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Titolo	Metal contamination of food [[electronic resource]] : its significance for food quality and human health // Conor Reilly
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Nota di contenuto	Metal Contamination of Food; Contents; Preface to the third edition; Preface to the second edition; Preface to the first edition; Part I: The Metals We Consume; 1 Introduction; 1.1 Ash; 1.1.1 Ash and the early food analysts; 1.1.2 A nineteenth-century view on food ash; 1.1.3 Ash in the modern food laboratory; 1.2 The metals in food; 1.2.1 Chemical properties of the metals; 1.2.2 Representative and transition metals; 1.3 Distribution of the metals in the environment; 1.3.1 Metals in human tissue; 1.3.2 Metals in soil; 1.3.2.1 Soil as a source of plant trace elements 1.3.2.2 Variations in the metal content of soils 1.3.2.3 Soil metal availability; 1.3.2.4 Metal transport and location within the plant; 1.3.2.5 Soil metal speciation; 2 Metals in food; 2.1 The metal components of food; 2.2 Why are we interested in metals in food?; 2.2.1 Functions of the trace elements; 2.2.2 New trace elements; 2.3 The toxic metals; 2.4 Effects of metals on food quality; 2.5 How much metal do we consume with our food?; 2.5.1 Estimating metal intakes;

2.5.1.1 Surveillance methods for assessing intake; 2.5.1.2 Duplicate diet method for intake estimation
2.5.2 Comparison of methods of assessment of metal intakes
2.6 Assessing risks from metals in food; 3 Metal analysis of food; 3.1 The determination of metals in foods and beverages; 3.1.1 The first step in analysis: obtaining a representative sample; 3.1.2 Prevention of contamination; 3.1.3 Drying of samples; 3.1.4 Purity of chemical reagents and water; 3.1.5 Glassware and other equipment; 3.2 Preparation of samples for analysis: digestion of organic matter; 3.2.1 Dry ashing; 3.2.2 Wet digestion techniques; 3.2.2.1 Nitric acid digestion; 3.2.2.2 Nitric-sulphuric acids digestion
3.2.2.3 Use of perchloric acid
3.2.2.4 Hydrofluoric acid; 3.2.3 Microwave digestion; 3.3 End-determination methods for metal analysis; 3.3.1 Atomic absorption spectrophotometry (AAS); 3.3.1.1 Background correction; 3.3.1.2 Use of slurries and flow injection in AAS; 3.3.1.3 Speeding up AAS; 3.3.2 Spectrofluorimetry; 3.3.3 Inductively coupled plasma spectrometry (ICP-S); 3.3.3.1 Inductively coupled plasma atomic emission spectrometry (ICP-AES); 3.3.3.2 Inductively coupled plasma mass spectrometry (ICP-MS); 3.3.4 Other analytical techniques for trace elements
3.4 Determination of elemental species
3.4.1 Methodology for the determination of metal species; 3.4.1.1 Chemical methods of speciation; 3.4.1.2 Hyphenated techniques for metal speciation; 3.5 Analytical quality control; 4 How metals get into food; 4.1 Metals in the soil; 4.1.1 Uptake of metals by plants; 4.1.1.1 Accumulator plants; 4.1.1.2 Geobotanical indicators; 4.1.2 Effects of agricultural practices on soil metal content; 4.1.2.1 Metals in agricultural fertilisers; 4.1.2.2 Metals in sewage sludge; 4.1.2.3 Metal uptake from agrochemicals
4.1.3 Industrial contamination as a source of metals in food

Sommario/riassunto

Since publication of the previous edition of this successful book, there have been many advances in the field of food science and metal analysis and these have been taken into account of in compiling this new edition. Data on metal levels in foods and diets have been updated with information gathered from recent international literature. More than 80% of the text has been completely rewritten and, as the addition of a new subtitle suggests, greater account is taken than in earlier editions of the importance of the nutritional properties of many of the metals that we consume. In the compi

2. Record Nr.	UNINA9910895627303321
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