Extrusion of Breakfast Cereals and Fortification Training Course

Professional Development Training Course Outline

Category	Food processing and Technology	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The global breakfast cereal industry is witnessing rapid technological advancements and increased demand for nutrient-rich, fortified products. Understanding the science of extrusion and fortification is crucial for food technologists, production managers, and quality assurance professionals aiming to innovate and maintain competitive advantage. Extrusion of Breakfast Cereals and Fortification Training Course provides comprehensive insights into extrusion processes, product development, and nutrient fortification strategies while aligning with industry standards and consumer expectations. Participants will gain practical knowledge to optimize cereal quality, improve nutritional content, and enhance production efficiency.

This course emphasizes hands-on learning, process optimization, and analytical approaches to fortification. By integrating theoretical knowledge with real-life case studies, participants will explore extrusion parameters, raw material selection, fortification techniques, and quality evaluation methods. The course also addresses regulatory guidelines, technological innovations, and market trends, ensuring participants are equipped to make informed decisions in product development and production management.

Programme Curriculum

Extrusion of Breakfast Cereals and Fortification Training Course

Introduction

The global breakfast cereal industry is witnessing rapid technological advancements and increased demand for nutrient-rich, fortified products. Understanding the science of extrusion and fortification is crucial for food technologists, production managers, and quality assurance professionals aiming to innovate and maintain competitive advantage. Extrusion of Breakfast Cereals and Fortification Training Course provides comprehensive insights into extrusion processes, product development, and nutrient fortification strategies

while aligning with industry standards and consumer expectations. Participants will gain practical knowledge to optimize cereal quality, improve nutritional content, and enhance production efficiency.

This course emphasizes hands-on learning, process optimization, and analytical approaches to fortification. By integrating theoretical knowledge with real-life case studies, participants will explore extrusion parameters, raw material selection, fortification techniques, and quality evaluation methods. The course also addresses regulatory guidelines, technological innovations, and market trends, ensuring participants are equipped to make informed decisions in product development and production management.

Course Objectives

1. Understand the principles of cereal extrusion technology and machinery.
2. Explore process optimization techniques for high-quality cereal production.
3. Learn fortification strategies to enhance nutritional content.
4. Analyze raw materials and ingredient functionality in extrusion.
5. Evaluate extrusion parameters for optimal product texture and expansion.
6. Apply quality control and safety protocols in cereal production.
7. Identify challenges and solutions in scaling up extrusion processes.
8. Implement sensory and physical evaluation methods for product quality.
9. Examine regulatory compliance and fortification guidelines.
10. Explore innovations and trends in cereal extrusion technology.
11. Integrate cost-effective approaches for sustainable production.
12. Develop skills to troubleshoot extrusion defects effectively.
13. Utilize case studies to bridge theory with practical applications.

Organizational Benefits

- Improved product quality and nutritional value of cereals.
- Enhanced production efficiency and process optimization.
- Better adherence to fortification standards and regulations.
- Reduction of waste and operational costs through optimized processes.
- Strengthened innovation capabilities in new product development.
- Improved employee technical competency and skill set.
- Enhanced ability to analyze and solve extrusion process challenges.
- Stronger alignment with consumer health trends and market demands.
- Improved quality assurance and safety management practices.
- Increased competitiveness and brand value in the cereal industry.

Additional Benefits After Course Objectives

1. Increased productivity through process understanding.
2. Enhanced technical expertise among production teams.
3. Improved decision-making in product formulation.
4. Greater consistency in product quality and appearance.
5. Reduction of operational errors and downtime.
6. Better adaptation to industry regulations and standards.
7. Improved cost management in raw materials and production.
8. Strengthened team collaboration in R&D and production.
9. Enhanced market competitiveness through fortified products.
10. Better understanding of consumer preferences and trends.

Target Audiences

- Food technologists and engineers
- Production managers in the cereal industry
- Quality assurance and control personnel
- R&D and product development specialists
- Regulatory and compliance officers
- Nutritionists and dietitians
- Technical sales and marketing professionals
- Academic researchers and students in food science

Course Duration: 5 days

Course Modules

Module 1: Introduction to Cereal Extrusion

- Overview of extrusion technology and its importance
- Types of extruders and machinery
- Raw material characteristics for extrusion
- Process variables affecting product quality
- Industrial applications and innovations
- Case Study: Analysis of a breakfast cereal extrusion plant

Module 2: Raw Material Selection and Preparation

- Ingredients and their functional roles in extrusion
- Moisture content and particle size considerations
- Pre-conditioning techniques for cereals
- Impact of raw materials on product texture
- Techniques to ensure consistent feed quality
- Case Study: Effect of raw material variation on extrusion output

Module 3: Extrusion Process Optimization

- Key process parameters (temperature, pressure, screw speed)
- Influence of extrusion conditions on product expansion
- Techniques to reduce operational inefficiencies
- Monitoring and control systems
- Troubleshooting common process defects
- Case Study: Optimization of expansion and texture in corn flakes

Module 4: Fortification Techniques

- Importance of fortifying cereals with vitamins and minerals
- Methods of nutrient addition (pre- and post-extrusion)
- Stability of nutrients during extrusion
- Regulatory requirements for fortified cereals
- Quality control measures for fortified products
- Case Study: Successful fortification of breakfast cereals

Module 5: Product Development and Sensory Evaluation

- Texture, taste, and appearance evaluation methods
- Consumer preference studies and sensory panels
- Product prototyping and formulation trials
- Influence of extrusion parameters on organoleptic properties
- Sensory evaluation tools and analysis
- Case Study: Reformulation for enhanced sensory quality

Module 6: Quality Assurance and Safety Protocols

- Critical control points in cereal production
- HACCP and GMP guidelines in extrusion
- Analytical methods for nutrient content verification
- Microbiological and contamination control
- Documentation and regulatory compliance
- Case Study: Implementing quality assurance in a production facility

Module 7: Troubleshooting and Problem Solving

- Identifying common extrusion issues
- Root cause analysis methods
- Corrective actions for product defects
- Process adjustments for consistent output
- Preventive maintenance practices
- Case Study: Resolving textural inconsistencies in puffed cereals

Module 8: Industry Trends and Innovation

- Emerging technologies in cereal extrusion
- Trends in fortified and functional cereals
- Sustainable production approaches
- Automation and digital monitoring systems
- Market analysis and consumer insights
- Case Study: Launch of a novel high-fiber breakfast cereal

Training Methodology

- Interactive lectures with multimedia presentations
- Hands-on demonstrations of extrusion equipment
- Group discussions and problem-solving exercises
- Real-life case studies for applied learning
- Practical sessions on fortification and sensory evaluation
- Continuous assessment through quizzes and feedback

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	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com