

## **13. GUIDELINES ON THE IOFI INTERPRETATION OF THE TERM “NATURAL”**

### **13.1 Introduction**

The purpose of these Guidelines is to provide guidance on the IOFI interpretation of the term “natural” as used in the IOFI terminology (Chapter 3-Definitions) and the Codex Alimentarius Guidelines for the Use of Flavourings (CAC/GL 66-2008 ó Annex III). The application of the Code of Practice, including its Annexes does not relieve individual manufacturers from the obligation to comply with all national or international regulations that pertain to their operations. These regulations, including official guidelines and rulings and officially condoned practices, will take precedence over these Guidelines. In those countries where corresponding specific legislation are not in force, the Code of Practice should serve as a best practices resource.

### **13.2 Raw Materials**

Raw materials, which are used as a source for natural flavourings, are materials of animal, vegetable or microbiological origin. Sources for natural flavouring complexes and natural flavouring substances are the essential oils, oleoresins, extractives, distillates, or products of roasting, heating or enzymatic transformations of spices, fruit or fruit juice, vegetable or vegetable juice, edible yeast, herb, bark, bud, root, leaf or similar plant material, meat, seafood, poultry, eggs and other animal products, dairy products, or fermentation products thereof.

### **13.3 Isolation Techniques**

All physical processes may be used for the isolation of natural flavouring complexes or natural flavouring substances. pH adjustment may be used for the isolation of acidic and basic materials.

### **13.4 Biochemical Processes for Natural Flavouring Complexes, Concentrates and Natural Flavouring Substances**

#### **13.4.1 Organisms and Enzymes**

Biological entities capable of self-replication or resulting from biological reproduction such as bacteria, yeast, fungi, plants and animals, in whole or in part, and enzymes derived thereof, are permitted for producing natural flavourings.

#### 13.4.2 Substrates

If the substrates used to produce natural flavourings by biochemical processes are natural, as defined in the other sections of this document, then the end products isolated from such processes are considered natural flavourings.

#### 13.4.3 Co-factors, Nutrients, Vitamins, Hormones and pH-adjusting Agents

Materials added to the substrate necessary for the growth and function of the organism(s) such as co-factors, minerals, nutrients, vitamins, hormones, pH adjusting agents and electromagnetic radiation are not restricted in origin, but they may not exceed the levels required for the purpose of maintaining the growth and function of the organism(s) or parts thereof.

#### 13.4.4 Carrier System

The carrier system may be aqueous or non-aqueous. Natural substrates can be used as carriers. Non-natural carriers can only be used if they do not react irreversibly and do not serve as a substrate. Carriers may remain in the final mixture provided they are permitted as carrier solvents for natural flavourings.

### 13.5 Other Processes for Natural Flavouring Complexes and Natural Flavouring Substances

Processing conditions are permissible if they are used in food processing or in-home preparation, or occur in nature. See examples in Table 1.

Table 1. Examples of food preparation processes

Absorption	Filtration
Adsorption	Grinding
Crystallization	Heating
Cutting	Mixing
Distillation	Osmoses
Drying (spray drying, freeze drying etc.)	Precipitation
Emulsification	Roasting
Encapsulation	Squeezing
Extraction	Sublimation
Extrusion	Ultrasonic treatment

### 13.6 Additional Provisions

The use of singlet oxygen or ozone is not allowed during processing.

### 13.7 Classification of Salts

Salts of natural flavouring substances with the following cations  $\text{NH}_4^+$ ,  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Ca}^{++}$  and  $\text{Fe}^{+++}$  or the anions  $\text{Cl}^-$ ,  $\text{SO}_4^{--}$  and  $\text{CO}_3^{--}$  are classified as natural flavouring substances.