

Appendix II

General methods for the detection of irradiated foods

(For recommendation to CCMAS to transfer the methods of analysis to the *Recommended Methods of Analysis and Sampling* (CXS 234-1999))

New texts added are shown in **bold/underlined** font. Texts proposed for deletion are shown in strikethrough

Commodity	Provision	Method	Principle	Type
Food containing fat <u>(e.g. raw meat and chicken, cheese, fruits)</u>	Detection of irradiated food - <u>Detection of radiation-induced hydrocarbons</u>	EN 1784: 1996	Gas chromatographic analysis of hydrocarbons	Type II
Food containing fat <u>(e.g. raw meat and chicken, liquid whole egg)</u>	Detection of irradiated food - <u>Detection of radiation-induced 2-alkylcyclobutanones</u>	EN 1785 ¹ : 1996	Gas chromatographic/mass spectrometric analysis of 2-alkylcyclobutanones	Type III
Food containing bone	Detection of irradiated food - <u>Radiation induced Electron Spin Resonance (ESR) signal attributed to hydroxyapatite (principal component of bones)</u>	EN 1786: 1996	ESR spectroscopy	Type II
Food containing cellulose <u>(e.g., nuts and spices)</u>	Detection of irradiated food - <u>Radiation induced Eletron Spin Ressonance (ESR) signal attributed to crystalline cellulose</u>	EN 1787: 2000	ESR spectroscopy	Type II
Food containing silicate minerals <u>(e.g. herbs, spices, their mixtures and shrimps)</u>	Detection of irradiated food - <u>Thermoluminescence glow ratio used to indicate the irradiation treatment of the food</u>	EN 1788: 2004	Thermoluminescence	Type II
Food containing silicate minerals <u>(e.g. shellfish, herbs, spices, seasonings)</u>	Detection of irradiated food - <u>Measurement of photostimulated luminescence intensity</u>	EN 13751 ² : 2002	Photostimulated luminescence	Type III
Food containing crystalline sugar <u>(e.g. dried fruits and raisins)</u>	Detection of irradiated food - <u>Radiation induced Electron Spin Resonance (ESR) signal attributed to crystalline sugar</u>	EN 13708: 2004	ESR spectroscopy	Type II

Herbs <u>and</u> spices and raw minced meat ³	Detection of irradiated food - <u>Difference between total microorganism count and viable microorganism count</u>	EN 13783:2001 NMKL 231 (2002)	Direct Epifluorescent Filter Technique/Aerobic Plate Count (DEFT/APC) (screening method)	Type III
Food containing DNA (<u>e.g. food products, both of animal and plant origin such as various meats, seeds, dried fruits and spices</u>)	Detection of irradiated food - <u>Detection of DNA fragmentation presumptive to irradiation treatment.</u>	EN 13784:2001	DNA comet assay (screening method)	Type III

1 One Member noted that 2-alkylcyclobutanone was also present in some non-irradiated foods and hence EN1785 may need further consideration as a method for detection of irradiated foods.

2 Consideration should be given whether EN13751 should be specified as a screening method.

3 No information was found on validation of the method for this commodity.