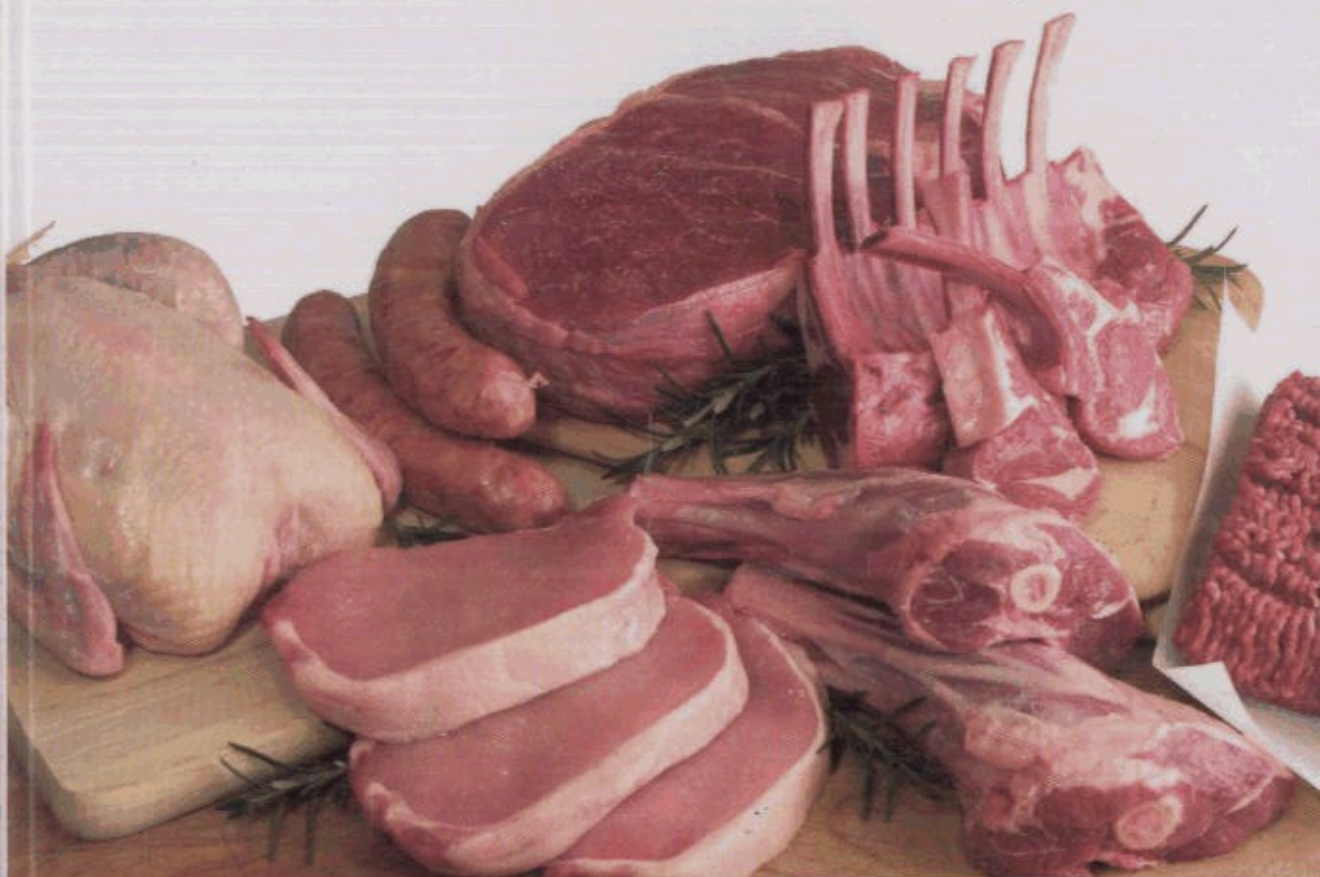


# HANDBOOK OF MEAT, POULTRY & SEAFOOD QUALITY



LEO M.L. NOLLET *Editor*

*Associate Editors:*

Terri Boylston

Feng Chen

Patti C. Coggins

Maria Beatriz Gloria

Grethe Hyldig

Chris R. Kerth

Lisa H. McKee

Y. H. Hui



**Blackwell  
Publishing**

# Contents

*List of Contributors, ix*  
*Preface, xv*

## **Part I. General Food Quality Factors**

1. Factors Affecting Food Quality: A Primer 3  
*Y. H. Hui*
2. Hazard Analysis and Critical Control Points  
and Muscle Food Safety in the United States 7  
*Y. H. Hui*

## **Part II. Sensory Attributes of Muscle Foods**

3. History, Background, and Objectives of Sensory Evaluation  
in Muscle Foods 15  
*M. W. Schilling*
4. Chemical and Biochemical Aspects of Color in Muscle Foods 25  
*J. A. Pérez-Alvarez and J. Fernández-López*
5. Sensory: Human Biology and Physiology 45  
*M. A. Da Silva and F. Cendes*
6. Sensory Methodology of Muscle Foods 61  
*P. C. Coggins*
7. Objective Methods of Sensory Analysis 71  
*J. L. Montgomery*
8. Attributes of Muscle Foods: Color, Texture, Flavor 89  
*P. C. Coggins*

## **Part III. Flavors**

9. Sensory Characterization 101  
*K. Bett-Garber*
10. Chemical Characterization 111  
*N. C. Da Costa and S. Eri*
11. Chemistry, Technology, and Safety of Synthetic Flavors 127  
*R. K. Singh and E. Singh*
12. Process Flavors 151  
*H. H. Baek*
13. Savory Flavors 163  
*C. Cerny*

14. Natural Flavors 183  
*H. Kumagai*
15. Wood Smoke Flavor 201  
*K. R. Cadwallader*
16. Blended Flavors 211  
*S. X. Ma, Z. B. Xiao, and F. Chen*
17. Off Flavors and Rancidity in Foods 217  
*R. B. Pegg and F. Shahidi*
18. Land Animal Products 229  
*T. Boylston*
19. Marine Animal and Plant Products 243  
*N. Narain and M. L. Nunes*
20. Maillard Reaction in Flavor Generation 259  
*M. V. Romero and C. Ho*
21. Traditional Laboratory Methods 275  
*E. Mehinagic*
22. Recent Developments in Flavor Measurements 293  
*J-L. Le Quéré*

#### **Part IV. Beef Quality**

23. Sensory Evaluation of Beef Flavor 311  
*R. K. Miller*
24. Beef Quality and Tainting 327  
*J. M. Martin*
25. Microbiological and Sensory Properties of Beef 333  
*J. Thomas*
26. Quality Measurements in Beef 341  
*R. S. Chamul*
27. Shelf Life of Meats 357  
*R. S. Chamul*
28. Packaging and Freezing of Beef as Related to Sensory Properties 369  
*R. W. Rogers*

#### **Part V. Pork Quality**

29. Fresh and Frozen Pork Color 377  
*D. H. Kropf*
30. Microbiological and Sensory Properties of Fresh and Frozen Pork Products 395  
*L. McKee*
31. Pork Taint 405  
*W. B. Mikel*
32. Shelf Life of Fresh and Frozen Pork 417  
*M. A. Carr*

#### **Part VI. Poultry Quality**

33. General Attributes of Fresh and Frozen Poultry Meat 429  
*L. McKee*
34. Poultry Meat Flavor 439  
*P. L. Dawson and N. Spineli*

## Contents

- 35. Color of Fresh and Frozen Poultry 455  
*A. Totosaus, M. L. Pérez-Chabela, and I. Guerrero*
- 36. Shelf Life of Fresh and Frozen Poultry 467  
*M. L. Pérez-Chabela*
- 37. Packaging of Fresh and Frozen Poultry 475  
*A. Totosaus and V. Kuri*
- 38. Microbiological and Sensory Properties of Fresh  
and Frozen Poultry 487  
*L. McKee*

### **Part VII. Seafood Quality**

- 39. Fish and Sensory Analysis in the Fish Chain 499  
*G. Hyldig, E. Larsen, and D. Green-Petersen*
- 40. Sensory Profiling of Fish, Fish Product, and Shellfish 511  
*G. Hyldig*
- 41. Quality Index Methods 529  
*G. Hyldig, A. Bremner, E. Martinsdóttir, and R. Schelvis*
- 42. Texture of Fish, Fish Products, and Shellfish 549  
*G. Hyldig and D. Nielsen*
- 43. Perception of Sensory Quality of Wild and Farmed Fish by Experts,  
Consumers, and Chefs or Cooks in the Restaurant Sector 563  
*G. B. Olsson, M. Carlehög, M. Heide, and J. Luten*
- 44. Quality of Frozen Fish 577  
*J. Nielsen and F. Jessen*

### **Appendix. Standards for Meat, Poultry and Seafood in the United States 589**

*Y. H. Hui*

**Index, 695**