

codex alimentarius commission



FOOD AND AGRICULTURE
ORGANIZATION
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Agenda Item 14 (d)

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**JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS**

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**PROPOSED DRAFT CODE OF PRACTICE FOR THE REDUCTION OF CHLOROPROPANOLS
DURING THE PRODUCTION OF ACID HYDROLYZED VEGETABLE PROTEIN (HVPS) AND
PRODUCTS THAT CONTAIN ACID HVPS**

COMMENTS AT STEP 3

The following comments have been received from: Canada, European Community and IHPC

CANADA:

Canada congratulates the UK delegation for the work it has done, both in the preparation of the earlier Discussion Paper as well as in this Draft Code of Practice. This paper represents starting point towards the elaboration of a Code of Practice that can effectively minimize the presence of chloropropanols in acid-hydrolysed vegetable proteins and products containing acid-hydrolysed vegetable proteins. Nevertheless, as stated in the background of the proposed draft Code of Practice, additional information is required to further develop the Code of Practice into an effective and practical guidance document. With this in mind, Canada supports the call for additional information, as stated in Paragraphs 4 and 5 of the Background. As such information becomes available, Canada suggests further work to incorporate into the document more specific guidance about how to reduce chloropropanol levels. Canada would also be pleased to provide additional editorial comments in regard to the current proposed draft Code of Practice if required by the delegation of the United Kingdom.

EUROPEAN COMMUNITY:

The European Community and its Member States (ECMS) fully supports the elaboration of Code of Practice for the reduction of chloropropanols in acid-hydrolysed vegetable proteins (acid-HVP) and products that contain acid HVPs as the presence of chloropropanols in food is of concern due to their toxicological properties.

Data on the presence of 3-MCPD in acid-hydrolysed vegetable proteins (Acid-HVPs) and products that contain HVPs indicate clearly the possibility to reduce the presence of chloropropanols by applying good practices.

This Code of Practice is being developed as a means of disseminating best practice to assist manufacturers, particularly in developing countries, to take action to reduce the levels of 3-MCPD in their products. It is deplorable that no sufficient information has been provided on procedures that are currently used at commercial scale production to reduce 3-MCPD levels in HVP production.

The ECMS is of the opinion that the CCFAC should call upon governments of producing countries and relevant non-governmental professional organisations to provide information on procedures that are currently used at commercial scale production to reduce 3-MCPD levels in HVP production in order to include this information in the Code of practice making the Code more effective.

In order to include this important and essential information in the draft Code of Practice, the ECMS is of the opinion that **it is appropriate to retain the Code of Practice at Step 3 until this information is provided and included in the Code of Practice**

In addition the ECMS has following editorial comments:

- clarification should be provided as regards the way of referring to the references (20.19, 20.20)
 - in § 11, the words “US” should be deleted.

IHPC:

The IHPC thanks the United Kingdom for leading the preparation of the proposed draft Code of Practice for the Reduction of Chloropropanols in Acid-Hydrolyzed Vegetable Proteins (Acid-HVPs) and Products that Contain Acid-HVPs (hereinafter referred to as “COP”). IHPC appreciates the opportunity to offer the following comments and recommended changes to the proposed draft COP. Our general and paragraph-specific comments are provided below.

General Comment

We note at the outset that, in our opinion, it is premature to establish a COP on this issue because the steps that could be implemented to reduce 3-MCPD in acid-HVPs are dictated by the maximum level (ML) of 3-MCPD that ultimately is established. We agree that there are two primary strategies for controlling 3-MCPD levels: one involving the acid hydrolysis process and the other involving subsequent alkaline treatment. Each of these processes incorporates variable and proprietary combinations of time, temperature, and acid-concentration parameters that individual manufacturers must consider while producing acid-HVPs with specific organoleptic properties. Whether 3-MCPD controls during the acid hydrolysis process or through subsequent alkaline treatment are needed likely will depend on the ML established and an individual manufacturer’s ability to incorporate these controls into its proprietary processes. Therefore, the proposed draft COP should not be interpreted as outlining a prescribed set of 3-MCPD controls that industry must follow.

Paragraphs 2 and 3

The phrase “During this hydrolytic stage the acid also reacts with residual lipids present in the defatted meal from oil seeds such as soyabean and other plant materials utilised ...” in paragraph 2, and the phrase “... the mode of formation also involves acidic hydrolysis of residual lipids” in paragraph 3 represent a hypothesis that implies that the use of soy isolate or other 100% defatted protein would result in acid-HVPs or soy-related condiments with no 3-MCPD content. It has been our experience that 3-MCPD will continue to form even when using defatted raw materials. We recommend adding the following sentence to clarify this point at the end of paragraph 2: “Chloropropanol formation cannot be avoided through the use of defatted protein sources.”

We also believe that the last sentence of paragraph 3 should be amended to read: “As with acid-HVP, the mode of formation again involves acidic hydrolysis of residual lipids and other plant materials utilized.”

Paragraph 10

We recommend adding the following two sentences to the beginning of paragraph 10:

The manufacturing process for acid-HVPs will vary depending on the desired organoleptic properties of the end product. The source of the raw material, pH of the acid, the temperature of the reaction, the time of the reaction, and other factors will significantly impact the organoleptic properties of the finished product. A general description of the acid-HVP manufacturing process is as follows; however, depending on the end product, different processes can be utilized.

We also recommend replacing 130°C with 150°C because it has been our experience that some processes could involve this higher temperature.

Paragraph 12

Paragraph 12 should be deleted in its entirety because this discussion is not relevant to the best practices that are used to reduce 3-MCPC levels. The paragraph also oversimplifies an amazingly complex issue that cannot easily be addressed in a single paragraph. While we recognize that it may be possible to produce some acid-HVPs with 3-MCPD levels below 0.1 mg/kg, it is not possible to produce all acid-HVPs with acceptable organoleptic properties and levels of 3-MCPD below 0.1 mg/kg. Indeed, it has been our experience that the organoleptic properties in many of our acid-HVPs are adversely impacted when the 3-MCPD levels goes below 0.1 mg/kg. The mere existence of some commercially available acid-HVPs with 3-MCPD levels below 0.1 mg/kg, therefore, does not support the statements made in this paragraph that it is feasible to produce organoleptically acceptable products with less than 0.1 mg/kg 3-MCPD.

Paragraph 14

We believe the third sentence in paragraph 14 should be deleted because it describes conditions that are specific to only defatted soybeans and does not describe the conditions that may be utilized for other proteinaceous raw materials. If the third sentence is included, we recommend that it be revised as follows, which clarifies that it is merely providing an example:

For example, the total nitrogen content of defatted soybeans, a common raw material, varies between 7.8 and 8.0% wet weight basis. Therefore, in order to obtain products of even quality in commercial practice, the hydrochloric acid concentration should be adjusted to achieve a hydrochloric acid/total nitrogen ratio of 1.0 to 1.3. The total nitrogen content and hydrochloric acid/total nitrogen ratio may differ depending on the raw material used.

Paragraph 15

The second to last sentence of paragraph 15 does not accurately describe the range of alkaline treatment conditions in industrial acid-HVP manufacturing. The sentence should be revised to read: “In the industrial scale manufacture, alkaline treatment is commonly conducted at a pH of 8 to 9, with temperatures and times of treatment varying widely – in inverse proportions – based on the treatment design employed.”

Paragraph 16

Paragraph 16 should be deleted because it implies that the 3-MCPD controls in both the acid hydrolysis and alkaline treatment steps (described in paragraphs 14 and 15, respectively) must always be utilized when, in fact, the COP would not establish such a requirement. If this reference is included in this document, we recommend revising the sentence by clarifying that this as an example of a reduction that has been reported by replacing “should be consistently” with “has been reported.”

Paragraphs 19 and 20

The last sentence of paragraph 19 and 20, respectively, should be deleted because the level of 3-MCPD in the soy sauce will depend on the manufacturing process utilized.