15. IOFI GUIDELINES FOR THE PREPARATION OF SMOKE FLAVOURINGS

15.1 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 smoke 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 smoke flavourings, will always take precedence over these Guidelines.

15.2 Scope

These guidelines deal with flavourings used for the purpose of imparting a smoke-type flavour to foodstuffs. These guidelines do not apply to foods, flavourings extracted from smoked foodstuffs or to flavourings obtained by compounding chemically defined flavouring substances. National regulations, if in existence, will always take precedence over these Guidelines. This includes the existence of specific definitions, rulings and officially condoned practices.

15.3 Definition

Smoke flavourings are complex mixtures of components of smoke obtained by subjecting untreated wood to pyrolisys in a limited and controlled amount of air, dry distillation, or superheated steam, then subjecting the wood smoke to an aqueous extraction system or to distillation, condensation, and separation for collection of the aqueous phase. The major flavouring principles of smoke flavourings are carboxylic acids, compounds with carbonyl groups and phenolic compounds.

15.4 Basic Standards of Good Manufacturing Practice

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

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

15.5 Production of Smoke Flavourings

15.5.1 Raw materials

Untreated wood, bark and twigs of the following non-exhaustive list of species are used for the generation of smoke.

Acer negundo L.	Maple tree
Betula pendula Roth. (with ssp.B.alba L. and B. verrucosa Ehrh.)	White birch
Betula pubescens Ehrh.	European birch
Carpinus betulus L.	Hornbeam
Carya ovata (Mill.) Koch (C.alba (L).Nutt.)	Hickory
Castanea sativa Mill.	Chestnut tree
Eucalyptus sp.	Eucalyptus
Fagus grandifolia Ehrh.	Beech
Fagus silvatica L.	Beech
Fraxinus excelsior L.	Common ash
Juglans reglia L.	Walnut tree
Malus pumila Mill.	Apple
Prosopis juliflora DC., P. velutenia	Mesquite wood
Prunus avium L.	Cherry tree
Quercus alba L.	White oak
Quescus ilex L.	Holm oak
Quercus robur L (Q. pedunculata Ehrh.)	Common red oak
Rhamnus frangula L.	Alder Buckthorn
Robinia pseudoacacia	Black locust
Ulmus fulva Michx.	Sweet elm
Ulmus rubra Mühlenb.	Elm

Herbs and spices may also be added as well as twigs of Juniper (Juniper communis) and twigs, needles and cones of Pines.

15.5.2 Non flavouring food ingredients

Substances listed as non flavouring food ingredients in the Annex I.

15.6 Production Conditions

Smoke flavourings are prepared as follows:

15.6.1 By subjecting various untreated hardwoods to

- controlled burning, or
- dry distillation, or
- treatment with superheated steam and condensation
- and capturing of those fractions which have the desired flavour potential.

15.6.2 Then by applying further isolation techniques to the fractions obtained under 15.6.1 in order to retain only the flavour-important fractions or components.

15.6.3 The temperature during dry distillation is between 200°C and 600°C, and the treatment with superheated steam is between 300°C and 600°C

15.6.4 The solvents used for extraction and their residues are listed in Annex II.