Color and Pigment Technology in Food Training Course

Professional Development Training Course Outline

Category	Food processing and Technology	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Color plays a central role in consumer perception of food quality, safety, and appeal. In today?ÇÖs competitive food industry, the demand for innovative solutions in food coloring and pigment technology is rapidly growing. Color and Pigment Technology in Food Training Course

introduces participants to the science, technology, and regulatory framework behind natural and synthetic pigments, helping professionals understand the functionality, stability, and safety considerations of colorants. Through interactive modules, case studies, and applied practices, participants will gain in-depth insights into formulation strategies, product innovation, and sustainability trends shaping the future of food colorants.

The training is designed with strong emphasis on practical applications and industry relevance. Participants will explore the chemical structures of food pigments, learn about consumer preferences, and assess global trends influencing color usage. With expert guidance, learners will be empowered to solve challenges related to color stability, regulatory compliance, and clean-label demands. This program will serve as a bridge between scientific knowledge and industrial applications, creating opportunities for growth, innovation, and enhanced market competitiveness in the food sector.

Programme Curriculum

Color and Pigment Technology in Food Training Course

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Course Objectives

1. To understand the science of food pigments and colorants.
2. To analyze natural versus synthetic colorants in food applications.
3. To examine color stability under varying food processing conditions.
4. To explore global food color regulations and compliance.
5. To develop skills for clean-label pigment formulation.
6. To identify emerging trends in plant-based and natural pigments.
7. To evaluate consumer behavior and preferences in food color choices.
8. To implement sustainable and eco-friendly pigment technologies.
9. To strengthen knowledge in sensory evaluation of food colors.
10. To investigate microencapsulation for pigment stability.
11. To apply case studies on food product color development.
12. To integrate pigment innovation for product differentiation.
13. To enhance technical decision-making in pigment applications.

Organizational Benefits

- Enhanced compliance with international regulatory frameworks.
- Improved product acceptance through appealing color design.
- Increased innovation capacity in product development.
- Stronger brand positioning with clean-label solutions.
- Reduced risks of pigment instability and product recalls.
- Access to global insights on pigment market trends.
- Application of sustainable technologies in food coloring.
- Enhanced technical expertise among staff.
- Improved customer satisfaction through high-quality products.
- Strengthened competitiveness in the global food industry.

Target Audiences

- Food technologists
- Quality assurance managers
- R&D professionals
- Regulatory officers
- Food scientists and researchers
- Product development managers

- Nutritionists and dietitians
- Food industry entrepreneurs

Course Duration: 10 days

Course Modules

Module 1: Fundamentals of Food Pigments

- Classification of food colorants
- Natural versus synthetic pigments overview
- Chemical properties of key pigments
- Role of color in consumer perception
- Factors influencing pigment stability
- Case study: Carotenoids in beverages

Module 2: Natural Pigments in Food Systems

- Plant-derived pigments: anthocyanins, betalains, chlorophylls
- Extraction techniques and yields
- Functional benefits of natural pigments
- Challenges in stability and applications
- Consumer demand for natural solutions
- Case study: Anthocyanin-rich dairy products

Module 3: Synthetic Food Colorants

- Types of synthetic colors
- Cost benefits and limitations
- Toxicological evaluations
- Application in processed foods
- Market dynamics of synthetic pigments
- Case study: Synthetic color replacement in confectionery

Module 4: Food Processing and Pigment Stability

- Impact of pH and temperature
- Light and oxygen effects on pigments
- Strategies to enhance pigment stability
- Role of antioxidants and stabilizers
- Packaging influence on color stability
- Case study: Pigment degradation in sauces

Module 5: Regulatory Frameworks for Food Colors

- Codex Alimentarius guidelines
- FDA and EFSA regulations
- Labeling requirements
- Regional variations in approvals
- Risk assessment and safety protocols
- Case study: Global compliance in bakery products

Module 6: Clean-Label Pigment Solutions

- Definition of clean-label in food coloring
- Clean-label pigment sources
- Innovations in minimal processing
- Formulation challenges and solutions
- Industry adoption trends
- Case study: Clean-label yogurt colors

Module 7: Consumer Behavior and Food Color

- Psychology of food color perception
- Cultural influences on preferences
- Marketing and branding strategies
- Linking color to flavor perception
- Studies on consumer purchasing decisions
- Case study: Market success of natural-colored snacks

Module 8: Sensory Evaluation of Food Colors

- Sensory testing methods
- Descriptive analysis techniques
- Linking sensory data with consumer appeal
- Limitations in sensory evaluation
- Role of panel training
- Case study: Sensory testing in fruit juices

Module 9: Microencapsulation and Pigment Stability

- Microencapsulation techniques
- Benefits of encapsulated pigments
- Application in beverages and confectionery
- Nanoencapsulation advancements
- Shelf-life extension methods
- Case study: Encapsulation of betalains

Module 10: Emerging Pigment Technologies

- Plant-based pigment innovation
- Fermentation-derived pigments
- Biotechnology applications
- Edible coatings with pigments
- Pigments from algae and microorganisms
- Case study: Spirulina pigment in ice cream

Module 11: Sustainable Pigment Applications

- Green extraction technologies
- Renewable sources of pigments
- Lifecycle assessment in pigments
- Reducing carbon footprint
- Circular economy in food colors

- Case study: Sustainability in beverage pigments

Module 12: Pigments in Functional Foods

- Pigment bioavailability studies
- Health benefits of natural pigments
- Functional food market trends
- Role in nutraceuticals
- Product development opportunities
- Case study: Anthocyanins in functional beverages

Module 13: Product Innovation with Pigments

- Linking pigment choice to branding
- Role of pigments in novel food products
- Innovation in bakery and confectionery colors
- Beverage industry innovations
- Role in dairy product appeal
- Case study: New product launches with natural colors

Module 14: Industrial Case Studies in Pigment Use

- Bakery and confectionery case studies
- Beverage product development case studies
- Dairy pigment applications case studies
- Processed meat pigment challenges
- Regional variations in pigment applications
- Case study: Global pigment innovation showcase

Module 15: Future Trends in Food Pigment Technology

- AI and digital tools in pigment design
- Smart packaging linked with pigments
- Future consumer demands
- Advances in food biotechnology
- Global pigment innovation forecasts
- Case study: Predictive modeling of pigment stability

Training Methodology

- Interactive lectures with expert trainers
- Group discussions and brainstorming sessions
- Hands-on demonstrations of pigment technologies
- Real-life industry case study analysis
- Practical assignments and feedback sessions

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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