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Nota di contenuto	Contents; Series Editor's Foreword; Preface; Abbreviations and Acronyms; Chapter 1 The Chemical Nature of Lipids; 1.1 Fatty acids; 1.2 Triacylglycerols; 1.3 Ester waxes; 1.4 Phospholipids; 1.5 Sterols and sterol esters; 1.6 Tocols; 1.7 Hydrocarbons; Chapter 2 The Major Sources of Oils and Fats; 2.1 Introduction; 2.2 Animal fats (butter, lard, tallow, chicken fat, and fish oils); 2.3 Cocoa butter and cocoa butter alternatives; 2.4 Lauric oils (coconut, palm kernel); 2.5 Olive oil; 2.6 Palm oil; 2.7 Rapeseed (canola) oil; 2.8 Soybean oil; 2.9 Sunflower seed oil; 2.10 Other vegetable oils 2.11 Single cell oilsChapter 3 Extraction, Refining, and Modification Processes; 3.1 Extraction; 3.2 Refining; 3.3 Modification processes; 3.4 Blending; 3.5 Fractionation including winterisation and dewaxing; 3.6 Hydrogenation; 3.7 Interesterification using a chemical catalyst; 3.8 Interesterification using an enzymatic catalyst; 3.9 Domestication of wild crops; 3.10 Oilseeds modified by conventional seed breeding or by genetic engineering; 3.11 Animal fats modified through nutritional changes; Chapter 4 Analytical Parameters; 4.1 Introduction; 4.2 Oil content; 4.3 Unsaturation - iodine value 4.4 Saponification - free acids, sap value4.5 Melting behaviour, solid

fat content, low-temperature properties; 4.6 Oxidation - peroxide value, anisidine value, stability, shelf life, stability trials, taste panels; 4.7 Gas chromatography; 4.8 Near-infrared and Fourier transform infrared spectroscopy; 4.9 [sup(1)]H NMR spectroscopy; 4.10 [sup(13)]C NMR and [sup(31)]P NMR spectroscopy; 4.11 Mass spectrometry; Chapter 5 Physical Properties; 5.1 Polymorphism, crystal structure, and melting point; 5.2 Alkanoic and alkenoic acids; 5.3 Glycerol esters; 5.4 Ultraviolet spectroscopy
5.5 IR and Raman spectroscopy5.6 Nuclear magnetic resonance spectroscopy; 5.7 Mass spectrometry; 5.8 Density; 5.9 Viscosity; 5.10 Refractive index; 5.11 Solubility of gases in oils; 5.12 Other physical properties; Chapter 6 Chemical Properties; 6.1 Hydrogenation; 6.2 Atmospheric oxidation; 6.3 Thermal changes; 6.4 Reactions of the carboxyl/ester function; Chapter 7 Nutritional Properties; 7.1 Introduction; 7.2 EFA and fatty acid metabolism; 7.3 De novo synthesis of saturated acids; 7.4 Desaturation and elongation in plant systems; 7.5 Desaturation and elongation in animal systems
7.6 Antioxidants7.7 Cholesterol and phytosterols; 7.8 Conjugated linoleic acid; 7.9 Diacyglycerols; 7.10 Recommended intake of fats and of fatty acids; 7.11 Role of fats in health and disease; 7.12 Obesity; 7.13 Coronary heart disease; 7.14 Diabetes; 7.15 Inflammatory diseases; 7.16 Psychiatric disorders; 7.17 Cancer; Chapter 8 Major Edible Uses of Oils and Fats; 8.1 Introduction; 8.2 Spreads - butter and ghee; 8.3 Spreads - margarine, vanaspati, and flavoured spreads; 8.4 Baking fats and shortenings; 8.5 Frying oils and fats; 8.6 Salad oils, mayonnaise and salad cream, French dressing
8.7 Chocolate and confectionery fats

Sommario/riassunto

Oils and fats are almost ubiquitous in food processing - whether naturally occurring in foods or added as ingredients for functional benefits and, despite the impression given by several sources to the contrary, they remain an essential part of the human diet. However, it is increasingly apparent that both the quantity and the quality of the fat consumed are vital to achieving a balanced diet. Health concerns regarding high-fat diets continue to have a high profile, and still represent a pressing issue for food manufacturers. This volume provides a concise and easy-to-use reference on th