

# codex alimentarius commission



FOOD AND AGRICULTURE  
ORGANIZATION  
OF THE UNITED NATIONS

WORLD  
HEALTH  
ORGANIZATION



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Agenda Item 12

CX/FAC 05/37/16-Add. 1  
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## JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

Thirty-seventh Session

The Hague, the Netherlands, 25 – 29 April 2005

### DISCUSSION PAPER ON THE TERMS OF REFERENCE FOR THE FAO/WHO JOINT EXPERT CONSULTATION TO CONDUCT A COMPREHENSIVE ASSESSMENT OF USE OF ACTIVE CHLORINE (ASPECTS RELEVANT TO CCFAC)

#### Comments

The following comments have been received from: USA and Cuba

#### **CUBA:**

We are in agreement with the document, it is excellent. We have no new comments on it.

#### **USA:**

This responds to CX/FAC 05/37/16 (November, 2004), *Discussion Paper on the Terms of Reference for the FAO/WHO Joint Expert Consultation to Conduct a Comprehensive Assessment of Use of Active Chlorine (Aspects Relevant to CCFAC)*, which requests comments on the proposed terms of reference for a Joint FAO/WHO Expert Consultation on the risks and benefits associated with the treatment of food, and food processing water, with active chlorine. The discussion paper also requests information on active chlorine treatments of food that have not been identified in the discussion paper. The United States of America appreciates the opportunity to provide the following comments for consideration at the forthcoming 37<sup>th</sup> Session of the CCFAC.

The United States agrees with the discussion paper that the terms of reference that are within the purview of the CCFAC are limited to the following two points: (i) the toxicological risks associated with possible residues of active chlorine compounds, and their reaction by-products, that are relevant to the uses of active chlorine in or on food, or food processing water; (ii) and any possible adverse effects on quality, or nutrient content of the treated food. We believe that the scope of the consultation should be limited to direct application of active chlorine compounds to food and to food-contact surfaces during in-line processing. The scope of the consultation should not include the use of active chlorine compounds for cleaning or sanitizing food-contact surfaces of food-processing equipment or utensils post-production line operation, nor the use of chlorine for the purpose of modifying food ingredients such as modified food starches. We understand that the terms of reference for the proposed risk assessment that relate to the utility of active chlorine treatments of food, and food processing water, will be defined in cooperation with the Codex Committee on Food Hygiene.

The United States suggests that care should be exercised in drafting a request for the evaluation of information relevant to this risk assessment. It is important to ensure that the response from the Expert Consultation will best meet the needs of CCFAC when developing recommendations on risk management options that minimize potential risks associated with known active chlorine interventions. While the discussion paper provides a good beginning for defining the terms of reference of such an expert consultation, after some consideration, the United States proposes that these terms of reference (para. 25) be amended to read as follows:

“CCFAC requests the expert consultation to evaluate the available information relating to the use of active chlorine compounds in or on food, and in food processing water, for the purpose of controlling detrimental microorganisms, or for preventing food spoilage, and address the following issues:

- a. “consumer exposure to the active chlorine species used to treat food or process water under the conditions of use identified by Codex;
- b. identify persistent active chlorine reaction by-products resulting from such use;
- c. consumer exposure to identified and persistent active chlorine reaction by-products;
- d. toxicological risk to the consumer resulting from the treatment of food with the identified active chlorine interventions including risks associated with the active chlorine –compounds and their persistent reaction by-products;
- e. organoleptic effects, and effects, if any, on the nutrient content of the treated food, including differences in these effects between commodities, as well as between poultry and beef carcasses and their respective parts.”

The United States believes that these amended terms of reference neither over-specify, nor under-specify the charge to the proposed Expert Consultation.

In addition, the United States notes, for clarification, that the explanatory text at the top of Appendices I through V should refer to Annex I, rather than Appendix 6, for providing additional information on other active chlorine interventions. The United States also suggests the following minor corrections to the Appendices of the discussion paper if they will be expanded and forwarded to the committee conducting the Expert Consultation:

1. The heading of the second table of Appendix 4 should read “Hypochlorite/Hypochlorous Acid (I)” rather than “Hypochlorite/Hypochlorous Acid (III).”
2. The heading of the fourth table of Appendix 4 should read “Chlorine Dioxide (IV)” rather than simply “Chlorine Dioxide” to be consistent in the other Appendices.

The United States also notes that there are no specific limitations on the treatment time or application temperature in Appendices I-IV. We believe this to be appropriate since the treatment time and application temperature have not been regarded as critical parameters in FDA’s safety evaluations, provided that the intervention is performed in accordance with current industry standards of good manufacturing practice.

Finally, the United States notes the following conditions of use of active chlorine compounds in or on food that have been approved in the United States, but are not now listed in the Appendices to the discussion paper:

1. In Appendix 5, additional tables for sodium/potassium dichloroisocyanurate and trichloroisocyanurate listing the following uses:

**Sodium or Potassium Dichloroisocyanurate**

<b>Conditions</b>	<b>Use 1</b>
<b>Method of Application</b>	Spray, dip, or brush-on
<b>Food/Food Type Restrictions</b>	Shell Eggs
<b>Stage of Processing</b>	Egg Wash
<b>Use Level (mg/kg)</b>	Up to 1326 total available chlorine
<b>Exposure Time</b>	
<b>Temperature</b>	
<b>pH</b>	
<b>Additional Requirements</b>	wash solution at least 11°C warmer than the eggs

**Trichloroisocyanurate**

<b>Conditions</b>	<b>Use 1</b>
<b>Method of Application</b>	Spray, dip, or brush-on
<b>Food/Food Type Restrictions</b>	Shell Eggs
<b>Stage of Processing</b>	Egg Wash
<b>Use Level (mg/kg)</b>	up to 971 total available chlorine
<b>Exposure Time</b>	
<b>Temperature</b>	
<b>pH</b>	
<b>Additional Requirements</b>	wash solution at least 11°C warmer than the eggs

2. In Appendix 2, the following use under Chlorite/Chlorous Acid (III)<sup>1</sup>

**Chlorite/Chlorous Acid (III)**

<b>Conditions</b>	<b>Use 5</b>	<b>Use 6</b>
<b>Method of Application</b>	Spray or dip	Immersion
<b>Food/Food Type Restrictions</b>	processed, comminuted or formed poultry products	poultry meat, organs, or related parts or trim
<b>Stage of Processing</b>	Post chill spray or dip	Chiller tank
<b>Use Level (mg/kg)</b>	500-1200	50
<b>Exposure Time</b>		2.2 hour/kg up to 2.7 kg, maximum 8 hours
<b>Temperature</b>		below 4.5° C
<b>pH</b>	2.3-2.9	6.0-7.0
<b>Additional Requirements</b>		

<sup>1</sup> United States Department of Agriculture, Food Safety Inspection Service Directive 7120.1, Amendment 2, Attachment 1.

3. In Appendix 1, the following new table should be added. We note that this use does not fit directly into any one of the current tables in Appendix 1 because it presents a combined use of chlorite/chlorous acid and chlorine dioxide

**<sup>2</sup>An aqueous solution of sodium chlorite and chlorine dioxide containing up to 1200 mg/kg sodium chlorite and up to 30 mg/kg chlorine dioxide.**

<b>Conditions</b>	<b>Use 1</b>
<b>Method of Application</b>	Spray or dip
<b>Food/Food Type Restrictions</b>	red meat, red meat parts and organs, and on processed, comminuted, and formed meat products
<b>Stage of Processing</b>	
<b>Use Level (mg/kg)</b>	Up to 1200 (chlorite) Up to 30 (chlorine dioxide)
<b>Exposure Time</b>	
<b>Temperature</b>	
<b>pH</b>	5.0-7.5
<b>Additional Requirements</b>	produced by mixing an aqueous solution of sodium chlorite with any generally recognized as safe acid to achieve a pH in the range of 2.2 to 3.0, then further diluting this solution with a pH elevating agent such that the resultant sodium chlorite concentration does not exceed 1200 mg/kg, and the chlorine dioxide concentration does not exceed 30 mg/kg

4. In Appendix 3, the following use under Hypochlorite/Hypochlorous acid (I)<sup>3</sup>

<b>Conditions</b>	<b>Use 2</b>
<b>Method of Application</b>	Spray or dip
<b>Food/Food Type Restrictions</b>	Seafood
<b>Stage of Processing</b>	
<b>Use Level (mg/kg)</b>	Up to 10 mg/kg
<b>Exposure Time</b>	
<b>Temperature</b>	
<b>pH</b>	
<b>Additional Requirements</b>	

5. In Appendix 1, the following uses under Hypochlorite/Hypochlorous acid (I) and Chlorite/Chlorous Acid (III)

**Hypochlorite/Hypochlorous acid (I)**

<b>Conditions</b>	<b>Use 2</b>
<b>Method of Application</b>	Injection by hypochlorinator on intake side of water pump
<b>Food/Food Type Restrictions</b>	Process water used in meat plants, applied to beef hide surfaces
<b>Stage of Processing</b>	Introduction to plant
<b>Use Level (mg/kg)</b>	Up to 200
<b>Exposure Time</b>	
<b>Temperature</b>	
<b>pH</b>	
<b>Additional Requirements</b>	Regular testing to assure proper chlorine residuals Proposed use

<sup>2</sup> Food Contact Substance Notification No. 250.

<sup>3</sup> Generally Recognized as Safe in the United States.

**Chlorite/Chlorous Acid (III)**

<b>Conditions</b>	<b>Use 5</b>
<b>Method of Application</b>	Spray or dip
<b>Food/Food Type Restrictions</b>	red meat, red meat parts, organ meat, processed, comminuted or formed meat products
<b>Stage of Processing</b>	Prior to packaging
<b>Use Level (mg/kg)</b>	Up to 20 available chlorine
<b>Exposure Time</b>	
<b>Temperature</b>	
<b>pH</b>	6.0-7.0
<b>Additional Requirements</b>	