# Contents

*Contributors* vii  
*Preface* ix  

**PART I: OVERVIEW, PRODUCTION AND POSTHARVEST TECHNOLOGIES** 1  
1. Dry Beans and Pulses Production and Consumption—An Overview 3  
   *Muhammad Siddiq and Mark A. Uebersax*  
2. Dry Bean Breeding and Production Technologies 23  
   *James D. Kelly and Karen A. Cichy*  
3. Market Classes and Physical and Physiological Characteristics of Dry Beans 55  
   *Mark A. Uebersax and Muhammad Siddiq*  
4. Postharvest Storage Quality, Packaging and Distribution of Dry Beans 75  
   *Mark A. Uebersax and Muhammad Siddiq*  

**PART II: COMPOSITION, VALUE-ADDED PROCESSING AND QUALITY** 101  
5. Composition of Processed Dry Beans and Pulses 103  
   *Elham Azarpazhooh and Joyce I. Boye*  
6. Hydration, Blanching and Thermal Processing of Dry Beans 129  
   *Norman J. Matella, Dharmendra K. Mishra and Kirk D. Dolan*  
7. Canned Whole Dry Beans and Bean Products 155  
   *Brittany L. White and Luke R. Howard*  
8. Extrusion Processing of Dry Beans and Pulses 185  
   *Jose De J. Berrios, José Luis Ramírez Ascheri and Jack N. Losso*  
9. Processing of Dry Bean Flours and Fractions 205  
   *Xin Rui and Joyce I. Boye*  
10. Cowpea Processing and Products 235  
   *Robert D. Phillips*
## Contents

11. Utilization of Dry Beans and Pulses in Africa  
   *Jose Jackson, Joyce Kinabo, Peter Mamiro, Delphina Mamiro and Victoria Jideani*  
   261

   *Muhammad Nasir and Jiwan S. Sidhu*  
   283

### PART III: CULINOLOGY, NUTRITION AND SIGNIFICANCE IN HUMAN HEALTH  

13. Culinary Perspective of Dry Beans and Pulses  
   *Carl P. Borchgrevink*  
   311

   *Elizabeth A. Rondini, Kathleen G. Barrett and Maurice R. Bennink*  
   335

15. Chemistry and Implications of Antinutritional Factors in Dry Beans and Pulses  
   *Shridhar K. Sathe*  
   359

*Index*  
   379