



BASIC SYMPOSIUM SERIES

Natural Food Colorants

Science and Technology

Suranaree University of Technology



31051000656237

Contents

Preface

Contributors

- 1. **Carmine** 1
José Schul
- 2. **The Betalains** 11
Joachim H. von Elbe and I. L. Goldman
- 3. **Monascus** 31
Richard E. Mudgett
- 4. **Gardenia Yellow** 87
Yoshiaki Kato
- 5. **Paprika** 97
Carol L. Lacey and James A. Guzikski

8. *amphibia* 8

9. *amphibia* 9

10. *amphibia* 10

11. *amphibia* 11

12. *amphibia* 12

13. *amphibia* 13

14. *amphibia* 14

15. *amphibia* 15

16. *amphibia* 16

6. **Annatto** 115
Luis W. Levy and Diana M. Rivadeneira
7. **Lycopene** 153
Minhthly L. Nguyen and Steven J. Schwartz
8. **Phycobilins** 193
Jennifer D. Houghton
9. **Turmeric** 205
Ron Buescher and Luoqing Yang
10. **Chlorophylls** 227
George A. F. Hendry
11. **Anthocyanins** 237
Ronald E. Wrolstad
12. **Caramel Color** 253
William Kamuf, Alexander Nixon, and Owen Parker
13. **The Measurement of Color** 273
Kevin Loughrey
14. **Health Aspects of Natural Colors** 289
G. Mazza
15. **Regulations in Europe and Japan** 315
Bruce S. Henry
- Index** 329