Chemical Residue Testing and Control in Food 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

Ensuring food safety and consumer protection is a global priority in the modern food supply chain. Chemical residue testing plays a crucial role in monitoring contaminants such as pesticides, veterinary drugs, heavy metals, and processing chemicals. With international food trade expanding, strict compliance with food safety regulations, international standards, and laboratory testing protocols has become more critical than ever. Chemical Residue Testing and Control in Food Training Course equips participants with advanced knowledge and practical skills in chemical residue detection, laboratory analysis, and regulatory compliance.

Participants will gain in-depth understanding of modern analytical technologies, global food safety frameworks, and practical control strategies to mitigate risks in the food industry. Through expert-led sessions, hands-on demonstrations, and real-world case studies, the course empowers food industry professionals, regulators, and laboratory analysts to strengthen their capacity in ensuring safe, high-quality food products that meet international trade and consumer safety standards.

Programme Curriculum

Chemical Residue Testing and Control in Food Training Course

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Course Objectives

1. Develop expertise in chemical residue testing methods for food safety.
2. Understand global regulatory frameworks governing chemical residues in food.
3. Apply modern analytical techniques such as GC-MS, LC-MS/MS, and HPLC.
4. Strengthen skills in sampling techniques and contamination detection.
5. Interpret laboratory test results for compliance and decision-making.
6. Identify risks associated with pesticides, veterinary drugs, and heavy metals.
7. Integrate food safety management systems to control chemical hazards.
8. Implement residue monitoring plans aligned with Codex Alimentarius standards.
9. Gain knowledge on maximum residue limits (MRLs) in global markets.
10. Explore emerging challenges and innovations in residue testing.
11. Utilize case studies to analyze real-world contamination incidents.
12. Enhance laboratory quality management and accreditation practices.
13. Build strategic skills for residue control in food processing and supply chains.

Organizational Benefits

1. Improved compliance with international food safety regulations.
2. Enhanced reputation through safe and residue-free food products.
3. Strengthened laboratory testing and analytical capacity.
4. Reduced risk of food recalls and trade rejections.
5. Cost savings through proactive monitoring and control.
6. Increased market access in international trade.
7. Improved consumer confidence and trust.
8. Strengthened quality assurance frameworks.
9. Better alignment with sustainable food safety practices.
10. Reduced legal and financial risks from non-compliance.

Target Audiences

1. Food safety officers and inspectors
2. Quality assurance managers in food industries
3. Laboratory analysts and technicians
4. Regulatory authorities and policymakers
5. Food exporters and importers
6. Agricultural extension officers
7. Food technologists and production managers
8. Academic researchers and trainers

Course Duration: 5 days

Course Modules

Module 1: Introduction to Food Safety and Chemical Residues

- Understanding food contamination and hazards
- Sources of chemical residues in food production
- International perspectives on food safety standards
- Importance of chemical residue control
- Overview of Codex Alimentarius principles
- Case study: Pesticide residues in fresh produce

Module 2: Global Regulatory Frameworks

- World Health Organization and FAO guidelines
- European Union residue regulations
- United States FDA and USDA requirements
- Asian and African regulatory approaches
- Maximum residue limits (MRLs) compliance strategies
- Case study: Export rejections due to non-compliance

Module 3: Sampling Strategies and Laboratory Protocols

- Proper sampling techniques for accuracy
- Chain of custody in sample handling
- Laboratory accreditation and ISO 17025
- Good laboratory practices (GLP)
- Cross-contamination prevention measures
- Case study: Sampling errors leading to false results

Module 4: Analytical Techniques in Residue Testing

- Chromatography and spectroscopy basics
- GC-MS and LC-MS/MS applications
- High-performance liquid chromatography (HPLC)
- Emerging rapid testing methods
- Data analysis and interpretation in laboratories
- Case study: Multi-residue detection in meat products

Module 5: Pesticide Residue Monitoring

- Common pesticides in agriculture
- Impact on human health and environment
- Monitoring frameworks for pesticide residues
- Preventive measures in crop production
- Compliance with international trade standards
- Case study: Banned pesticide detection in cereals

Module 6: Veterinary Drug Residues

- Sources of residues in livestock production
- Antibiotic resistance and food safety concerns
- Drug withdrawal periods and monitoring
- Analytical methods for veterinary drug detection
- Risk management in livestock supply chains

- Case study: Antibiotic residues in dairy products

Module 7: Heavy Metals and Other Contaminants

- Common heavy metals in food systems
- Industrial and environmental sources
- Toxicological impacts on human health
- Testing and detection methods
- Risk management strategies in food chains
- Case study: Lead contamination in imported spices

Module 8: Food Safety Management and Control Systems

- HACCP application in chemical residue control
- Integration into food safety management systems (FSMS)
- Preventive controls and monitoring plans
- Building residue control frameworks in organizations
- Continuous improvement and corrective actions
- Case study: Successful residue control in aquaculture

Training Methodology

- Instructor-led expert presentations
- Group discussions and interactive sessions
- Practical laboratory demonstrations
- Case study reviews and analysis
- Problem-solving workshops and simulations

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

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