

## **14. IOFI GUIDELINES FOR THE PRODUCTION OF THERMAL PROCESS FLAVOURINGS**

### **14.1 Introduction**

The Codex Alimentarius Guidelines (CAC/GL 66-2008) states that flavourings may consist of flavouring substances, natural flavouring complexes, smoke flavourings or thermal process flavourings. The purpose of this section is to provide guidance on the production and use of thermal process flavourings in countries that have no regulatory provisions covering this type of product. National regulations, if in existence and even if they do not use a special term to define thermal process flavourings, will always take precedence over these Guidelines.

### **14.2 Scope**

14.2.1 These Guidelines deal with thermal process flavourings only. They do not apply to foods, flavouring extracts, chemically defined flavouring substances or mixtures of flavouring substances and flavour enhancers.

14.2.2 These Guidelines define those raw materials and process conditions which are similar to the cooking of food and which are process flavourings that are admissible without further evaluation.

### **14.3 Definition**

A thermal process flavouring is a product prepared for its flavouring properties by heating raw materials that are foodstuffs or constituents of foodstuffs. This process is analogous to the traditional home cooking of ingredients of plant and animal origin.

### **14.4 Basic Standards of Good Manufacturing Practice**

14.4.1 The requirements laid down in Chapter 7 of the IOFI Code of Practice are also applicable to process flavourings.

14.4.2 Process flavourings shall be prepared in accordance with the Codex Alimentarius General Principles of Food Hygiene (CAC/RCP 1-1969, Rev.4-2003)

## **14.5 Raw Materials that are Subject to Thermal Processing**

Raw materials for process flavourings shall consist of one or more of the following:

### 14.5.1 Protein nitrogen sources:

- Foods containing protein nitrogen (meat, poultry, eggs, dairy products, fish, seafood, cereals, vegetable products, fruits, yeasts) and their extracts
- Hydrolysis products of the above, autolyzed yeasts, peptides, amino acids and/or their salts.

### 14.5.2 Reducing Sugars

- Examples: Maltose Syrup, glucose, fructose, galactose

### 14.5.3 Fat or fatty acid sources:

- Foods containing fats and oils
- Edible fats and oil from animal, marine or vegetable origin
- Hydrogenated, transesterified and/or fractionated fats and oils
- Hydrolysis products of the above.

### 14.5.4 Other raw materials listed in Table 1 below

## **14.6 Ingredients that may be Added After Thermal Processing**

14.6.1 Flavourings as defined in the Codex Guidelines for the use of flavourings CAC/GL 66-2008 and flavour enhancers as defined by CAC/GL 36-1989.

14.6.2 Suitable non-flavouring food ingredients as listed in Annex I.

## **14.7 Preparation of Process Flavourings**

Process flavourings are prepared by processing together raw materials listed under 14.5 as follows:

14.7.1 The product temperature during processing shall not exceed 180°C.

14.7.2 The processing time shall not exceed ¼ hour at 180°C, with correspondingly longer times at lower temperatures, i.e., a doubling of the heating time for each decrease of temperature by 10°C.

14.7.3 The pH during processing shall not exceed 8.

14.7.4 Flavourings, (14.6.1) and non-flavouring food ingredients (14.6.2) shall only be added after processing is completed, unless otherwise specified.

**TABLE 1**  
**Materials Used in Processing**

- Foodstuffs, herbs, spices, their extracts and flavouring substances identified therein.
- Water
- Thiamine and its hydrochloric acid salt
- Ascorbic acid
- Citric acid
- Lactic acid
- Fumaric acid
- Malic acid
- Succinic acid
- Tartaric acid
- The sodium, potassium, calcium, magnesium and ammonium salts of the above acids
- Guanylic acid and inosinic acid and its sodium, potassium and calcium salts
- Inositol
- Sodium, potassium- and ammonium sulfides, hydrosulfides and polysulfides
- Lecithin
- Acids, bases and salts as pH, regulators:
  - Acetic acid, hydrochloric acid, phosphoric acid, sulfuric acid
  - Sodium, potassium, calcium and ammonium hydroxide
- The salts of the above acids and bases
- Polymethylsiloxane as antifoaming agent (not participating in the process).