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Titolo	Handbook of coffee processing by-products : sustainable applications / / edited by Charis M. Galanakis
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Descrizione fisica	1 online resource (409 pages) : illustrations (some color), tables
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Cover; Title page; Copyright page; Contents; List of Contributors; Preface; Chapter 1 -- State of the art in coffee processing by-products; Abstract; Keywords; 1.1 -- Introduction; 1.2 -- Coffee processing; 1.2.1 -- The postharvesting processing; 1.2.2 -- The coffee roast; 1.2.3 -- The coffee beverage; 1.3 -- Coffee by-products composition and potential applications; 1.3.1 -- Coffee husks/pulp; 1.3.2 -- Immature and defective coffee beans; 1.3.3 -- Silverskin; 1.3.4 -- Spent coffee grounds; 1.4 -- Legislative frameworks and policy recommendations; 1.5 -- Conclusions; Acknowledgments; References Chapter 2 -- Healthy components of coffee processing by-productsAbstract; Keywords; 2.1 -- Introduction; 2.1.1 -- Spent coffee grounds; 2.2 -- Background on antioxidants; 2.2.1 -- The chemical basis of oxidation and reduction: movement of electrons; 2.2.2 -- Oxidants and antioxidants and why we need them; 2.2.2.1 -- Important biological roles of antioxidants; 2.2.2.2 -- Dualistic activities of antioxidants; 2.2.3 -- How we can measure antioxidant amounts; 2.2.3.1 -- DPPH (2,2-diphenyl-1-picrylhydrazyl) assay; 2.2.3.2 -- ABTS (2,2-azino-bis-3-ethylbenzothiazoline-6-sulphonic acid) assay 2.2.3.3 -- Thiobarbituric acid reactive substances: assay for lipid peroxidation2.2.3.4 -- Two superoxide scavenging assays; 2.2.4 -- The types of antioxidants found in coffee (under different roasting

conditions) and coffee processing by-products; 2.2.4.1 -- Caffeine (1,3,7-trimethylxanthine); 2.2.4.2 -- Caffeine as an antioxidant; 2.2.4.3 -- Caffeine as an immune modulator; 2.2.4.4 -- Caffeine and its relationship in reducing some diseases; 2.2.4.5 -- Chlorogenic acids and caffeic acid; 2.2.4.6 -- Chlorogenic acids modulate glucose and lipid metabolism
2.2.4.7 -- Chlorogenic acids and their antiinflammatory activities; 2.2.4.8 -- Maillard reaction products; 2.2.4.9 -- Maillard reaction products in coffee and immune modulating effects; 2.2.4.10 -- Methylglyoxal as an inducer of AGEs; 2.2.4.11 -- Trigonelline, kahweol, and cafestol; 2.2.4.12 -- Diterpenes as antiinflammatory molecules; 2.2.4.13 -- Diterpenes effects on blood lipids; 2.2.5 -- Useful materials in different coffee by-products; 2.2.5.1 -- Husks; 2.2.6 -- Coffee pulp and silver skin; 2.2.6.1 -- Coffee pulp; 2.2.6.2 -- Coffee silver skin
2.2.7 -- Composition similarities between coffee and coffee processing by-products2.3 -- Conclusions; References; Further Reading; Chapter 3 -- The biorefinery concept for the industrial valorization of coffee processing by-products; Abstract; Keywords; 3.1 -- Coffee; 3.2 -- Coffee processing; 3.3 -- Coffee processing by-products; 3.3.1 -- Coffee silverskin; 3.3.2 -- Spent coffee grounds; 3.3.3 -- Coffee pulp; 3.3.4 -- Coffee husk; 3.3.5 -- Coffee cut-stems; 3.4 -- Characterization of coffee processing by-products; 3.5 -- Possibilities of integral valorization of coffee processing by-products
3.6 -- Products obtained from coffee processing by-products

Sommario/riassunto

Handbook of Coffee Processing By-Products: Sustainable Applications presents alternative and sustainable solutions for coffee processing by-products and specifies their industrial potential, both as a source for the recovery of bioactive compounds and their reutilization in the pharmaceutical, biotechnological, food, biotechnology, and cosmetic industries, also covering environmental and agronomic applications. This book addresses key topics specific to sustainable management in the coffee industry, placing an emphasis on integrated solutions for the valorization and upgrade of coffee processing by-products, biorefinery, and different techniques for the separation, extraction, recovery and formulation of polyphenol