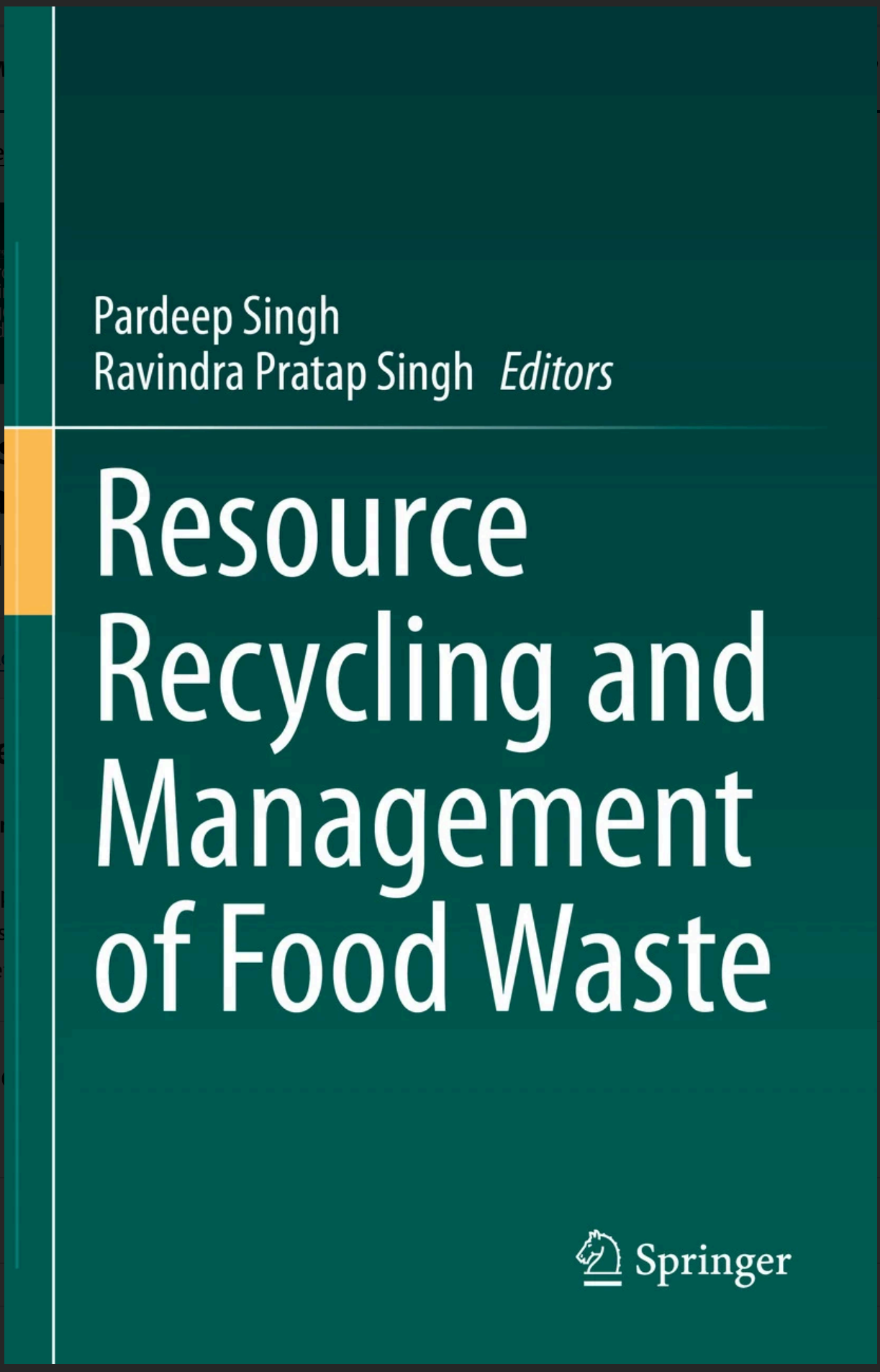
Pardeep Singh
Ravindra Pratap Singh Editors
Resource Recycling and Management of Food Waste
Springer

Resource Recycling and Management of Food Waste

Pardeep Singh • Ravindra Pratap Singh
Editors

Resource Recycling and Management of Food Waste

Springer

Editors
Pardeep Singh
PGDAV College, University of Delhi
New Delhi, India

Ravindra Pratap Singh
Uttar Pradesh Pollution Control Board
(UPPCB)
Government of Uttar Pradesh
Lucknow, UP, India

ISBN 978-3-031-86687-6 ISBN 978-3-031-86688-3 (eBook)
https://doi.org/10.1007/978-3-031-86688-3

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Contents

Food Waste and Its Biotechnological Application

| Chapter | First Online: 22 May 2025

| pp 305–318 | Cite this chapter

Resource Recycling and Management of Food Waste

Mohammad Amir, Poornima Singh, Naushin Bano & Roohi

Abstract

Food waste and its accumulation are becoming a critical problem worldwide as the population grows. Approximately 1.4 billion tons of food have been wasted worldwide. Due to weak infrastructure, cities in developing nations are wasting more food than those in developing nations, which poses serious threats to our society, including environmental pollution and health risks. There is an urgent need to take appropriate measures to reduce the burden of food waste by implementing standard management practices. A circular economy aims to give food waste a new life as it is the most preferred method for its proper disposal. Sugarcane bagasse and sugar beet molasses are by-product materials produced during the sugarcane and sugar beet processing process, respectively. Both substrates comprise complex ligno-cellulosic and starch-containing compounds that can be used as low-cost energy sources for microbial growth and metabolite production under various fermentation conditions. Pretreatment with various microbes frequently resulted in improved substrate utilization. Bagasse and beet molasses have recently gained attraction as alternative substrates for producing high-value products such as enzymes, protein-enriched animal feed, amino acids, organic acids, and antibiotics. They have numerous advantages