

codex alimentarius commission



FOOD AND AGRICULTURE
ORGANIZATION
OF THE UNITED NATIONS

WORLD
HEALTH
ORGANIZATION



JOINT OFFICE: Viale delle Terme di Caracalla 00153 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

Agenda Item 5

**CX/FH 09/41/5-Add.1
October 2009**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD HYGIENE

Forty-first Session

Loews Coronado Bay Hotel, San Diego, California, United States of America

COMMENTS ON THE PROPOSED DRAFT ANNEX ON FRESH LEAFY VEGETABLES (Annex to the Code of Hygienic Practice for Fresh Fruits and Vegetables) (At Step 3)

COMMENTS SUBMITTED BY:

**ARGENTINA, AUSTRALIA, BRAZIL, EGYPT, JAPAN, MEXICO, NEW ZEALAND, PERU &
THAILAND**

ARGENTINA

-We recommend that the INTRODUCTION include parasites such as: *Giardia*, etc., given that contamination with these parasites is very important, despite the lack of epidemiological data, but we consider that incidence of these parasites could be greatly reduced by applying these hygienic practices.

-On point 1. **OBJECTIVE OF THE ANNEX**, we suggest:

+ in the second row change the words “associated with” to “like”; in the second row add “...including fresh leafy herbs...”, given that the Objective of the standard should be explicit so as not to give rise to doubts regarding the products included. It is not necessary to mention it again in the text.

+In the third row we suggest deleting “...production...” given that this annex does not refer to any kind of product processing.

+In the fourth row, delete “...and consumer use...” which does not correspond to this annex, this topic deserves a good hygienic practices guide for home preparation of fresh leafy vegetables.

+In the fifth row, delete “pre-cut or ready to eat” for the same reason as above, there is already a code for that.

The paragraph would read as follows:

The objective of this annex is to provide specific guidance to reduce the microbial food safety risks associated with like fresh leafy vegetables, including fresh leafy herbs, that are intended to be consumed without cooking during their production, harvesting, packing, ~~processing~~, storage, distribution, and

marketing, ~~and consumer use~~. This includes fresh leafy vegetables that are sold and marketed as fresh, ~~pre-cut or ready to eat~~.

On point 2. **SCOPE, USE AND DEFINITIONS**

Based on the explanations given in the previous point, we recommend deleting the words or expressions that are crossed out and bolded in the corresponding paragraph.

In the 2nd paragraph of the 3rd row we recommend replacing “endive” with “escarole” (in some cases escarole is known as endive, but it’s not clear as is) and, so that no fresh leafy vegetables are left out, we recommend adding “..., among others” at the end of the paragraph.

The paragraph would read as follows:

“2.1 SCOPE

This annex covers specific guidance related to the production, harvesting, packing, ~~processing~~, storage, distribution, and marketing, ~~and consumer use~~ of fresh leafy vegetables that could be consumed fresh, ~~pre-cut or ready to eat~~.

Fresh leafy vegetables for purposes of this Annex include all vegetables ~~of a leafy nature~~ where the leaf is intended for consumption. Thus, all varieties of lettuce, spinach, cabbage, chicory, ~~endive~~ escarole and radicchio and fresh herbs such as coriander/cilantro, basil, and parsley among others, are included. “

On point **2.3 DEFINITIONS**, we recommend the following changes to improve the writing and enhance comprehension of the text.

Hydroponic: is a general method for the production of plants in a water ~~or plant medium, such as coconut husk fiber~~ without soil; plants are grown using mineral nutrient solutions instead of soil. Plants may be grown with their roots in the mineral nutrient solution only, or in inert media such as perlite, gravel, ~~or~~ mineral wool, or coconut husk fiber.

3.1.1 LOCATION OF THE PRODUCTION SITE:

In the 3rd paragraph, 5th row, replace as follows: “...trees or ~~constructed~~ artificial”

3.1.3 Wild animals, livestock and human activity: The following change of term should be considered for the last sentence, because the idea is precisely to avoid collection or harvest.

“If present, consideration should be given to the risks and whether affected crop areas should be harvested.” [No change necessary in the English version. Argentina’s recommended change applies only to the Spanish translation.]

3.2.1.1 Water for primary production clarification is requested in the 2nd bullet point regarding the expression “...appropriate well casing...” given that in a previous opportunity we suggested replacing it with “appropriate well caps” because we feel that this refers to the capping of the submersible pump.

3.3.2 Storage and transport from the field to the packing facility

In the first bullet, second sentence, to better understand the expression, we suggest the following change:

“...Holding fresh leafy vegetables at temperatures above 5°C should only be ~~minimized~~ done in exceptional cases, as it increases the risk of pathogen growth if pathogens are present.”

3.4.1 Cleaning programs

We recommend moving the first five (5) bullets to point 3.2.4 Equipment associated with growing and harvesting, because we think they relate more to point 3.2.4 than to a cleaning program.

-The following points should be eliminated because they do not correspond to this code, but rather to the Annex on Ready-to-Eat Fresh, Pre-cut, Fruits and Vegetables:

5.2.2.6 Cutting, slicing, shredding, and similar pre-cut processes

5.2.2.7 Washing after cutting, slicing, shredding, and other similar pre-cut processes

9.3 Labeling

We recommend deleting the section of the paragraph that is crossed out, as it does not correspond to this annex, rather to the Annex on Ready-to-Eat Fresh Pre-Cut Fruits and Vegetables, and add “including” in the first row to make it read better:

Label information needs to be clear and easy to read ~~with~~ including specific directions for product storage and use, ~~including regarding the ‘use-by’¹ date or other shelf-life indicators when provided. Consumers need clear guidance on keeping washed RTE bagged fresh leafy salads refrigerated until used.~~

9.4 Consumer education

In this section we suggest deleting the crossed out paragraphs (in the second, fourth and last bullet), because they do not correspond to fresh leafy vegetables, but rather to the Annex on Ready-to-Eat Fresh Pre-Cut Fruits and Vegetables:

All stakeholders—government, industry, consumer organizations and the media—should work together to communicate clear consistent messages on handling fresh leafy vegetables safely to avoid giving contradictory advice and causing confusion.

Consumer information on handling fresh leafy vegetables safely should cover:

- Selecting produce in the marketplace (supermarkets, retailers)-- Many fresh leafy vegetables such as lettuce are fragile and must be handled with care to avoid mechanical damage and to minimize discoloration and pathological problems.
- Transporting to home--Increases in product temperatures during transportation can be considerable. ~~Time in transit for fresh leafy vegetables. The date after which the product should not be consumed. It is determined from the date of production, utilizing the product shelf life, building in a margin of safety as determined by the manufacturer.~~
- Storage/ refrigeration of fresh leafy vegetables
- Washing leafy vegetables as appropriate with potable running water. ~~Products labeled washed and ready to eat should not be rewashed.~~
- Correct hand washing methods using soap and potable water before handling fresh leafy vegetables should continue to be promoted to consumers.
- Cross-contamination--Consumers need to handle, prepare and store fresh leafy vegetables safely to avoid cross-contamination with pathogens from various sources *e.g.* hands, sinks, cutting boards, raw meats.

~~Specific information for fresh cut, pre cut or ready to eat bagged salads—Consumers need specific and clear guidance on how to safely handle fresh cut, pre cut or ready to eat (RTE) leafy vegetables. Clear labeling is therefore important. There is anecdotal evidence to suggest that some consumers find it difficult to distinguish between produce that can be consumed without further washing and that which requires washing before consumption, particularly bagged produce such as herbs and spinach.~~

10. 2 TRAINING PROGRAMMES:

We recommend writing the third bullet:

¹ The date after which the product should not be consumed. It is determined from the date of production, utilizing the product shelf life, building in a margin of safety as determined by the manufacturer.

- Children/infants, who may accompany parents working in the field with the potential for transfer of pathogens with a human reservoir

As follows: • Elimination of waste (defecation and urine) produced by children/infants who may accompany parents working in the field.

AUSTRALIA

General Comments:

Some of the requirements presented in the proposed draft annex are overly prescriptive, which may lead to impracticality in the implementation of the requirements proposed. This impracticality is likely to be significant for developing economies. For example, requirements described in the 4th paragraph under 3.2.1.2 Manure, biosolids and natural fertilizers on page 7 (unless it can be demonstrated that product contamination will not occur), and requirement described in the second dot point under 3.2.3.1 Personnel hygiene and sanitary facilities on page 9 (e.g. 1 per 10 people) may not be practical for small sized growers in the developed economies and for growers in developing economies.

Specific comments:

1. Second paragraph under Introduction on page 3
For the last sentence, it is suggested to add to the end of the sentence for those ready to eat leafy vegetables, i.e. There is no further processing treatment that would eliminate or inactivate the target microorganisms for those ready to eat leafy vegetables.
Rationale: This qualification makes the whole sentence more meaningful.
2. The paragraph under 1. Objective of the Annex on page 3
For the second sentence, it is suggested to add that are intended for consumption without cooking after fresh, pre-cut, i.e. This includes fresh leafy vegetables that are sold and marketed as fresh, pre-cut that are intended for consumption without cooking or ready-to-eat.
Rationale: This qualification further defines fresh and pre-cut.
3. Second dot point under 3.2.1.1 Water for primary production on page 5
For the first sentence, it is suggested to take out the word 'large'.
Rational: Users of this annex are likely to be uncertain about the meaning of 'large' animal here and why only 'large' animal contact should be prevented.
4. Second paragraph under 3.2.1.1.4 Water for harvesting and other agricultural uses
It is suggested to remove the last sentence in this paragraph.
Rationale: This qualification is unnecessary. If this qualification is applied here, why does it apply to other parts of the Annex, for example, at the end of the section of irrigation method on page 6?
5. Third paragraph under 3.2.1.2 Manure, biosolids and natural fertilizers on page 7
For the second sentence, it is suggested to change Ultraviolet Index to UV light, i.e. The persistence of human pathogens in soil depends on many factors (soil type, relative humidity, temperature, UV light, and pathogen type among other known factors).
Rationale: It is unnecessary to introduce the terminology of Ultraviolet Index here.
6. First paragraph under 4. Packing establishment: design and facilities on page 12
It is suggested to change General Code of Hygienic Control of *Listeria monocytogenes* in Ready-to-eat Food" to Guidelines on the application of general principles of food hygiene to the control of *Listeria monocytogenes* in foods (CAC/GL 61-2007).

Rationale: There does not appear to be a General Code of Hygienic Control of Listeria monocytogenes in Ready-to-eat Foods.

7. 4th dot point under 9.4 Consumer education on page 16

It is suggested to remove the second sentence.

Rationale: This sentence does not appear to add any value to food safety.

BRAZIL

In regard to CX/FH 09/41/5, Brazil would like to present comments on the revised draft annex:

Current annex was perceived to be applied to bagged or un-bagged leafy vegetables that could be consumed either fresh, pre-cut or ready-to-eat, nevertheless the reference used to rank water supplies in the annex, Leifert *et al*², expressed all his statements on (usually bagged) ready to eat vegetables (RTE), taking RTE's definition from Sagoo *et al*, 2001: being "RTE those that should be consumed without any cooking or further preparation by the consumer other than portioning as necessary and light washing and/or scraping"³.

Brazil would like to highlight that many references expressed their conclusions on vegetables commercialized as bagged products.

Although in developed countries bagged leafy vegetables is a common retail practice the incorporation of this practice into the annex (in a non explicit manner) seems to bring over prescriptive measures towards the whole production chain, opting on exclusion instead of guidance.

Brazil understands that this extension impacts the development of the document lengthening the bridge towards developed practices and therefore could be reviewed and/or clarified by FAO/WHO as related to the Experts Meeting in 2008.

Differently from RTE or pre-cut leafy vegetables, retailed as sanitized and pre-packed/bagged products, unpacked leafy vegetables (without/or in open packs), are traded mainly without cold chain, lacking grower control of the retail conditions.

Stringency at this point may be understood as being deficient in justification when unpacked fresh leafy vegetables are contrasted with bagged fresh, RTE and pre-cut leafy vegetables, where contamination is intended to be controlled along the whole chain with procedures and barriers (washing treatments, packs, controlled temperature etc).

Brazil would like to emphasize that leafy vegetables usually traded unpacked may be already covered by current Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003) and that the risks from pre-cut and ready-to-eat leafy vegetables relating to foodborne diseases should be the major concern and focus of this annex without broadening stringency to unpacked fresh produce without sound scientific basis.

Moreover, Brazil would like to highlight that mentioning the need of a bag/pack in the scope is consistent to what the Working Group (WG) may have aimed with the insertion of section 9.3 (Labeling), closely related to the need of a pack, besides section 3.3.2 (Storage and transport from the field to the packing facility), section 4 (Packing establishment: design and facilities), and section 5.4 (Packing), among others.

Therefore taking into consideration the feasibility of in field practices for the adoption of the annex without constrains, Brazil still reinforces that the succeeding document should contain a precise scope, leaving all leafy vegetables that could be retailed without being packed/bagged covered by the current Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53-2003).

² Leifert *et al*, 2008 Control of enteric pathogens in ready-to-eat vegetable crops in organic and « low input » production systems : a HACCP-based approach. In Journal of Applied Microbiology, 105, 931-950.

³ Sagoo *et al* (2001) The microbiological examination of ready-to-eat organic vegetables from retail establishments in the United Kingdom. In Letters in Applied Microbiology, 33, 434-439.

Section and sentence/ paragraph	Type of change	Rationale	Proposed changes
Introduction	Clarification/ Addition	Although examples had been included for educative purposes, a general sentence could be inserted illustrating that they should not remain prescriptive over further developments and technological advancements.	Include the proposed last sentence in the Introductory section, as in: “Examples of control measures are illustrative only and their use and approval may vary between member countries.”
1. Objective	Clarification/ Addition	For consistency to what the WG may have aimed with the insertion of section 9.3 (Labeling), besides others, the scope could precisely mention the need of a pack.	Include the need of packing the product, as in: “The objective of this annex is to provide specific guidance to reduce the microbial food safety risks associated with fresh leafy vegetables that are intended to be consumed without cooking during their production, harvesting, packing, processing, storage, distribution, marketing, and consumer use. This includes fresh leafy vegetables that are sold and marketed as [bagged] fresh, pre-cut or ready-to-eat. Because of the diversity of leafy vegetables and practices and conditions used throughout the supply chain, recommendations to minimize microbial contamination will be most effective when adapted to specific operations.”
2.1 Scope	Clarification/ Addition	For consistency to what the WG may have aimed with the insertion of section 9.3 (Labeling) and the scope of the main Code (CAC/RCP 53-2003), besides others, the scope could precisely mention the need of a pack.	Include the need of packing the product, as in: “Fresh leafy vegetables for purposes of this Annex include all vegetables of a leafy nature where the leaf is marketed as pre-packed/bagged and intended for consumption. Thus, all varieties of lettuce, spinach, cabbage, chicory, endive and radicchio and fresh herbs such as coriander/cilantro, basil, and parsley are included.”
3.1.3 Wildlife, livestock, and human activity	Clarification	Wild animals control was issued as a main concern to Brazilian growers (i.e some lizards also in temperate countries are	Separate recommendations to mitigate domestic and wild animals, as in: [Domestic animals should be

Section and sentence/ paragraph	Type of change	Rationale	Proposed changes
		<p>extremely difficult to mitigate even in protected structures).</p> <p>Raised environmental concern is improving wildlife nationwide and actions to mitigate wild and domestic animals differs.</p>	<p>excluded from production and handling areas, using appropriate biological, cultural, physical and chemical pest control methods. Wild animals, to the extent feasible, where wildlife is a concern should be deterred or redirected to areas where crops are not destined for fresh produce markets, using appropriate biological, cultural, physical and chemical pest control methods.] Domestic and wild animals should be excluded from production and handling areas, as far as possible, using appropriate biological, cultural, physical and chemical pest control methods. ...</p>
3.2.1.1.1 Water for irrigation	Clarification/ Insertion	<p>The proposed ranking of Waters was considered as not being accomplished by sound justification or referenced by the WHO Guidelines for Drinking Water Quality.</p> <p>Generalization adopted to rank waters should rely as accessory to national legislations, always following WHO requirements for drinking water.</p>	<p>3.2.1.1.1 Water for irrigation</p> <p>[Source of water should comply with local, regional, and national regulations. In addition the following could be considered:]</p> <p>The quality of water varies widely by type of source. The ...</p>
3.2.1.1.1 Water for irrigation	Clarification/ Deletion	<p>In the adopted ranking of water source, as related to the risk of contamination, specified in the Experts Meeting Report, <i>apud</i> Leifert <i>et al</i>¹, the ranking of surface water only below treated reclaimed or wastewater seems to bring prejudice to surface water even when analytically tested and considered safe.</p>	<p>Consider the approved-definition of clean water (CAC/RCP 53-2003), without specifying examples brings monitored surface water to a suitable ranking, as in:</p> <ol style="list-style-type: none"> 1. Potable (lowest risk) 2. Clean water <p>• Rain water provided the integrity of the water distribution system is maintained</p> <p>• Water in deep wells, provided they are maintained, monitored and capped</p> <p>• Water in shallow wells provided they are maintained, monitored and capped</p>

Section and sentence/ paragraph	Type of change	Rationale	Proposed changes
3.2.1.1.1 Water for irrigation	Clarification/ Addition	<p>The lack of wording in the surface water restrictions when not monitored and not properly distributed may give the understanding that this source of water is far below water from wells.</p> <p>Though surface water is the most used water for human consumption this restriction also seems to bring prejudice to surface water.</p>	<p>Consider adopting wording for non monitored surface water, as in:</p> <p>[5. Surface waters due to lack or bad monitoring or improper distribution system]</p> <p>6. Surface waters, particularly in proximity to animals, human habitation and their waste, presents a higher risk due to its vulnerability to environmental sources of contamination</p>
3.2.1.1.1 <u>Irrigation Method</u>	Addition	Third paragraph seems not to address recommendations to subsurface irrigation.	<p>Consider adopting wording as suggested:</p> <p>Subsurface or drip irrigation that results in no wetting of the plant is the irrigation method with the least risk of contamination, although these methods can still experience localized problems. For [subsurface and] drip-irrigation, care should be taken to avoid creating pools of water on the soil surface or in furrows that may come into contact with the edible portion of the crop.</p> <p>Or:</p> <p>Subsurface or drip irrigation that results in no wetting of the plant is the irrigation method with the least risk of contamination, although these methods can still experience localized problems. For [subsurface] drip-irrigation, care should be taken to avoid creating pools of water on the soil surface or in furrows that may come into contact with the edible portion of the crop</p>
3.2.1.1.1 <u>Irrigation Method</u>	Clarification/ Addition	<p>Fourth paragraph seems not to be cost effective or feasible, needing further detailing for in field application.</p> <p>It seems that extra rigor was adopted besides other practices that could be considered.</p>	<p>Consider adopting wording as suggested:</p> <p>Irrigation of fresh leafy vegetables that have physical characteristics such as rough surfaces where water may accumulate, a vase-like growth characteristic, or high density</p>

Section and sentence/ paragraph	Type of change	Rationale	Proposed changes
			seeding or transplant rates should be irrigated with only [potable or] clean water. Irrigation of these products [with other sources of water] should be applied in a way to minimize wetting of the edible portion [the days preceding and after harvesting] because the plant characteristics can provide niches for microbial attachment and survival.
3.2.3.3 Personal cleanliness	Addition	Insertion of a clear reference to the general guide may be needed.	Consider adopting insertion as suggested: Refer to the Code of Hygienic Practice for Fresh Fruits and Vegetables. In addition, the following should be considered:
3.2.3.4 Personal behaviour	Addition	Insertion of a clear reference to the general guide may be needed.	Consider adopting insertion as suggested: Refer to the Code of Hygienic Practice for Fresh Fruits and Vegetables. In addition, the following should be considered:
9.3 Labelling	Clarification/ Addition	The Code of Hygienic Practice for Refrigerated Packaged Foods with Extended Shelf Life (CAC/RCP 46-1999) do not apply to fresh leafy vegetables, as stated in the scope: “This code covers low-acid refrigerated foods that are heat treated and are susceptible to outgrowth of pathogenic microorganisms during their extended shelf-life. This Code excludes: raw foods...”	Consider adopting insertion as suggested: [Refer to General Standard for the Labelling of Prepackaged Foods (CODEXSTAN 1-1985)]. In addition the following should be considered:

EGYPT

There is no change in the situation regarding the fresh vegetables from the last letter issued in 3/8/2009 (previous EOS comments).

As for agenda item 5 regarding:

Proposed draft annex on fresh leafy vegetables (annex to the code of hygienic practice for fresh fruits and vegetables)

The agenda is well established and its application will lead to production of safe fresh leafy vegetables.

JAPAN

The Government of Japan is pleased to submit the following comments on the Proposed Draft Annex on Fresh Leafy Vegetables for consideration at the forthcoming 41st Session of the Codex Committee on Food Hygiene.

General Comments

The document should focus more on specific issues and avoid duplication of texts which are already covered by the *Code of Hygienic Practice for Fresh Fruits and Vegetables*. In addition, this document should give precision to description on the quality of water at the different steps especially at farm level as suggested by some members in the 40th Session of the CCFH.

Specific Comments

1. OBJECTIVE OF THE ANNEX

1st sentence

The term “cooking” should be replaced with “further microbiocidal steps” since consumers can take actions other than cooking, such as washing with running water to eliminate microorganisms.

3.2 HYGIENIC PRIMARY PRODUCTION OF FRESH LEAFY VEGETABLES

3.2.1.1 Water for primary production

The text in Section 3.2.1.1.1 (Water for irrigation) should be transferred to Section 3.2.1.1 because the text describing on the quality of water should apply not only to irrigation water but also to water for other uses in the primary production.

Transferring the text in Section 3.2.1.1.1 here with some amendments as follows:

In the use of water, the quality of water that varies widely by type of source should be taken into account. The risk of contamination with pathogens generally increases according to the following ranking:

1. Potable (lowest risk)
2. Rain water and Well water (Clean water)
 - Rain water provided the integrity of the water distribution system is maintained
 - Water in deep and shallow wells, provided they are maintained, monitored and capped
 - ~~▪ Water in shallow wells provided they are maintained, monitored and capped~~
3. Adequately treated reclaimed or wastewater
4. Water in shallow or deep wells due to inadequate installation or improper maintenance
5. Surface waters, particularly in proximity to animals, human habitation and their waste, which presents a higher risk ~~due to its vulnerability to environmental sources~~ of contamination
6. Raw or inadequately treated waste water (highest risk)

In primary production, the water of ranking 3, 4, 5 and 6 should not be used unless it is treated to achieve adequate quality. Growers should consult with national or local government, industry group and/or experts to evaluate whether the treated water can be used as clean water, particularly if there is direct contact between the water and edible portions of leafy vegetables.

~~Other options should be considered to improve microbial quality of surface waters, such as sand filtration or storage in catchments or reservoirs to achieve partial biological treatment. The efficiency of these treatments should be evaluated and monitored.~~

Before using reclaimed or wastewater for primary production ~~crop irrigation~~, consult...

2nd paragraph

To further clarify the adequate quality of water used in primary production, the following sentence should be added at the beginning of the 2nd paragraph:

Clean water should be used in primary production, particularly if there is direct contact between the water and edible portions of leafy vegetables.

1st bullet point

The following amendment should be made in order to clarify the adequate quality of water used in primary production:

- Assess the potential for microbial contamination (e.g., from livestock, human habitation, sewage treatment, manure and composting operations) and the water's suitability for its intended use. If the water is suspected to be contaminated with pathogens and not suitable for its intended use, the water should not be used without further treatment. ~~and~~ Reassess the potential for microbial contamination...

2nd bullet point

Japan proposes the following insertion as a consequence of the deletion of 2nd paragraph of Section 3.2.1.1.1:

- ...Possible corrective actions may include fencing to prevent large animal contact, appropriate well casing and head maintenance and placement of wells, filtering water, not stirring the sediment when drawing water, building settling or holding ponds, and water treatment facilities. The efficacy of these actions should be evaluated and monitored. Settling or holding...

3.2.1.2 Manure, biosolids and other natural fertilizers

4th paragraph

1st and 3rd sentences should be merged as follows and moved to after the 2nd paragraph so that readers can easily review all possible sources for field soil contamination:

Fresh leafy vegetables may be contaminated through direct contact with contaminated manure, biosolids and other natural fertilizers. In addition, field soil contaminated with human pathogens may also provide a means of fresh leafy vegetables contamination via rain splash or plant uptake.

5th sentence should be amended as follows since necessity for guidance on appropriate intervals depends on the type of soil amendments:

Competent authorities should provide guidance on appropriate pre-plant intervals applied upon types of manures, biosolids and other natural fertilizers.

Insertion of a new sub-section regarding seeds

The JEMRA report on fresh leafy vegetables made no recommendation on seed control due to lack of data on transfer of any seed contaminants through the growing phase of leafy vegetables. But it implied that seed is a possible source of contamination. Japan proposes to insert a sub-section describing seed control under Section 3.2.1 as follows:

3.2.1.6 Seed

Upon receipt of seeds, record should be maintained of the seed supplier, the lot number and country of origin. Seeds should be handled and stored in a manner that will prevent microbial contamination.

3.2.3 Personnel health, hygiene and sanitary facilities

2nd sentence and the 4th bullet should be deleted to remove replication of section 3.2.3 of the main document.

3.3 HANDLING, STORAGE AND TRANSPORT

3.3.1 Prevention of cross-contamination

3rd sentence of the 2nd paragraph

An example of specific control measures should be added as follows, for clarity:

Specific control measures should be implemented to minimize the risk of contamination from microorganisms associated with the method, such as prevention of sucking up soils and other field contaminants and components that may damage or cut plants.

5.2.2.2 Post-harvest water use

1st bullet point should be deleted as it is already covered by Section 5.2.2.1 of the *Code of Hygienic Practice for Fresh Fruits and Vegetables*.

5.7 DOCUMENTATION AND RECORDS

2nd paragraph

Remove square brackets. The term “food safety plan” should be replaced with “food safety control system”, to be consistent with the main document.

5.8 ~~TRACEABILITY AND RECALL PROCEDURES~~

2nd paragraph should be changed as follows to be consistent with the relevant Codex text on traceability/product tracing:

~~“Traceability is the ability to follow movement of the product through all stages in the supply chain from production to distribution. The traceability/product tracing system should be designed and implemented according to the Principles for Traceability/Product Tracing as a Tool within a Food Inspection and Certification System (CAC/GL 60-2006), especially to enable the withdrawal of the product, where necessary.”~~

MEXICO

Mexico reiterates its commitment to the Codex Alimentarius, and is grateful for the opportunity to make comments on the Proposed Draft Annex on Fresh Leafy Vegetables, at Step 3 of the Process:

General comments:

- In general, the document is complete.
- In the Spanish translation, the abbreviation *PON* (*Procedimientos Operativos Normalizados* [Standard Operating Procedures]) is used, although these activities are internationally known [in Spanish] as *POES* (*Procedimientos Operativos Estandarizados de Sanitacion* [or Standardized Operating Procedures in Health]), and therefore Mexico requests the term be changed throughout the document.
- Section 3.2.3.2 Health status, which is part of point 3.2 HYGIENIC PRIMARY PRODUCTION OF FRESH LEAFY VEGETABLES, mentions that “Farm and packinghouse managers should be encouraged...” however it is unclear whether these establishments are inside the growing areas when products are packaged in bulk, or if they are properly defined areas where a treatment or selection is applied in a separate area.
- Mexico supports inclusion of the phrase in brackets in point 5.7 DOCUMENTATION AND RECORDS.

NEW ZEALAND

New Zealand would like to thank the United States for preparing this document and welcomes the opportunity to comment on the Proposed Draft Annex on Fresh Leafy Vegetables (CX/FH 09/41/5) ahead of the discussion at the 41st session of the Codex Committee on Food Hygiene.

General Comments

New Zealand supports the development of the Proposed Draft Annex on Fresh Leafy Vegetables (including fresh herbs).

New Zealand suggests where the proposed draft annex lists the different forms of fresh leafy vegetables, i.e. fresh, fresh-cut, pre-cut and ready-to-eat leafy vegetables, that the term fresh-cut is included for consistency throughout the document as in the Introduction.

Specific Comments

Introduction

Paragraph 2 – New Zealand asks why the production of products for export has been identified as being a risk factor for foodborne illness opposed to the production of fresh produce for domestic consumption. New Zealand suggests deleting the reference to export so that the sentence reads “Fresh leafy vegetables are grown and harvested in large volumes, ~~often for export and~~ increasingly in places in places that are new to harvesting and distributing fresh leafy vegetables...”

Paragraph 2 – To improve the clarity of the last sentence, New Zealand suggests adding ‘After control steps at production and processing’ so that the sentence thus reads: “[After control steps at production and processing](#), there are no further processing treatment that eliminates or inactivates the target micro-organism.”

Section 1 Objective of the Annex

New Zealand suggests that the phrase “intended to be consumed without cooking’ is amended to ‘to be consumed without a further processing treatment’ as there is no internationally agreed definition of cooking.

Section 2.1 Scope

Paragraph 1 - New Zealand suggests that the process order of processing and packing is amended so that it reflects the sequence of events, i.e. “...the production, harvesting, [processing, packing](#), storage, distribution, marketing, and consumer use of...”

Section 2.2 Use

New Zealand suggests that all Codex documents are referenced in this section. The proposed draft annex suggests the use of five other documents in conjunction with it however this section only references two, whilst the other three are referenced later (the Code of Hygienic Practice for the control of *Listeria monocytogenes* in ready-to-eat foods, the Code of Hygienic Practice for Refrigerated Packaged Foods with Extended Shelf Life CAC/RCP 46-1999 and to the Code of Hygienic Practice for the Transport of Food in Bulk and Semi-Packed Food).

Section 2.3 Definitions

New Zealand suggests a definition for ‘Soil amendment’ is needed. Suggested definition is – elements added to the soil, such as compost, peat moss, or fertilizer to improve its capacity to support plant life.’

3.2.1.1 Water for primary production

Paragraph 1 - New Zealand suggests that this section should reference the WHO guidelines for drinking water and the WHO guidelines for safe use of wastewater, excreta and grey water, waste water in agriculture.

Paragraph 2, first bullet point - it should be made clear that the examples are not the sole sources of microbial contamination, New Zealand suggests that there is an addition of ‘etc.’, the sentence hence reads: “Assess the potential for microbial contamination (e.g., from livestock, human habitation, sewage treatment, manure, composting operations, [etc.](#))

3.2.1.1.1 Water for irrigation

Paragraph 3 – New Zealand proposes improving the clarity of the second sentence beginning “Reclaimed wastewater subjected to different levels of...” by including the following amendments “...specifically for irrigating fresh-leafy vegetables.”

Irrigation Method

Paragraph 2 - New Zealand suggests that the third sentence reads “Therefore, only clean water should be used for this type of irrigation.”

3.2.1.2 Manure, biosolids and natural fertilizers

Paragraph 3 - New Zealand seeks clarification on what is a ‘proper treatment of biosolids, manures and by-products’ and whether this should be ‘Effective treatment of biosolids,...’

3.2.3 Personnel health, hygiene and sanitary facilities

Paragraph 2, second bullet point - there is a recommendation that all workers should properly wash their hands using soap and clean, running water before handling leafy vegetables, particularly during harvesting, however in an agricultural environment clean, running water may not always be available. New Zealand suggests that in the absence of clean running water alternatives, for example the use of alcohol based sanitisers, could be recommended.

3.2.3.1 Personnel hygiene and sanitary facilities

Paragraph 2, third bullet point – New Zealand proposes that an alternative to the use of clean running water should be included where there is limited access to clean and/or running water.

3.2.3.3 Personal cleanliness

Paragraph 1, first bullet point – It is recommended that “Workers should wear clean clothes and bathe regularly”. New Zealand queries the relevance of this requirement to the scope of the draft proposed code of hygienic practice and whether this is a realistic expectation considering the nature of the working environment.

5.2.3 Microbiological and other specifications

Paragraph 2 - New Zealand suggests deleting the sentence “Consideration should be given to ensure proper design of a microbiological testing program.” as the requirements for the proper design of microbiological testing are covered in the first sentence of this paragraph. In the final sentence, should this be trend analysis of monitoring data rather than just testing results as there may be other parameters that could be analysed.

9.4 Consumer Education

Paragraph 3 - fourth bullet point, New Zealand suggests that ‘Washing leafy vegetables as appropriate with potable running water. Products labelled washed and ready-to-eat should not be rewashed’ is sufficiently covered by Section 9.3 Labelling as an example of labelling and therefore could be deleted.

10.2 Training Programmes

Paragraph 3, last bullet point - refers to the ‘importance of food safety training when new crops are grown for the first time’, however food safety training may be difficult due to the transient nature of the workforce, New Zealand suggests that it may be better to target all workers (bullet point 2) and initiate training with all types of crops and therefore this bullet point could be deleted

PERU

The following changes or additions are proposed:

- The following definition is proposed for Hydroponic: Hydroponic cultivation is a crop system based on different measures in water usage.

There are three concepts of hydroponic cultivation:

- Pure hydroponic cultivation, in which the only support used is a liquid medium.
- A water nutrient solution in which plants develop their roots and are attached.
- Hydroponic cultivation that uses solid substrates, which may be more or less inert and porous, through which a nutrient solution circulates.

- 3.2.3.2 Health status, should also include the following as a first paragraph:

Persons handling fresh vegetables during the different stages of production and processing, must take responsibility for microbiological and physical contamination, as they may act as vehicles for said hazards, and therefore effective health training and adoption of hygienic practices by personnel are essential.

- 5.2.3 Microbiological and other specifications, the following should be taken into account: analysis of seeds, germinated seeds and irrigation water is recommended in order to detect the presence of pathogens.

THAILAND

Agenda Item 7: Proposed Draft Annex on leafy Green Vegetables Including Leafy Herbs to the Code of Hygienic Practice for Fruits and Vegetables

Thailand appreciates the work done by the working group led by the United States. We generally support the Proposed Draft Annex however we feel that some amendments might be needed to allow more flexibility in application of this annex by small holdings.

Specific Comments

Section 2.2 Use

The last sentence indicates that this annex is intended for use by competent authority and the fresh leafy vegetable industry. It is our understanding that, industry includes for examples, grower, harvester, packer which are defined in the main Code. It is also understood that small growers, in many countries, are facing difficulties in implementing the Code by themselves and, therefore, may require some help from competent authorities and/or fresh leafy vegetables industry. We, therefore, would like to reiterate the flexibility needed for the application of the Code by small holdings as explained in the objective of the Main Code and also would like to add a sentence at the end of section 2.2 that is:

“The application of Section 3 on Primary Production by small holdings may be under supervisions by competent authorities and/or fresh leafy vegetable industry.”

Section 3.1 Environmental Hygiene

2nd paragraph, 3rd bullet

Thailand would like to seek for more information whether amphibians present a high risk of contamination to leafy green vegetables. Exclusion of amphibians from growing areas and water source is difficult to reach and may not be in line with ecological conservation policy. If this is not so necessary, we would propose to delete amphibians off this bullet.

Section 3.2.1.1.1 Water for irrigation and harvesting;

2nd paragraph under Irrigation Method

We propose that the last sentence should be amended, to read: “Therefore, only ~~the best quality of~~ clean water should be used for this type of irrigation.”

Rationale: the term “the best quality of water” has no exact meaning while clean water has been defined in the Main Code.

Section 3.2.2.5 Post-harvest storage and transport

- We propose that the first sentence of the first paragraph should be amended, to read:

“Fresh leafy vegetables are perishable products that should be carefully handled and ~~cooled-transported~~ to packing facilities as soon as possible or otherwise cooled after harvest.”

Rationale: Most growers do not have facilities for cooling vegetables. The most common measure is to transport vegetables to packing facilities as soon as possible. If this cannot be achieved then cooling can be an alternative measure.

- We are of the opinion that Section 3.2.2.5 may not be necessary since the same guidelines are presented in section 3.3.2 which is the more proper section to explain the storage and transport.

Section 3.2.3.1 Personnel hygiene and sanitary facilities

2nd bullet, 2nd sentence

We would like to suggest deleting the number of sanitary facilities per people (1 per 10 people) as this is too specific and only applied to large grower with numbers of personnel

Section 3.4.2 Cleaning procedures and methods;

2nd bullet

We wonder that while cleaning and sanitizing in Section 6 which is for packing facilities do not mention the need for validation, cleaning and sanitizing in this Section which is for primary production do mention it. We would recommend to delete this bullet since the Codex Guidelines for the Validation of Food Safety Control Measures can be applied anyway.

Section 5.2.2.3 Cooling of fresh fruits and vegetables

2nd paragraph

The methods of cooling identified in the first sentence are not inclusive. Simple hydro-cooling is also used by many packing facilities. We propose revising the first sentence, to read: “Fresh leafy vegetables are routinely cooled immediately after harvest, for example, by ~~either~~ forced-air cooling, vacuum cooling (iceberg lettuce) ~~or~~ spray-vacuum (hydrovac) cooling or hydro cooling.”

Section 9 Product information and consumer awareness

Last paragraph; 2nd sentence

We suggested deleting “($\leq 5^{\circ}\text{C}$)” off the sentence.

Rationale: Most home refrigerators are neither fixed with thermometer nor cannot maintain the temperature at 5°C or lower at all time. Moreover, suitable temperature for storage depends on type of vegetables.