

Contents

SERIES PREFACE	xi
PREFACE	xiii
ACKNOWLEDGMENTS	xvii
EDITOR	xix
CONTRIBUTORS	xxiii
PART I INTRODUCTION	
CHAPTER 1 FOOD PROCESSING INDUSTRIES: AN OVERVIEW	3
M. CHANDRASEKARAN, SOOREJ M. BASHEER, SREEJA CHELLAPPAN, P. KARTHIKEYAN, AND K. K. ELYAS	
CHAPTER 2 CURRENT STATE-OF-THE-ART OF FOOD PROCESSING BY-PRODUCTS	35
KASI MURUGAN, VICTOR SIMON CHANDRASEKARAN, P. KARTHIKEYAN, AND SALEH AL-SOHAIBANI	
CHAPTER 3 REGULATORY ISSUES AND CONCERNS OF VALORIZATION OF FOOD PROCESSING BY-PRODUCTS	63
M. CHANDRASEKARAN	

CHAPTER 4	NEED FOR VALORIZATION OF FOOD PROCESSING BY-PRODUCTS AND WASTES	91
	M. CHANDRASEKARAN	

PART II PRINCIPLES OF WASTE RECYCLING

CHAPTER 5	PRINCIPLES OF FOOD TECHNOLOGY AND TYPES OF FOOD WASTE PROCESSING TECHNOLOGIES	109
	M. K. GOWTHAMAN, POORNIMA GOWTHAMAN, AND M. CHANDRASEKARAN	

CHAPTER 6	PROCESS ENGINEERING AND ECONOMICS	147
	M. K. GOWTHAMAN AND POORNIMA GOWTHAMAN	

CHAPTER 7	BIOCHEMICAL AND NUTRITIONAL ASPECTS OF FOOD PROCESSING BY-PRODUCTS	167
	JISSA G. KRISHNA AND M. CHANDRASEKARAN	

CHAPTER 8	MICROBIOLOGY OF FOOD PROCESSING BY-PRODUCTS	187
	ARUNACHALAM CHINNATHAMBI, ABDURAHMAN HAJINUR HIRAD, AND ALI H. BAHKALI	

CHAPTER 9	FERMENTATION OF FOOD PROCESSING BY-PRODUCTS	203
	K. JAYACHANDRAN, INDU C. NAIR, T. S. SWAPNA, AND A. SABU	

CHAPTER 10	ENZYME TECHNOLOGIES FOR BIOCONVERSION OF FOOD PROCESSING BY-PRODUCTS	233
	SARITA G. BHAT AND RAJEEV K. SUKUMARAN	

CHAPTER 11	ANALYTICAL METHODS FOR MONITORING THE BIOLOGICAL PROCESSES EMPLOYED IN VALORIZATION OF FOOD PROCESSING BY-PRODUCTS	267
	M. CHANDRASEKARAN, JISSA G. KRISHNA, AND K. SHINE	

PART III VALORIZATION OF BY-PRODUCTS FROM PLANT-BASED FOOD PROCESSING INDUSTRIES

CHAPTER 12	CEREALS	303
	JISSA G. KRISHNA AND M. CHANDRASEKARAN	

CHAPTER 13 OIL SEEDS	331
M. CHANDRASEKARAN AND K. SHINE	
CHAPTER 14 ROOTS AND TUBERS	377
G. PADMAJA AND A. N. JYOTHI	
CHAPTER 15 SUGARCANE	415
A. M. MURUGAN AND A. J. A. RANJIT SINGH	
CHAPTER 16 COFFEE, TEA, AND COCOA	455
KASI MURUGAN AND SALEH AL-SOHAIBANI	
CHAPTER 17 SPICES	489
B. CHEMPAKAM, N. K. LEELA, SHAMINA AZEEZ, E. JAYASHREE, AND T. JOHN ZACHARIAH	
CHAPTER 18 FRUITS AND VEGETABLES	517
T. H. KAO AND B. H. CHEN	
CHAPTER 19 BAKERIES AND CONFECTIONERIES	559
CONCHA COLLAR AND CRISTINA M. ROSELL	
CHAPTER 20 BEVERAGES	589
R. SHYAM KUMAR AND M. CHANDRASEKARAN	
PART IV VALORIZATION OF BY-PRODUCTS FROM ANIMAL PRODUCTS-BASED FOOD PROCESSING INDUSTRIES	
CHAPTER 21 DAIRY BY-PRODUCTS: WASTES OR RESOURCES?—THE SHIFTING PERCEPTION AFTER VALORIZATION	617
SURAJIT MANDAL, MONICA PUNIYA, K. P. S. SANGU, SUMIT SINGH DAGAR, RAMESHWAR SINGH, AND ANIL KUMAR PUNIYA	
CHAPTER 22 MEATS, POULTRY, AND EGGS	649
K. RATHINARAJ AND N. M. SACHINDRA	
CHAPTER 23 SEAFOOD	685
P. V. SURESH AND G. NAGENDRA PRABHU	

**PART V ENVIRONMENTAL CONCERNS, FUTURE
PROSPECTS, AND NEED FOR RESEARCH**

CHAPTER 24 ENVIRONMENTAL CONCERNS AND SUSTAINABLE DEVELOPMENT	739
KASI MURUGAN AND K. RAMASAMY	
CHAPTER 25 FUTURE PROSPECTS AND THE NEED FOR RESEARCH	757
M. CHANDRASEKARAN	
INDEX	773