

Χαρακτηριστικά:

- Addresses lipid oxidation, sensory acceptability, and stability throughout PUFA processing to ensure quality and efficacy of PUFA-enriched products
- Provides practical guidance for formulating PUFA-enriched products for maximum health benefits
- Explores emerging trends and opportunities, including the development of novel functional foods, nutraceuticals, and personalized nutrition solutions
- Navigates regulatory requirements and safety considerations to help professionals understand frameworks governing PUFA use for new product development
- Discusses the consumer preferences and market trends that are crucial for the successful commercialization of PUFA products

Περιεχόμενα:

Section 1: Introduction to PUFAs

1. Introduction to Omega-3 and Omega-6 Polyunsaturated Fatty Acids (PUFAs): Sources and Natural Occurrence
2. Nutritional Importance and Health Benefits of n-3 and n-6 PUFAs: Essential Fatty acids and Dietary Sources
3. Biological Mechanisms of PUFAs: Metabolism and Health Impacts of EPA, DHA, ALA, AA and Linoleic Acid
4. Sourcing PUFA-Rich Ingredients: Superfoods, Microbial Sources and Market Integration
5. Novel Sources of PUFAs: Algae, Marine, Microbial Innovations, Animal, Plants, Genetically Engineered Plants and other Biological Sources
6. Advances in PUFA Extraction and Purification Techniques: Innovations in Membrane and other Technology

Section 2: Delivery Systems

7. Engineering Approaches to Enhance PUFA Stability during Processing
8. High-Pressure Processing (HPP) for Retaining PUFA Nutritional Integrity
9. Innovations in PUFA Delivery Systems: Emulsions, Encapsulation and Structured Lipids
10. Nano and Microencapsulation of PUFAs for Enhanced Stability and Bioavailability

Section 3: Health and Nutritional Benefits

11. DHA and EPA in Cardiovascular Health: Implications for Functional Food Development
12. Omega-3 and omega-6 PUFAs in Cognitive Function: Innovations through Nutrient Supplementation
13. DHA and EPA in Inflammation Regulation: Opportunities in Functional and Nutraceutical Foods
14. Personalized Nutrition and Customized PUFA Delivery Systems of omega-3 and omega-6 fatty acids in Food Products

15. DHA, EPA and AA in Brain Health: Brain Development, Cognition, Aging and Depressive Disorders through Nutritional Interventions
16. Global Perspectives on DHA and EPA Consumption Patterns and Food Industry Applications

Section 4: Use in Functional Foods and Product Formulation

17. Formulation Techniques for PUFA-Enriched Foods
18. Preventing PUFA Oxidation: Technological Advancements for Food and Nutraceuticals
19. Packaging Innovations for Enhancing PUFA Stability and Shelf Life
20. Quality Control Measures for Ensuring PUFA Product Integrity
21. Market Trends and Opportunities in the PUFA Food Industry
22. Regulatory Landscape of PUFAs in Food Products: Labeling and Claims
23. Sensory Evaluation and Consumer Acceptance of PUFA-Enriched Foods
24. Food Matrix Interactions: Enhancing Bioavailability and Functionality of PUFAs

Section 5: Sustainable PUFAs

25. Life Cycle Assessment (LCA) of PUFA Production and Processing
26. Environmental Sustainability in PUFA Sourcing and Production

Section 6: Advances in Technology

27. Emerging Technologies and Trends in PUFA Research and Application
28. Techno-Economic Analysis of PUFA Production and Processing
29. Challenges and Solutions in Scaling Up PUFA Production for Industrial Use

Section 7: Case Studies

30. Pioneering PUFA Product Formulations and Launch Strategies: Case studies and Innovations
31. Commercialization Strategies for PUFA Products with Case Study Analysis: From Concept to Market
32. PUFA-Based Nutraceuticals and Supplements: Case Studies and application in modern healthcare
33. PUFA Utilization in Emerging Food Sectors: Case Studies on Technological Advancement
34. PUFA-Enriched Foods in the Market: Case Studies and strategies

Section 8: Future Opportunities

35. Future Directions in PUFA Technology and Product Development
36. Harnessing the Potential of PUFAs for Health and Sustainable Food Systems