codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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Agenda Item 5 **CX/FH 00/5**
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD HYGIENE

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PROPOSED DRAFT CODE OF HYGIENIC PRACTICE FOR PRE-CUT FRUITS AND VEGETABLES (AT STEP 3)

(Prepared by France with the assistance of Canada, Chile, Denmark, India, Japan, Mexico, the Netherlands, Sweden, United Kingdom, and the United States of America)

Governments and interested International Organizations are invited to submit comments or information on the attached Draft Code at Step 3 (see Annex) and should do so in writing in conformity with the Uniform Procedure for the Elaboration of Codex Standards and Related Texts (see *Procedural Manual of the Codex Alimentarius Commission, Eleventh Edition, pages 23-24)* **to:** Mr. S. Amjad Ali, Staff Officer, Food Safety and Inspection Service, US Department of Agriculture, Room 4861, 1400 Independence Avenue, S.W., Washington DC, 20250 USA, Fax: 1 (202) 720-3157, or email: uscodex@usda.gov with a copy **to:** Secretary, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, FAO, viale delle Terme di Caracalla, 00100 Rome, Italy, by Fax. +39 (06) 5705.4593 or email: Codex@fao.org **before 10 September 2000**.

Background

In response to growing concerns over fresh fruits and vegetables as a source of food-borne diseases, the Codex Committee on Food Hygiene (CCFH), at its 30th Session, proposed to begin work on a Code of Hygienic Practice for the Primary Production, Harvesting and Packaging of Fresh Fruits and Vegetables and asked the Canadian delegation to prepare a discussion paper. At the same session, it also proposed to begin work on a Code of Hygienic Practice for Ready-to-Eat Pre-cut Raw Fruits and Vegetables (ALINORM 99/13, para.108) and asked the French delegation to prepare a second discussion paper (with the participation of the following countries: Canada, Japan, Guatemala, Mexico, Netherlands, United Kingdom, United States and Uruguay). The 45th Session of the Executive Committee, while approving the development of the Code as part of its new work (ALINORM 99/3, para. 28 and Appendix 3), noted that careful attention needed to be paid to the increasing workload of the CCFH.

After considering this question, the 31st Session of the Committee decided that the Canadian and French

delegations respectively, in co-operation with two drafting groups, would develop the discussion papers as two Proposed Draft Codes, presented at Step 3 of the 32nd Session of the Codex Alimentarius Committee on Hygiene.

At this 32nd session, the Committee discussed the advisability of consolidating the two codes or continuing to develop them separately. France mentioned the many links and common points between the two documents. It noted in particular the fact that the Proposed Draft Code on Fresh Fruits and Vegetables covers the processing of these products (Item 5: Control of Operations, Time and Temperature Control, Use of Water after Harvesting, Chemical Treatments, Cooling, Cold Storage, etc.). Other delegations, however, stressed the importance of keeping two separate codes at this stage, considering that one was more agricultural and the other more industrial but noted the possibility of combining them at a later time.

The Committee decided that the two codes be discussed separately at this step and that the drafting groups for each should work in close co-operation. It was also decided that the two proposed drafts would be sent back to Step 3 for the next session.

With regard to the present document on ready-to-eat pre-cut fruits and vegetables, this version reflects the various remarks made by certain delegations, particularly in terms of its scope, which no longer refers to fresh fruit or vegetable juices.

PROPOSED DRAFT CODE OF HYGIENIC PRACTICE FOR PRE-CUT FRUITS AND VEGETABLES

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INTRODUCTION

Scientific research over the last decades has shown that a diet rich in fruits and vegetables is protective against many cancers and lowers the occurrence of coronary heart disease. This recognition of the importance of routine consumption of fresh fruits and vegetables, together with an on-going consumer interest in ready-to-eat fresh foods have contributed to a substantial increase in consumption of fresh pre-cut fruits and vegetables over the past two decades. However, the recent increase in reports of food borne illness associated with ready-to-eat fresh fruits and vegetables has raised concerns from public health agencies and consumers about the safety of these products.

1. OBJECTIVE

The recommendations for the primary production of fresh fruits and vegetables are covered under the *Draft Code of Practice for the Primary Production and Packing of Fresh Fruits and Vegetables*. This present draft code deals with good manufacturing practices (GMP) for all stages involved in the production of ready-to-eat fresh pre-cut fruits and vegetables, from receipt of raw materials to distribution of finished products. It provides a general framework of recommendations that can be adopted uniformly by the sector rather than offering detailed recommendations concerning activities or products. The fresh produce industry is very complex. A wide variety of fruits and vegetables are processed and packaged under variable climatic and environmental conditions. For this reason, this code is flexible by necessity and can be adapted to various systems used to control and prevent contamination in various food groups.

The primary objective of this code is to identify GMPs that will help control microbiological, physical, and chemical hazards associated with the processing of fresh pre-cut fruits and vegetables. Particular attention is given to minimizing microbiological hazards. This code provides elements that must be taken into account in the production, processing and distribution of these foods.

2. SCOPE, USE AND DEFINITIONS

2.1 SCOPE

This code specifically applies to ready to eat fresh fruit and vegetables that have been peeled, cut or otherwise physically altered from their original form but remain in the fresh state and particularly those that are intended to be consumed raw. This code applies irrespective of where the operations take place (e.g. in the field, at the farm, at the retailer, at the wholesaler, at the processing establishment, etc.)

For some establishments that process fresh pre-cut fruit and vegetables, this code will cover all operations from receipt of raw material to the distribution of the final product. For other establishments, (e.g. those that use ready to eat pre-cut fresh fruit and vegetables in combination with other products, such as sauces, meat, cheese, etc.) only the specific sections that relate to the processing of the fresh pre-cut fruit and vegetable components will apply.

This code does not directly apply to fresh fruit and vegetables that have been trimmed leaving the food intact. Nor does it apply to other fresh fruit and vegetables that are pre-cut but are destined for further processing that

would be expected to eliminate any pathogen that may be present (e.g. cooking, juice processing, fermentation). However, some of the basic principles of the code could still be applicable to such products.

Packaging includes single serving containers (e.g., sealed pouches or plastic trays), larger consumer or institutional size packages and bulk containers. This code concentrates on microbial hazards and addresses physical and chemical hazards only in so far as these relate to GMPs.

2.2 USE

This document must be consulted in conjunction with the *Recommended International Code of Practice – General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 3-1997*, whose format it follows. This code contains only the recommendations complementing the General Principles necessary to take into account the requirements of plant-based foodstuffs that it specifically deals with. The part of this code relating to primary production refers to the provisions [under development] of the *Code of Hygienic Practice for Primary Production and Packing of Fresh Fruits and Vegetables*, which should be applied to the production of the raw materials used for preparation of the products considered in this code.

2.3 DEFINITIONS

Definitions of general expressions are included in the *General Principles of Food Hygiene*. For the purpose of this code, the following terms have the definition stated:

Clean water - water that does not contain pathogenic microorganisms [or chemicals] at levels that compromise food safety.

Potable water - water which meets the quality standards of drinking water such as described in the WHO Guidelines for Drinking Water Quality.

Micro-organisms -include yeasts, moulds, bacteria, viruses and parasites. When used as an adjective, the term "microbial" is used.

Processor - the person responsible for the management of the activities associated with the production of ready-to-eat fresh pre-cut fruits and vegetables.

Recycled or Reused Water - [need a definition from Codex proposed code for hygienic reuse processing water]

3. PRIMARY PRODUCTION

Refer to *Code of Hygienic Practice for Primary Production and Packing of Fresh Fruits and Vegetables*.

4. ESTABLISHMENT: DESIGN AND FACILITIES

These recommendations are added to those specified in section 4 of the *Recommended International Code of Practice - General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 3-1997.*

4.4 FACILITIES

4.4.2 Drainage and Waste Disposal

The processing of products covered by this code generates a large quantity of waste that can serve as food and shelter for pests. It is therefore very important to plan an effective waste disposal system. This system should always be maintained in good condition.

5. CONTROL OF OPERATIONS

5.1 CONTROL OF FOOD HAZARDS

For the products covered by this Code it should be recognised that while processing may reduce the level of contamination initially present on the raw materials, it will not be able to guarantee elimination of such contamination. Consequently, the processor should ensure that steps are taken by their suppliers (growers, harvesters, packers and distributors) to minimise contamination of the raw materials during primary production. It is recommended that processors ensure that their suppliers have adopted the principles outlined in the *Draft Code of Hygienic Practice for the Primary Production and Packaging of Fresh Fruits and Vegetables*.

There are certain pathogens; Listeria monocytogenes and Clostridium botulinum, which present specific concern in relation to ready to eat fresh pre-cut vegetables packaged in a modified atmosphere. Processors should ensure that they have addressed all relevant safety issues relating to the use of such packaging.

5.2 KEY ASPECTS OF CONTROL SYSTEMS

5.2.2 Specific Process Steps

5.2.2.1 Receipt of raw materials

Inspect incoming produce delivery trucks for cleanliness and raw materials for evidence of contamination.

5.2.2.2 Trimming/Coring/Inspection of Raw Materials

Physical hazards (such as the presence of animal and plant debris, metal, and other foreign material) should be removed through manual sorting or the use of detectors, such as metal detectors.

5.2.2.3 Washing and decontamination

Water quality management will vary throughout all operations. Processors should follow GMPs to minimize the potential for the introduction or spread of pathogens in processing water. The quality of water used should be dependent on the stage of the operation. For example, clean water could be used for initial washing stages, whereas water used for final rinses should be of potable quality.

- Processing activities that use water should be designed in a manner to minimize places where product lodges and dirt builds up.

- Where appropriate, effective disinfectants could be used to minimize cross-contamination during processing activities. The disinfectant levels should be monitored and controlled to ensure that they are maintained at effective concentrations. Application of disinfectants, followed by a wash as necessary, should be done to ensure that chemical residues do not exceed levels as recommended by [CCPR?, WHO?].

- Where appropriate, the temperature of the post-harvest water should be controlled and monitored.

- Recycled water should be treated and maintained in conditions that do not constitute a risk to the safety of fresh fruits and vegetables. The treatment process should be effectively monitored and controlled.

- Recycled water may be used with no further treatment provided its use does not constitute a risk to the safety of fresh fruits and vegetables (e.g. use of water recovered from the final wash for the first wash).

- Ice should be made from potable water. Ice should be produced, handled and stored to protect it from contamination.

5.2.2.4 Pre-cooling Fresh Fruits and Vegetables

- Condensate and defrost water from evaporator type cooling systems (e.g. vacuum cooling, cold rooms) should not drip onto fresh fruits and vegetables. The inside of the cooling systems should be maintained clean.

- Potable water should be used in cooling systems where water or ice is in direct contact with fresh fruits and vegetables (e.g. hydro cooling, ice cooling). The water quality in these systems should be controlled and maintained.

- Forced-air cooling is the use of rapid movement of refrigerated air over fresh fruits and vegetables in cold rooms. Air cooling systems should be appropriately designed and maintained to avoid contaminating fresh produce.

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

Procedures should be in place to minimize contamination with physical (e.g. metal) and microbial contaminants during cutting, slicing, shredding or similar pre-cut processes.

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

When possible, washing cut produce with potable water may reduce microbial contamination. In addition, it removes some of the cellular fluids that were released during the cutting process thereby reducing the level of available nutrients for microbial growth. The following should be considered:

- Water should be replaced at sufficient frequency to prevent the build-up of organic material and prevent cross-contamination.

- When appropriate, drying or draining to remove water after washing may be important to minimize

microbial growth.

5.2.2.7 Cold Storage

- When appropriate, fresh fruits and vegetables should be maintained at low temperatures after cooling to minimize microbial growth. The temperature of the cold storage should be controlled and monitored.

- Condensate and defrost water from the cooling system in cold storage areas should not drip on to fresh fruits and vegetables. The inside of the cooling systems should be maintained in a clean and sanitary condition.

5.4 PACKAGING

Refer to the *General principles of Food Hygiene*.

5.5 WATER

Refer to the *General principles of Food Hygiene*.

5.6 MANAGEMENT AND SUPERVISION

Refer to the *General principles of Food Hygiene*.

5.7 DOCUMENTATION AND RECORDS

Records should be maintained to adequately reflect product information, such as product formulations or specifications and operational controls. Maintaining adequate documentation and records of processing operations is important in the event of a traceback with fresh pre-cut fruits and vegetables. Records should be kept long enough to facilitate trace back and foodborne illness investigations, if required. This period will likely be much longer that the shelf life of the product. Some examples of records to keep are the following:

- Fresh fruit and vegetable supplier records
- Water quality and supply records
- Equipment monitoring and maintenance records
- Equipment calibration records
- Sanitation records
- Product processing records
- Pest control records
- Distribution records

5.8 RECALL PROCEDURES

Refer to the *General principles of Food Hygiene*.

6. ESTABLISHMENT: MAINTENANCE AND SANITATION

No specific requirements other than those set out in the *Recommended International Code of Practice – General Principles of Food Hygiene,* CAC/RCP 1-1969, Rev. 3-1997, are necessary.

7. ESTABLISHMENT: PERSONNEL HYGIENE

No specific requirements other than those set out in the Recommended International Code of Practice – General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 3-1997, are necessary.

8. TRANSPORTATION

No specific requirements other than those set out in the *Recommended International Code of Practice – General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 3-1997,* are necessary.

9. PRODUCT INFORMATION AND CONSUMER AWARENESS

No specific requirement other than those set out in the *Recommended International Code of Practice – General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 3-1997,* are necessary.

10. TRAINING

No specific requirements other than those set out in the *Recommended International Code of Practice – General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 3-1997,* are necessary.

10.2 TRAINING PROGRAMS

To evaluate the level of training required of persons responsible for the processing and packing of fresh pre-cut fruits and vegetables, the following factors must be taken into account:

- the nature of the fruits or vegetables, particularly with regard to their capacity to support the growth of pathogenic micro-organisms;
- the task that the employee will be called upon to perform and the hazards and controls associated with this task;
- the method of packaging fresh fruits and vegetables, including the risks of contamination or microbial growth involved in this method;
- the scope and nature of processing activities and preparation activities carried out by the consumer before final use of the product.

The subjects to be covered as part of the training include:

- the importance of good health and hygiene practices for personal health and food safety;
- the importance of hand washing and using the required techniques for this purpose;
- the importance of using sanitary facilities to reduce the risks of contamination of fresh products, other workers and water reserves.