

Contents

Part I General Concepts

- 1 Waste Biomass: A Prospective Renewable Resource for Development of Bio-Based Economy/Processes 3**
Surinder Kaur, Gurpreet Singh Dhillon, Saurabh Jyoti Sarma,
Satinder Kaur Brar, Kshipra Misra, and Harinder Singh Oberoi
- 2 Pretreatment Strategies to Enhance Value Addition of Agro-industrial Wastes..... 29**
Adenise Lorenci Woiciechowski, Susan Grace Karp, Keli Sobral,
Júlio Cesar de Carvalho, Luiz Alberto Junior Letti, Vanete Tomaz Soccol,
and Carlos Ricardo Soccol
- 3 Thermochemical Transformation of Agro-biomass into Biochar: Simultaneous Carbon Sequestration and Soil Amendment..... 51**
Mausam Verma, Naceur M'hamdi, Zeineb Dkhili,
Satinder Kaur Brar, and Kshipra Misra

Part II Bioactive Secondary Metabolites

- 4 Microbial Pigments..... 73**
Júlio C. De Carvalho, Lígia C. Cardoso, Vanessa Ghiggi,
Adenise Lorenci Woiciechowski, Luciana Porto de Souza
Vandenbergh, and Carlos Ricardo Soccol
- 5 Utilization of Agro-industrial Waste for the Production of Aroma Compounds and Fragrances..... 99**
Saurabh Jyoti Sarma, Gurpreet Singh Dhillon, Krishnamoorthy Hegde,
Satinder Kaur Brar, and Mausam Verma
- 6 Antioxidants..... 117**
Mamta, Kshipra Misra, Gurpreet Singh Dhillon, Satinder Kaur Brar,
and Mausam Verma

7 Solid-State Fermentation of Agricultural Residues for the Production of Antibiotics	139
Ganesh Kumar Arumugam, Venkatesh Selvaraj, Dharani Gopal, and Kirubakaran Ramalingam	
8 Plant Growth Hormones and Other Phytochemicals	163
Luciana Porto de Souza Vandenberghe, Cristine Rodrigues, Juliana de Oliveira, and Carlos Ricardo Soccol	

Part III Natural Functional Food Products

9 Probiotics	187
Galina Novik, Anastasiya Sidarenka, Elena Kiseleva, Emily Kolomiets, and Estera Szwajcer Dey	
10 Prebiotics.....	237
P.S. Panesar, Vandana Bali, Shweta Kumari, Neha Babbar, and Harinder Singh Oberoi	
11 Potential of Agro-residues as Sources of Bioactive Compounds.....	261
Neha Babbar and Harinder Singh Oberoi	

Part IV Pharmaceutical and Personal Care Products

12 Biologically Active Compounds Form Seafood Processing By-Products	299
Se-Kwon Kim and Pradeep Dewapriya	
13 Microbial Statins	313
Leandro F. dos Santos, Júlio C. de Carvalho, Rosália Rubel, and Carlos Ricardo Soccol	
14 Exploring Plant and Agro-industrial Wastes for Antimicrobial Biochemicals	335
Sangeeta Negi	
15 Pharmaceutical Enzymes	367
Deeplina Das and Arun Goyal	
16 Biocosmetics.....	389
Alessandra Cristine Novak, Eduardo Bittencourt Sydney, and Carlos Ricardo Soccol	

Part V Other Biochemicals

17 Biopolymers Synthesis and Application.....	415
Emna Chaabouni, Fatma Gassara, and Satinder Kaur Brar	

18	Exploitation of Agro-Industrial Wastes to Produce Low-Cost Microbial Surfactants	445
	Partap Bir Singh and Harvinder Singh Saini	
19	C3–C4 Platform Chemicals Bioproduction Using Biomass	473
	Emna Chaabouni, Saurabh Jyoti Sarma, Fatma Gassara, and Satinder Kaur Brar	
	About the Editors	491
	Index	495

Biotransformation of Waste Biomass into High Value
Biochemicals

Brar, S.K.; Dhillon, G.S.; FERNANDES, M. (Eds.)

2014, XV, 504 p. 53 illus., 26 illus. in color., Hardcover

ISBN: 978-1-4614-8004-4