986). Care must be used when extrapolating results with NoV surrogates as estimates for the potential results achieved with human NoV. For example, Murine norovirus (MNV) is genetically

similar to human NoV, but displays significantly lower resistance to ethanol disinfection than human NoV or feline calicivirus (FCV) (Girard *et al.*, 2010; Sattar *et al.*, 2011) .

Disinfection results differ based on the test methods, disinfectants, and strains used, however, when the virucidal effect of ethanol against human NoV and HAV is addressed, ethanol appears to be relatively ineffective against NoV and HAV (Duizer *et al.*, 2004; Doultree *et al.*, 1999; Abad *et al.*, 1997; Liu, *et al.* 2010; Sattar *et al.*, 2011; Steinmann, 2010; McDonnell and Burke, 2011; Nowak *et al.*, 2011; Sickbert-Bennett and Weber, 2005; Park *et al.*, 2010; and Wolf, *et al.* 2001).

Wolf *et al.* (2001) studied the efficacy of 80% ethanol and 95% ethanol against HAV and found both solutions failed to show the virucidal activity level required by German guidelines for hand sanitizers (note: the German Guideline for testing virucidal activity of disinfectants requires at least a 10,000 fold factor (99.99%) reduction for inactivation). Mbithi, *et al.*, 1993, found HAV to be resistant to 70% ethanol disinfecting of the hands, with only an 85% reduction.

Two factors that are important in determining effective virus disinfection by gels or alcohol hand wipes on hands are:

- The effectiveness of the product in the presence of fecal contamination and
- The product having a contact time of at least 30 seconds.

Typical hand decontamination procedures rarely last more than 8-10 seconds, so a contact-time longer than 30 seconds would be impractical in an agricultural or food processing setting. Kramer *et al.* (2002) reported that alcohol hand gels take longer than 30 seconds to disinfect the hands. They investigated the antimicrobial activity of ethanol and 1- and 2- propanol hand gels containing 53% to 70% alcohol (v/v) according to European standards (EN 1500), and were not able to find any hand gel that could meet the EN 1500 requirements within 30 seconds on the hands.

Bidawid *et al.* (2004) compared the impact of water alone, soap and water, and ethanol (62% or 75%), against feline calicivirus (FCV) dried on finger pads. Water alone, and soap and water were found to be more effective than 75 or 62% ethanol. The finger pads were dried on a paper towel after treating the finger pads with the hand agent, which may have enhanced mechanical removal from the finger pads. Lin *et al.* (2003) compared the efficacy of hand disinfection using hand soap and an alcohol-based hand sanitizer on hands contaminated with FCV in an artificial feces. Six hand disinfection methods were evaluated, including tap water, regular liquid hand soap, antibacterial liquid hand soap containing triclosan, 62% ethanol hand sanitizer gel, and combined methods using regular liquid soap followed by hand sanitizer gel and regular liquid soap plus a nailbrush. Washing hands with a liquid hand soap plus a nail brush, significantly ($p = 0.05$) lowered FCV on the hands compared to rubbing hands with 62% ethanol hand sanitizer gel. The 62% ethanol hand sanitizer gel was the least effective for reducing FCV on the hands compared to other treatments tested.

Kampf *et al.* (2005) demonstrated the influence of the type of organic load used in hand disinfection tests. They found that the addition of a 5% fecal suspension or a soil load to FCV significantly reduced the efficacy of 70% ethanol against FCV on fingertips. Therefore based on these studies, it can be presumed that ethanol-based hand gels are not very effective in cleaning hands contaminated with NoV, since NoV has been demonstrated to be more resistant than FCV (Kampf *et al.*, 2005). Gehrke *et al.* (2004) reported more than a 3- \log_{10} reduction with the use of a 70% ethanol and a 1-propanol solution, but these results were obtained without the presence of fecal contamination. When fecal contamination was added, 70% ethanol and 1-propanol solutions were significantly less effective, with less than a 3- \log_{10} reduction within a 30 second contact-time (Kampf and Kramer, 2004).

Combining more than one chemical into a single disinfectant may also have promise for future hand disinfectants. When certain acidic and basic chemicals are combined, the chemical mixture may alter the solution pH, the virion's electrostatic charge or viral adsorption capability, or the mixture may increase the number of potential sites within the virus that the disinfectant can attack, thereby improving the disinfectant efficacy of previously weak disinfectants (Springthorpe and Sattar, 1990). For example, Macinga *et al.* (2008) found that a new ethanol-based hand sanitizer containing a synergistic blend of poly-quaternium polymer and citric acid was more effective against murine NoV than 75% ethanol in a 30-sec exposure finger pad test, indicating the potential for more effective hand sanitizers in the future.

Limited data exist on the efficacy of hand washing on reducing human NoV on contaminated hands. Recently Liu *et al.* (2010) evaluated the efficacy of antibacterial liquid soap and alcohol-based hand sanitizer for the inactivation of human NoV (Norwalk virus) on human finger pads. The greatest reduction was seen with the antibacterial liquid soap treatment and water rinse only. The alcohol-based hand sanitizer was relatively ineffective. They noted that agents such as that studied by Macinga *et al.* were promising alternatives that merit further evaluation and commercial development and emphasized the importance of more research to develop products with high-level activity against human NoV.

In conclusion, until new products are developed as described above, alcohol hand gels or wipes should not be used as a replacement for hand washing with soap and water. Alcohol gels and wipes are not an equivalent substitute on soiled, wet hands, especially when considering foodborne viruses and protozoa.

URUGUAY

Uruguay appreciates the work conducted by the Physical Working Group chaired by Canada.

This revision was based on the Spanish version of the document.

General Considerations:

Uruguay supports the document.

Specific Considerations:

2.3 Definitions

We suggest that the term "cups" be included in the definitions.

SECTION 3 - PRIMARY PRODUCTION

Fresh melons are grown ~~in production sites indoors~~ **under cover, protected or in greenhouses** (e.g., ~~greenhouses~~) and outdoors, ~~harvested, and either field packed or transported to a packing establishment~~ **Melons are first classified at harvest and then moved to the classification and/or packing area.**

3.1.1 Location of the production site (paragraph 3)

(Spanish version)

Cuando en la evaluación ambiental se identifique un posible riesgo para la inocuidad de los alimentos, deberían implementarse medidas para reducir al mínimo la contaminación de los melones en el lugar de producción. Debería ~~darse la debida consideración a~~ **considerarse** hacer cambios al terreno que circunde los campos de producción de melón, tal como la construcción de una zanja de poca profundidad, para prevenir que la escorrentía ~~entre~~ **ingrese** en los campos, ~~para reducir~~ **reduciendo** la posibilidad de contaminar los melones con patógenos en el lugar de producción. Los efectos de algunos sucesos ambientales, tales como lluvias intensas, no pueden ser controlados. Por ejemplo, las lluvias intensas podrían aumentar la exposición de los melones a patógenos si el suelo contaminado con patógenos se salpica a las superficies del melón. Debería ~~darse la debida consideración a~~ **considerarse** una cosecha

temprana si se pronostican lluvias intensas o a retrasar la cosecha y realizar un lavado adicional cuando han ocurrido recientemente lluvias intensas.

3.2 Hygienic primary production of melons

We suggest that the following sentence be deleted from paragraph 1:

~~Special consideration should be given to production practices specific to melon production because of the unique characteristics of the melons and the rind of some melons and because melons frequently contact soil directly during growth and development.~~

3.2.3.1 Personnel hygiene and sanitary facilities

We believe this section should not provide the possibility of not having clean water and therefore of using towels as a substitute.

3.3 Handling, storage and transport

Melons such as cantaloupe are harvested based on the melon's stage of maturity as judged by the formation of an abscission zone between the ~~vine~~ **plant** and the melon. After the ~~vine~~ **plant** is separated from the melon, a stem scar is left on the fruit.

3.3.1 Prevention of cross-contamination

(Paragraph 1, fourth bullet point)

- Avoid setting melons directly on soil after removal from the ~~vine~~ **plant** and before loading into ~~transport vehicle~~ to avoid contaminating the melon with contaminants in the soil.

(Paragraph 2, first bullet point)

- When ~~padding~~ **a pad** is used with post-harvest handling equipment to prevent damage to melons, it should be constructed of material that can be cleaned and disinfected. Ensure that ~~padding~~ **the pad** is cleaned and disinfected before and during use

(Paragraph 2, third bullet point)

- Train agricultural workers to recognize and ~~not harvest~~ **dispose of** melons that have mechanical damage.

(Paragraph 2, fourth bullet point)

- Dispose of culled melons in a way that melon culls will not attract animal and insect pests. This will reduce the potential for contaminating melons still on the ~~vine~~ **plant**.

SECTION 4 –ESTABLISHMENT: DESIGN AND FACILITIES

(Spanish version)

Las siguientes disposiciones se aplican a las instalaciones de envasado y ~~elaboración~~ **procesamiento** de melones.

4.4.2 Drainage and waste disposal

(Spanish version)

En las instalaciones de envasado, enfriamiento y elaboración, un drenaje adecuado es ~~crítico~~ **fundamental** para evitar el riesgo de contaminar los melones. Para garantizar el drenaje adecuado del agua estancada, debe considerarse lo siguiente:

5.2.2.2 Chemical treatments

Fungicides may be applied to melons by use of an aqueous spray or immersion to extend the post-harvest life of the fruit. The following are recommended:

- ~~Areas for garbage recyclables and compostable waste should be identified and all waste should be stored and disposed of in a manner to minimize contamination.~~ (Delete the entire bullet point)

5.5.3 ~~Ice~~ Refrigerated transport

10.2 Training Programmes

~~Personnel~~ Any person involved in primary production, packing, processing or transport operations of melons should receive training appropriate to their tasks and should be periodically assessed while performing their duties to ensure tasks are being completed correctly...