



JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD HYGIENE

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PROPOSED DRAFT ANNEXES TO THE CODE OF HYGIENIC PRACTICE FOR LOW-MOISTURE FOODS

Comments submitted by Argentina, Brazil, Ecuador, El Salvador, Japan, Kenya, Mexico, Paraguay, Saint Lucia, FoodDrinkEurope

**ARGENTINA**

**General Comments**

Argentina would like to expressed the importance to have the Final Report of FAO/ RANKING OF LOW MOISTURE FOODS IN SUPPORT OF MICROBIOLOGICAL MANAGEMENT at least 45 days before the Committee, in order to have the report evaluated by our experts.

**Specific Comments**

**ANNEX IV: DRIED/DEHYDRATED FRUITS AND VEGETABLES INCLUDING EDIBLE FUNGI**

**SECTION II – SCOPE, USE AND DEFINITIONS**

**2.1 SCOPE**

1. This Annex applies to fruits and vegetables dried by natural or artificial means or a combination of both, including freeze dried. **Fruits covered by this code include** but are not limited to **apples, apricots, peaches, pears, nectarines, prunes, figs, dates, and vine fruits such as raisins and currants, bananas, cranberries, cherries, bilberries.**

The fruit or vegetable may be sliced, cubed, diced, granulated, or in other sub-divided form, or left whole prior to dehydration.

**Tree nuts are excluded from the scope of this annex.**

**Rationale:** Argentina recommends adding some examples for a better understanding of the scope of this document and we should note that tree nuts are not included.

**SECTION IV - ESTABLISHMENT: DESIGN AND FACILITIES**

3. Refer to the *General Principles of Food Hygiene* (CAC/RCP 1-1969) and the *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003).

**4.2 PREMISES AND ROOMS**

**4.2.1 Design and layout**

4. Cutting sheds in which fruit is pitted, cut or otherwise prepared and spread on trays for drying should preferably be closed buildings with screened windows that do not permit access by rodents, insects, or birds. Where cutting is done in open sheds, adequate precautions should be taken to protect against insect, rodent and bird contamination or harbourage.

**4.3 EQUIPMENT**

**4.3.1 General**

5. Equipment used for drying should be so constructed and operated that the product cannot be adversely affected by the drying medium.

## **D. Operating Practices and Production Requirements**

**[(2) Inspection and sorting. Prior to introduction into the processing line, or at a convenient point within it, raw materials should be inspected, sorted or culled as required to remove unfit materials. Such operations should be carried out in a clean and sanitary manner. Only clean, sound materials should be used in further processing.]**

**[(3) Washing or other preparation. Raw materials should be washed as needed to remove soil or other contamination. Water used for such purposes should not be recirculated unless suitably treated to maintain it in a condition as will not constitute a public health hazard. Water used for washing, rinsing, or conveying final food products should be of potable quality.]**

**[(6) Preservation of finished product. Methods of preservation or treatment of the finished product should be such as to kill any insects or mites remaining after processing and to result in protection against contamination, deterioration, or development of a public health hazard. The finished product should be of such moisture content that it can be held in the localities of origin and distribution under any normally foreseeable conditions for those localities without significant deterioration by decay, mould, enzymatic changes, or other causes.]**

Rationale: Argentina suggest keeping it from de original document because they are specific practices for DRIED/DEHYDRATED FRUITS AND VEGETABLES

## **ANNEX V: DESICCATED COCONUT**

### **SECTION V - CONTROL OF OPERATION**

5. Desiccators used for the coconut meat should not be used for the drying of coconut parings.

6. Refer to the *General Principles of Food Hygiene* and the *Code of Hygienic Practice for Fresh Fruits and Vegetables*.

### **5.2 KEY ASPECTS OF HYGIENE CONTROL SYSTEMS**

#### **5.2.2 Specific process steps**

**Inspection and sorting. At the paring and washing stage, all kernels should be inspected and any unfit, including germinated kernels, rejected. Such operations should be carried out in a clean and sanitary manner. Only clean, sound coconut meat should be permitted for further processing**

***Processing.*** After washing and before shredding, the coconut meat should be subjected to an effective process to eliminate pathogenic organisms from the surface of the meat, such as immersion in an adequate quantity of boiling water for a time sufficient to eliminate microbial pathogens from the surface.

***Handling.*** After this process, the coconut meat should not be manually handled in any way, but mechanical devices, or containers and scoops or rakes or other implements constructed of impervious materials, should be used to minimize contamination.

***Desiccating.*** Shredded coconut should be dried in a current of clean hot air free from chemical

contamination until the moisture content reaches a safe level for storage. There should be thin layering of shredded coconut on the desiccator trays, and effective methods for the breaking up of the mat should be used. After drying, the desiccated coconut should be cooled before packaging.

Rationale: Argentina suggests keeping "Inspection and sorting from de original document because they are specific practices for **DESICCATED COCONUT**

## **ANNEX VI:GROUNDNUTS (PEANUTS)**

### **2.1 SCOPE**

1. This Annex applies to groundnuts, also known as peanuts, monkey nuts or earth nuts (*Arachishypogaea*L). It covers all types and forms of raw, dried groundnuts (peanuts) in-shell and shelled.

### **2.2 Definitions**

- **Blows (pops) means in-shell nuts which are unusually light-weight due to extensive damage from physiological, mould, insect, or other causes and which can be removed, for example, by an air-separation process.**

- **Curing means drying of in-shell groundnuts (peanuts) to a safe moisture level.**

- **Farmer's stock groundnuts (peanuts) means in-shell groundnuts (peanuts) as they come from the farm, after separation from the vines by hand and/or mechanical means.**

Rationale: Argentina suggests keeping definitions. They are useful for the understanding of this annex

## **SECTION V - CONTROL OF OPERATION**

### **5.2 KEY ASPECTS OF HYGIENE CONTROLS**

#### **5.2.2 Specific Process Steps**

2. The shelled groundnuts should be continuously inspected to determine whether the plant equipment is performing properly and the groundnuts are free of foreign material, damage and contamination. Any equipment adjustments indicated by the inspection should be made promptly.
3. Once the shelled groundnuts are size graded, additional de-stoning should be done in order to remove small light stones, dirt balls and other foreign material which could not be removed in the farm stock destoners. Special care should be taken to avoid overloading size grading equipment.
4. The water activity of in-shell and shelled groundnuts (peanuts) should be low enough to prevent growth of microorganisms normal to the nut harvesting, processing and storage environment (e.g. an aw of 0.70 or less at 25°C (77°F)).

#### **Inspection and Sorting**

**Prior to introduction into the processing line, or at a convenient point within it, raw materials should be inspected, sorted or culled as required to remove unfit materials Experience has shown that aflatoxin is most frequently associated with mouldy, discoloured, shrivelled, insect damaged or otherwise damaged groundnuts. Mould contaminated groundnuts may exhibit some of the following characteristics:**

**(a) Darker skin colouring before and/or after roasting.**

**(b) Darker flesh (after blanching) before and/or after roasting.**

**(c) Resistance to splitting and/or blanching.**

**To remove mould-contaminated nuts effectively, sorting should be performed before and after blanching and roasting. Where splitting is part of the processing operation, nuts that resist splitting should be removed. The effectiveness of sorting techniques should be checked by regular aflatoxin analyses of the sorted groundnuts stream or of the finished product, or both. This should be done frequently enough to give assurance that the product is completely acceptable**

Rationale: Argentina suggests keeping it from the original document because they are specific practices for groundnuts

## **BRAZIL**

### **ANNEX I: EXAMPLES OF MICROBIOLOGICAL CRITERIA FOR LOW-MOISTURE FOODS**

The criteria for *Salmonella* in low-moisture food products intended for populations highly susceptible to foodborne infection should also consider if there are conditions to reduce risk, no change in risk or increase risk.

### **ANNEX V: DESICCATED COCONUT**

#### **2.1 SCOPE**

1. This Annex applies to desiccated coconut, the dried product prepared for human consumption without requiring further processing which is obtained by ~~shredding or otherwise~~ comminuting the pared kernel of coconuts, the fruit of the palm, ~~Cocosnucifera~~ *Cocos nucifera* L.
2. The husk, if it is not removed in the growing area, should be removed in a place separate from the factory. Deshusked nuts should be received into the ~~factory buildings~~ **premises**, and the ~~processes~~ **operations** of hatcheting, paring, and washing of the coconut meat should be carried out in a separate section from the subsequent ~~processes~~ **operations**. There should be no direct access from the hatcheting, paring, and washing sections to the other sections.
3. The ~~sections~~ **premises** should be so arranged that the coconut passes from the hatcheting, paring, and washing ~~sections~~ **rooms** through to the packing room without retracing its path or passing through an area used for ancillary activities. Precautions should be taken to prevent contamination of ~~shredding~~ **comminuting**, ~~desiccating~~ **drying**, and packing sections of the factory with dust.

Justification: Shredding should be replaced by **comminuting**, because the term shredding was considered outdated during the revision of the Codex Stan 177/1991 (Desiccated Coconut). Comminuting is broader and

includes shredding (shredders are not used at modern facilities). The term desiccating should also be replaced by **drying**, because it was the adopted terminology during the revision of the Codex Stan 177/1991 (Desiccated Coconut).

### 5.2.2 Specific process steps

**Processing.** ~~After washing and before shredding,~~ the coconut meat should be subjected to an effective ~~process~~ **treatment** to eliminate pathogenic organisms from the surface of the meat, such as **direct steam** or immersion in an adequate quantity of boiling water for a time sufficient to eliminate microbial pathogens from the surface.

Justification: The deletion is to allow flexibility and to reflect current practices. Ongoing operations prioritizes pasteurization of the product before desiccating. Pasteurization before shredding may lead recontamination after shredding and may need another decontamination step if shredded coconut needs to be on hold before desiccation

**Handling.** After this ~~process~~ **operation**, the coconut meat should not be manually handled in any way, but mechanical devices, or containers and scoops or rakes or other implements constructed of impervious materials, should be used to minimize contamination.

**Desiccating.** ~~Shredded~~ **Comminuted** coconut should be dried in a current of clean hot air free from chemical contamination until the moisture content reaches a safe level for storage. There should be thin layering of ~~shredded coconut~~ **the product** on the desiccator trays, and effective methods for the breaking up of the mat should be used. After drying, the desiccated coconut should be cooled before packaging.

## ANNEX VI: GROUNDNUTS (PEANUTS)

Brazil suggests delete the annex for groundnut (peanuts), because the provisions covered by this annex are already in the General Hygiene Codes and in Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Peanuts (CAC/RCP 55). This code should just mention the CAC/RCP 55.

## ECUADOR

### (I) Specific Comments:

Ecuador does not have specific comments to Annex I regarding Examples of Microbiological Criteria for Low-Moisture Content Foods.

## ANNEX II: GUIDANCE FOR THE ESTABLISHMENT OF ENVIRONMENTAL MONITORING PROGRAMS FOR *SALMONELLA* SPP. AND OTHER ENTEROBACTERIACEAE IN LOW-MOISTURE FOOD PROCESSING AREAS

### (I) Specific Comments:

Ecuador requests the inclusion of the following in Paragraph 5, point (d) Tools and methods for sampling:

i. It is important to choose and adapt the type of sampling tools and techniques to the type of surface and sampling locations. For example, scraping of residues from surfaces or collection of residues from vacuum cleaners may provide useful samples, and moistened sponges may be appropriate for large surfaces. **For the microbiological quality of air, exposure slides can be used** Sampling tools and techniques may need to be validated to demonstrate effective recovery of the target organisms. In areas requiring stringent hygiene controls, wipes and sponges should be slightly moistened (not wet or dripping) to collect as much residue as possible. After sampling, care should be taken to ensure the area is completely dry after the sampling

### (ii) General Comments:

The country is considering approving and supporting the document, taking into consideration the above-mentioned comments.

## ANNEX III: SPICES AND DRIED AROMATIC HERBS

### (i) Specific Comments:

Ecuador suggests modifying the definition of spices and dried aromatic herbs to:

**Spices and Dried Aromatic Herbs** – ~~dried components or mixtures of dried plants~~ used in foods for flavouring, colouring, and imparting aroma. **It includes plants or parts of plants (roots, rhizomes, bulbs, leaves, bark, flowers, fruit and seeds).** This term equally applies to whole, broken, ground and blended forms

**(ii) General Comments:**

After analyzing the rest of the document, the country has decided to approve most of it.

**ANNEX IV: DRIED OR DEHYDRATED FRUITS AND VEGETABLES INCLUDING EDIBLE FUNGHI****(I) Specific Comments:**

The country does not have any specific comments to Annex IV.

**ANNEX V: DESICCATED COCONUT****(i) Specific Comments:**

Ecuador believes that in Section V, number 5.2.2 Specific process steps, the following should be included:

**Final product monitoring. - before packaging the final product a physical control of general residue (for example, metal residue) and microbiological residue should take place.**

**(ii) General Comments:**

The country is considering approving and supporting the document, taking into consideration the above-mentioned observations.

**ANNEX VI: GROUNDNUTS (PEANUTS)****(i) Specific Comments:**

Ecuador does not have any specific comments to the document referenced.

**EL SALVADOR****General Observations:****ANNEX I:**

We suggest maintaining this Annex.

**ANNEX VI:**

We suggest expanding the Annex for Groundnuts (Peanuts) to include pathogens of concern (bacteria, Molds (mycotoxins)).

**Specific Observations:**

1. Annex I, Paragraph 1: [Translator's note: this change applies only to the Spanish version]
2. Annex I, Paragraph 3: correct:
3. "... as well as the<sup>1</sup> intended population [especially when such a population may be more susceptible to foodborne ~~infection~~ **diseases**].<sup>1</sup> [Translator's note: this change applies only to the Spanish version].
3. Salmonella Table: (comma missing) [Translator's note: this change applies only to the Spanish version].
4. Annex II, Paragraph 4: Delete the word "should".
4. "The sampling approach may be adjusted according to the (previous) findings and, where appropriate, ~~should~~-include sampling ..."
5. Annex II, Paragraph 5: Item (e) (i):
  - i. "...to detect, with acceptable sensitivity, the target organisms." [Translator's note: this change applies only to the Spanish version].

**JAPAN****General Comments**

The draft Annex I should provide the sufficient background information about the examples of microbiological criteria so that users (i.e. food business operators, governments) can apply the microbiological criteria for low-moisture foods in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods* (CAC/GL 21-1997) and the main document of the Code. Japan proposes that references of scientific information provided from JEMRA reports\* (i.e. *Salmonella* prevalence, disease burden) should be added to the draft Annex I for helping users to consider the need and purpose for the microbiological criteria for low-moisture foods, which have diversity of ingredients, processes, and control measures of the products and various degrees of risk.

\* *Report of an FAO/WHO Consultation Process: Ranking of Low Moisture Foods in Support of Microbiological Risk Management* (to be published), *Summary Report of the Joint FAO/WHO Expert Meeting on Microbiological Hazards in Spices and Dried Aromatic Herbs* (to be published).

## **Specific Comments**

### **Annex I**

#### **Throughout the document**

“Salmonella” should be presented in italic font.

#### **Throughout the document**

“Food safety criterion/criteria” should be replaced by “microbiological criterion/criteria”.

*Rationale:* The term “food safety criterion/criteria” is not defined and used in the current Codex documents.

#### **Para 1, 1<sup>st</sup> sentence:**

**While the safety of foods is principally achieved through the implementation of control measures,** ~~m~~Microbiological testing can be a useful tool to evaluate and verify the effectiveness of food safety and food hygiene practices, provide information about process control, and even a specific product lot, when sampling plans and methodology are properly designed and performed.

*Rationale:* Refer to general comments. (Please see the Spice and Herbs report, P.8.)

#### **Para 4, 3<sup>rd</sup> sentence:**

Microbiological testing alone may convey a false sense of security **the achievement of the appropriate level of control** due to the statistical limitations of sampling plans, particularly when the hazard presents an unacceptable risk at low concentrations and has a low and variable prevalence.

*Rationale:* For the clarification.

#### **Para 5, 1<sup>st</sup> sentence:**

**Low Salmonella prevalence and various degrees of disease burden involving low-moisture foods should be considered when establishing a microbiological criterion.** Low-moisture foods include many different types of products.

*Rationale:* Refer to general comments. (Please see the Low-Moisture Foods report, P.21 in Part I and P.21 in Part II.)

#### **Table, note\*\*, 2<sup>nd</sup> sentence:**

... The geometric mean concentration detected is 1 cfu in 120 g of product if the within lot standard deviation is assumed to be 0.5 log cfu/g. ...

*Rationale:* Editorial.

### **Annex IV**

#### **Para 8, 2<sup>nd</sup> and 3<sup>rd</sup> sentences:**

Fruits and vegetables may be dried naturally, e.g. air dried, or mechanically, provided adequate measures are taken to prevent contamination of the raw material during the process. ~~Where fruits or vegetables are dried by the sun in drying yards, such yards should be recognized as food processing yards. Such yards should as far as possible comply with such of the provisions of Section IV of the General Principles of Food Hygiene.~~

For additional information relevant to drying, refer to Sections 3.3.3 and 5.2.1.1 in the Annex III on Spices and Dried Aromatic Herbs.

*Rationale:* To avoid redundancy. (The Section 2.2 in the main document of the Code mentions that the Code, including Annexes, should be used in conjunction with the *General Principles of Food Hygiene*. In addition, the Section 3.3.3 in the Annex III on Spices and Dried Aromatic Herbs covers the provisions regarding outdoor drying already.)

## **KENYA**

### **ANNEX I: EXAMPLES OF MICROBIOLOGICAL CRITERIA FOR LOW-MOISTURE FOODS**

3. Where appropriate, specifications for pathogenic microorganisms, such as *Salmonella* spp., should be established that take into account subsequent processing steps, the end use of the low moisture food, the conditions under which the product was produced, as well as the intended population. ~~[especially when such a population may be more susceptible to foodborne infection].~~

Comment: We propose the deletion of part of clause 3 demonstrated above.

Justification: The meaning is implied in the same clause 3 as “the intended population”.

### **ANNEX II: GUIDANCE FOR THE ESTABLISHMENT OF ENVIRONMENTAL MONITORING PROGRAMS FOR *SALMONELLA* SPP. AND OTHER ENTEROBACTERIACEAE IN LOW-MOISTURE FOOD PROCESSING AREAS**

(b) Sampling locations, number of samples and timing

iii. It is important to conduct environmental sampling, particularly for *Salmonella*, after several hours of production in order to detect microorganisms transferred from harbourage sites. There should be adequate sampling of all manufacturing shifts and production periods within these shifts to the extent possible. Additional samples or EB testing just prior to start-up are good indices of the effectiveness of cleaning operations.

Comment: We propose the addition of “to the extent possible” on the second sentence of clause iii (b) as demonstrated above.

Rationale: To make the sampling practical.

(c) Frequency of sampling

ii. The frequency of the environmental ~~monitoring program~~ sampling should be adjusted according to the findings and their significance in terms of the risk of contamination. In particular, the detection of pathogens in the finished product should lead to increased environmental and investigational sampling to identify the contamination sources. The frequency should also be increased in situations where an increased risk of contamination can be expected, e.g. in the case of maintenance or construction activities, a contamination event, or following wet cleaning activities.

Comment: We propose the replacement of “monitoring program” with “sampling” in clause c(ii) above as demonstrated.

Rationale: For clarity in the clause and be aligned to the subtitle “frequency of sampling”.

### **ANNEX III: SPICES AND DRIED AROMATIC HERBS**

#### **4.4 FACILITIES**

##### **4.4.8 Storage**

27. Spices and dried aromatic herbs are susceptible to mould contamination and/or growth if storage conditions are not appropriate. Spices and dried aromatic herbs should be stored in an environment ~~with humidity~~ that does not result in product moisture that can support the growth of moulds.

Comment: We propose the deletion of “with humidity” in clause 27.

Rationale: For clarity of the clause

## **SECTION V - CONTROL OF OPERATION**

### **5.1 CONTROL OF FOOD HAZARDS**

28. Measures should be taken at each step in the food chain to minimize the potential for contamination of spices and dried aromatic herbs by microbial pathogens (including mycotoxin-producing moulds), chemical contaminants and other foreign materials such as excreta, rodent hair, insect fragments and other foreign materials.

Comment: we propose the addition of “and other foreign materials such as” in clause 28.

Rationale: For proper grouping and clarity in the statement.

#### **5.2.5 Physical and chemical contamination**

44. Appropriate ~~machines~~ tools and methods should be used to remove physical hazards such as pebbles or heavier stones. To separate foreign matter from the product, air tables or gravity separators can be used for

particles of the same size and different density. Sieves of different diameters may be used to obtain the size required for each product and to remove foreign matter.

Comment: We propose the deletion of “machines” and replacement with “tools and methods” in clause 44.

Rationale: Machines are not only the equipment /tools used for removal of physical hazards.

45.Regardless of the type of separator used, the following parameters should be considered: size of particles, density, weight and size, air speed, inclination of the sieve plate, vibration, etc. For the highest effectiveness of the procedure.

46.Magnets/metal detectors should be used to detect and separate ferrous from non-ferrous/metallic matter. For good extraction, magnets should be as close as possible to the product from which the metals are to be extracted. Magnets work more efficiently when product flows freely. If needed, more than one magnet should be placed in the line. Magnets should be cleaned frequently. Equipment should be designed in such a way as to prevent metals extracted by magnets from being swept by the flow of product. Spices and dried aromatic herbs should be arranged in a fine layer to facilitate this operation.

Comment: We propose addition of “to the product from which the metals are”

Rationale: Addition to the statement for clarity.

## 5.4 PACKAGING

52.Non-porous bags/containers should be used to protect the spices and dried aromatic herbs from contamination and the introduction of moisture, insects and rodents. In particular, the reabsorption of ambient moisture in humid tropical climates should be prevented. Contamination should be prevented by the use of liners where appropriate. It is recommended that new bags or containers be used for food contact packaging. If reusable containers are used, they should be properly cleaned and disinfected before use. All bags/containers should be in good condition and particular attention paid to the potential for loose bag fibres that can become potential contaminants. Secondary containment bags/containers providing additional protection can be reused but should not have been previously used to hold non-food materials such as chemicals or animal feed.

Comment: We propose deletion of “ in humid tropical climate” in clause 52.

Rationale: Similar conditions exist elsewhere not only in tropical climates.

53. Spices and dried aromatic herbs, e.g. dried chilli peppers, should not be sprayed with water to prevent breakage during packing. This may result in growth of moulds and microbial pathogens, if present.

54. Finished products may be packed in gas tight containers preferably under inert gases like nitrogen or under vacuum in order to retard possible mould growth.

## SECTION VI - ESTABLISHMENT: MAINTENANCE AND SANITATION

### 6.2 CLEANING PROGRAMMES

60. Wet cleaning may be appropriate in certain circumstances, e.g. when *Salmonella* has been detected in the environment. Wet cleaning should be followed by disinfection with ~~an alcohol-based~~ a food grade disinfectant that will rapidly evaporate after contact and then by thorough drying.

Comment: We propose the deletion of “an alcohol based” and replacement with “a food grade” disinfectant in clause 60.

Rationale: Alcohol based disinfectants is a broad spectrum and so the food grade disinfectants are more specific.

### 6.4 WASTE MANAGEMENT

62. Care should be taken to prevent access to waste by pests. Refer to the CAC/RCP 1-1969

Comment: we propose the referencing of CAC/RCP 1 1969 – General Principles of Food Hygiene

Rationale: CAC/RCP 1-1969 Is more elaborate.

### 6.5 MONITORING EFFECTIVENESS

63. Verification of hygienic control measures ~~sanitation~~ should include an environmental monitoring program that has been designed to identify pathogens such as *Salmonella* in the processing areas. (Refer to Annex II.)

Comment: We propose the deletion of “sanitation” and replacement with “hygienic control measures” in clause 63



Rationale: To be consistence with other codex standards and related texts.

## **SECTION VIII – TRANSPORTATION**

64.Refer to the *Code of Practice for the Packaging and Transport of Fresh Fruit and Vegetables* (CAC/RCP 44-1995). In addition, bulk transport of spices and dried aromatic herbs, such as by ship or rail, should be well ventilated with dry air to prevent moisture condensation, e.g. resulting from respiration and when the vehicle moves from a warmer to a cooler region or from day to night. Prior to bulk transport, the products must be dried to a safe moisture level to prevent germination and growth of moulds and mould spores.

Comment: We propose the addition of “moulds and” in clause 64.

Rationale: some fungi (moulds) and their spores are spices and aromatic herbs and with that addition the clause becomes clear.

## **ANNEX IV: DRIED/DEHYDRATED FRUITS AND VEGETABLES INCLUDING EDIBLE FUNGI SECTION II – SCOPE, USE AND DEFINITIONS**

### **2.1 SCOPE**

This Annex applies to fruits and vegetables dried by natural or artificial means or a combination of both ~~including freeze dried~~. The fruit or vegetable may be sliced, cubed, diced, granulated, or in other sub-divided form, or left whole prior to dehydration.

Comment: Deletion of including freeze dried in clause 1.

Rationale: Its one of artificial means of drying.

### **4.2 PREMISES AND ROOMS**

#### **4.2.1 Design and layout**

4. Cutting sheds in which fruit is pitted, cut or otherwise prepared and spread on trays for drying should preferably be closed buildings with screened windows that do not permit access by rodents, insects, or birds. Where cutting is done in open sheds, adequate precautions should be taken to protect against insect, rodent and bird contamination or harbourage. Where practicable, adequate measures should be implemented to keep the moisture as low to the extent possible in the establishments.

Comment: Addition of statement “Where practicable, adequate measures should be implemented to keep the moisture as low to the extent possible in the establishments”

Rationale: The main objective of this annex is to keep the water activity as low for the low moisture foods.

## **SECTION V - CONTROL OF OPERATION**

### **5.1 CONTROL OF FOOD HAZARDS**

7. Methods of preservation or treatment of the finished product should be such as to ~~kill~~eliminate any insects or mites remaining after processing and to result in protection against contamination, deterioration, or development of a public health hazard. The finished product should be of such moisture content that it can be distributed and held under any normally foreseeable conditions without significant deterioration by decay, mould, enzymatic changes, or other causes.

Comment: Replacement of “kill” with “eliminate”

Rationale: A more scientific term to mean the same.

### **5.2 KEY ASPECTS OF HYGIENE CONTROL SYSTEMS**

#### **5.2.2 Specific process steps**

##### **5.2.2.1 Drying**

8. Fruits and vegetables may be dried naturally, e.g. air dried, or mechanically, provided adequate measures are taken to prevent contamination of the raw material during the process. Where fruits or vegetables are dried by the sun in drying yards, such yards should be recognized as food processing yards. Such yards should as far as possible comply with ~~such of the~~ provisions of Section IV of the *General Principles of Food Hygiene*.

Comment: Correction of grammar by deletion of “such of the” in clause 8 above.

Rationale: For clarity in the clause.

9. For additional information relevant to drying, refer to Sections 3.3.3 and 5.2.1.1 in the Annex III on Spices and Dried Aromatic Herbs.

## **ANNEX V: DESICCATED COCONUT SECTION II – SCOPE, USE AND DEFINITIONS**

### **2.1 SCOPE**

This Annex applies to desiccated coconut, the dried product prepared for human consumption without requiring further processing which is obtained by shredding or otherwise comminuting the pared kernel of coconuts, the fruit of the palm, ~~Cocos nucifera~~. *Cocos nucifera*.

Comment: Separation of “*Cocosnucifera*” into two words genus and species “*Cocos nucifera*”

Rationale: Scientifically the Two words genus and species names should be separated.

### **2.3 DEFINITIONS**

*Coconuts* - coconuts consist of an outer skin (green or brown when harvested) enclosing a thick fibrous coating or husk; inside the husk is a woody shell which encloses the kernel and which is separated from it by a brown skin. The pared kernel consists of a solid white layer enclosing an aqueous liquid known as coconut water.

Comment: The definition of coconuts is not satisfying but rather an explanation.

We propose the definition as “Coconut – The fruit of the coconut palm *Cocos nucifera*; a large hard shelled seed lined with a white edible meat and containing a milky liquid”

Rationale: A definition should be precise and clear.

*Coconut meat* - white solid layer of the kernel.

*Dehusking* - the removal of the husk, leaving the shell intact.

*Hatcheting* - the removal of the shell.

*Paring* - the removal of the brown skin around the kernel.

Comment: We propose the definition of retting to be included on the definitions.

Retting: To prepare for further processing by soaking which facilitates separation of fibres from the woody parts of the stem.

Rationale: It's technical term and needs to be defined for clarity.

## **ANNEX VI: GROUNDNUTS (PEANUTS)**

### **SECTION V - CONTROL OF OPERATION**

#### **5.2 KEY ASPECTS OF HYGIENE CONTROLS**

##### **5.2.2 Specific Process Steps**

2. The shelled groundnuts should be continuously inspected to determine whether the plant equipment or any other appropriate process is performing properly and the groundnuts are free of foreign material, damage and contamination. Any equipment adjustments indicated by the inspection should be made promptly.

Comment: We propose the addition “.... or any other appropriate process.....” in clause 2.

Rationale: The shelling process is prescriptive and doesn't have to be by machines.

Once where the shelled groundnuts are size-graded, additional de-stoning should be done in order to remove small light stones, dirt balls and other foreign material which could not be removed in the farm stock de- stoners. Special care should be taken to avoid overloading size grading equipment.

Comment: We propose the replacement of “once” with “where” and deletion of “size” in clause 2.

Rationale: Grading is not confined to sizing only but also variety and others.

## **MEXICO**

### **General Comments**

Mexico requests a general review of the document's translation into Spanish. In the individual comments for each annex, observations are made on content, drafting and translation.

## Individual Comments

Comments on Annex I: examples of microbiological criteria for low moisture foods.

Paragraph	COMMENTS	JUSTIFICATION
1	...Provide information about process control and even a specific product <b>lot</b> when sampling plans and methodology are properly designed and performed.	Comment on the translation into Spanish.
2	<del>See the</del> <b>The provisions presented in this document are complemented with the</b> <i>General Principles of Food Hygiene</i> (CAC/RCP 1-1969) and the <i>Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods</i> (CAC/GL 21-1997).	To clearly explain the relationship between this project and the referenced Codex documents.
3	...specifications for pathogenic microorganisms, such as Salmonella spp., should be established that take into account <del>following</del> <b>subsequent</b> processing steps, the end use of the low moisture food, the conditions under which the product was produced, as well as the intended population [especially when such a population may be more susceptible to foodborne infection].	Comment on the translation into Spanish.  Likewise, Mexico is in favor of keeping the text within square brackets; we believe it is important to take the needs of vulnerable groups into consideration.
5	** The sampling plan performance is the geometric mean concentration (grams containing one cell) at which the sampling plan will reject a lot with 95% confidence. The geometric mean concentration detected is 1 cfu in 49 g of product if the within lot standard deviation is assumed to be 0.5 log cfu/g.	Comment on the translation into Spanish, remove asterisk (*).
5	The methods to be employed should be <b>selected according to established recommendations in the Principles and Guidelines for establishing and applying microbiological criteria related to foods (CAC/GL 21-1997)</b> <del>the most recent ISO 6579 editions or other validated methods that</del>	Mexico thinks that it is more convenient for the writing to be more generalized in this point.
Paragraph	COMMENTS	JUSTIFICATION
	<del>provide equivalent sensibility, reproducibility, reliability.</del>	

Comments to Annex II: Guidelines for the establishment of environmental monitoring programs for *Salmonella* spp. and other Enterobacteriaceae present in processing areas for low moisture foods.

Paragraph	COMMENTS	JUSTIFICATION
3	Environmental monitoring <b>sampling</b> sites should be prioritized according to the likelihood of contamination of processing lines and the impact on product in case of contamination. At a minimum, <b>sampling</b> should involve non-food contact surfaces that are in close proximity to food and food contact surfaces.	Comment on the translation into Spanish.
4	The sampling approach may be adjusted according to the (previous) findings and, where appropriate, <del>should</del> include sampling from additional locations and/or from <b>finished</b> product, as part of corrective actions...	Comment on the translation into Spanish.
5	(A) <del>targets</del> <b>target</b> organisms	Comment on the translation into Spanish.
5	(b) Sampling locations, number of samples and timing i. ... and the intended use of the food (e.g. specialized nutritional products <del>for the treatment of moderate and severely acute malnutrition</del> vs. ingredients for further processing).	Mexico suggests not limiting specialized nutritional products solely to those for treating malnutrition, since specialized products include a wide variety.
5	b) Sampling locations, number of samples and timing ii ... depending on special situations such as major maintenance or construction activities or <del>important</del> where there is observed indication of poor hygiene..	Comment on the translation into Spanish.
5	(C) Frequency of sampling i ... Such data should be collected over sufficiently long periods of time so as to provide representative and reliable information on the prevalence and occurrence of <i>Salmonella</i> .	Mexico requests that the term "sufficiently long periods" be further clarified.
5	(e) Analytical Methods	Drafting comment, in order to clarify the

	i. The <del>analytical</del> methods used to analyse environmental samples should be suitable for the detection of the target organisms <b>with an acceptable sensitivity level</b> . Special focus should be paid to the characteristics of food matrices in order to adapt the preparation of food samples where food residues are tested <b>which should be adequately documented</b> . <del>Taking into consideration the environmental sample traits, it is important to demonstrate that the methods can detect target organisms with an acceptable sensibility acceptable level. This should be adequately documented.</del>	ideas in this paragraph.
Paragraph	COMMENTS	JUSTIFICATION
	Under <b>certain</b> circumstances, it may be possible to <b>composite</b> (pool) certain samples but if this is done then the sensitivity of the microbiological testing method should not be reduced. <del>However,</del> <b>In</b> the case of positive findings, additional testing will be necessary to determine the location of the positive sample.	

Comments to Annex VI: about peanuts (cacahuete).

Paragraph	COMMENTS	JUSTIFICATION
Title	Annex <del>IV</del> <b>VI</b> : ANNEX ON PEANUTS ( <del>CACAHUETE</del> <b>CACAHUATE</b> )	Proposed term for translating “peanuts” into Spanish: “cacahuates”.

## **PARAGUAY**

The document has been reviewed, and we are in agreement with the technical content, therefore, we have no objections to it; however, we suggest bearing in mind the grammatical errors in the Spanish version, which could possibly be due to translation errors.

## **SAINT LUCIA**

### **(i) General Comments**

Saint Lucia recognizes that there is a challenge for developing countries, particularly small island developing states to conduct testing required to establish microbiological criteria for low moisture foods. As such the work done is commendable given that examples provided in Annex I and further guidance and requirements proposed in other annexes will continue to be important to such countries, if accepted and adopted as part of the Code of Hygienic practice for low moisture foods.

### **(ii) Specific Comments**

Annex II -- Paragraph 5 – (d); (e); (f)

Editorial comment: There is no need to number sub paragraphs as only one paragraph exists in each case.

Annex III – Paragraph 27

Paragraph should focus on the facility storage area design and functionality and not the storage of items which has already been captured in section 3.3.2 (Paragraph 13 & 14).

Consider rewording paragraph 27 to

~~Spices and dried aromatic herbs are susceptible to mould contamination and/or growth if storage conditions are not appropriate. Spices and dried aromatic herbs should be stored in an environment with humidity that does not result in product moisture that can support the growth of moulds.~~

**“Facilities for the storage of spices and dried aromatic herbs should be designed and constructed to prevent high humidity or result in high moisture levels that would support the growth of moulds.”**

Annex IV& V

Saint Lucia fully supports the work done by the eWG and supports the proposals for addition of text and rearranging of Annexes IV and V as proposed.

Annex VI

Saint Lucia supports the inclusion of the proposed Annex VI on groundnuts which should remain in the standard given high risk associated with consumption of ground nuts reference to aflatoxins and potential

contaminants. Some elements are covered in different standards as noted, however the annex provides supplementary information that is important to the application of the Code.

## **FOODDRINKEUROPE**

### **ANNEX I: EXAMPLES OF MICROBIOLOGICAL CRITERIA FOR LOW-MOISTURE FOODS**

Salmonella absent in 125 g

#### **SAMPLING**

5 random samples of 50 g are to be collected from the shipment.

The 5 samples will be mixed to a composite sample.

The composite sample is the basis for all laboratory investigations, including salmonella.

As you can see from above, instead of 5 samples at 25 g (as proposed in Annex I to the Draft Code for products for which the potential risk decreases), the practice is to take 5 random samples of 50 g, mix them to a composite sample and take this sample as the basis for all laboratory investigations, including salmonella. This procedure has proved to be effective. The limits mentioned above are checked regularly against the results of the industry's annual survey. The data shows that salmonella were detected in some samples of raw materials, which confirm that the sampling procedure is appropriate. The European tea industry recently established the same specification for Salmonella in tea (*Camellia sinensis*) on basis of monitoring results. We therefore recommend to consider this experience of the industry should the proposed Draft Annex be developed further.