# Vertical and Controlled Environment Agriculture (CEA) Post-Harvest Training Course

Professional Development Training Course Outline

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

## Course Introduction

Vertical and Controlled Environment Agriculture (CEA) represents a revolutionary approach to modern farming, integrating technology, sustainability, and efficiency to optimize crop production. Vertical and Controlled Environment Agriculture (CEA) Post-Harvest Training Course focuses on post-harvest management, ensuring that harvested crops maintain quality, safety, and market readiness. Participants will gain hands-on knowledge and industry insights into innovative storage, preservation, and handling techniques essential for high-value crops in vertical farms and CEA systems.

As global demand for fresh, pesticide-free produce increases, the need for skilled professionals in post-harvest management becomes critical. This training provides a holistic understanding of CEA systems, from temperature-controlled storage to precision harvesting methods, enabling participants to enhance supply chain efficiency, minimize post-harvest losses, and maximize profitability. Key topics include advanced technologies, quality assessment, sustainability practices, and market-ready solutions tailored for modern agriculture professionals.

## Programme Curriculum

**Vertical and Controlled Environment Agriculture (CEA) Post-Harvest Training Course**

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**Course Objectives**

1. Understand the fundamentals of vertical farming and controlled environment agriculture.
2. Master post-harvest handling, storage, and preservation techniques.
3. Apply best practices for quality control in harvested crops.
4. Implement sustainable practices for energy-efficient post-harvest operations.
5. Evaluate crop shelf-life and storage conditions using advanced technologies.
6. Utilize automated monitoring systems for optimal storage environments.
7. Reduce post-harvest losses through improved logistics and handling methods.
8. Integrate CEA post-harvest strategies into commercial farming operations.
9. Develop skills for packaging, transportation, and market-ready preparation.
10. Identify crop-specific post-harvest requirements and protocols.
11. Understand regulatory compliance and food safety standards.
12. Analyze post-harvest data for informed decision-making.
13. Apply innovative solutions to optimize supply chain efficiency.

**Organizational Benefits**

?? Reduced post-harvest crop losses.

?? Enhanced crop quality and market value.

?? Improved operational efficiency and resource management.

?? Increased sustainability and reduced environmental impact.

?? Strengthened food safety compliance and regulatory adherence.

?? Optimized energy and storage solutions.

?? Advanced workforce skills in modern agriculture technology.

?? Increased profitability and ROI for vertical farming operations.

?? Enhanced decision-making through data-driven post-harvest practices.

?? Improved customer satisfaction with fresh, high-quality produce.

**Target Audiences**

1. Vertical farm managers and operators.
2. Agronomists and crop scientists.
3. Post-harvest specialists and food technologists.
4. Agricultural consultants.
5. Supply chain managers in fresh produce industry.
6. Sustainability and energy efficiency experts.
7. Entrepreneurs in urban agriculture.
8. Policy makers and regulators in agriculture sector.

**Course Duration: 5 days**

**Course Modules**

**Module 1: Introduction to Vertical and CEA Systems**

?? Overview of vertical farming and controlled environment agriculture.

?? Key technologies and innovations in CEA.

?? Benefits of integrating post-harvest management into CEA.

?? Global trends and market potential of vertical farming.

?? Introduction to crop types suitable for CEA systems.

?? Case study: Successful urban vertical farm integration.

**Module 2: Principles of Post-Harvest Management**

?? Understanding crop physiology and harvest timing.

?? Methods to prevent spoilage and maintain quality.

?? Role of temperature, humidity, and light in post-harvest life.

?? Tools for monitoring and controlling post-harvest conditions.

?? Packaging solutions for extended shelf life.

?? Case study: Post-harvest optimization in leafy greens.

**Module 3: Quality Assessment and Grading**

?? Criteria for assessing post-harvest quality.

?? Visual, sensory, and instrumental quality evaluation.

?? Grading standards for market readiness.

?? Use of technology for automated quality assessment.

?? Best practices for maintaining consistency in produce quality.

?? Case study: Automated grading systems for microgreens.

**Module 4: Storage and Preservation Techniques**

?? Cold storage management and refrigeration systems.

?? Modified atmosphere and controlled atmosphere storage.

?? Use of humidity and ethylene management in storage.

?? Packaging materials and their impact on shelf life.

?? Techniques for minimizing post-harvest losses.

?? Case study: Controlled atmosphere storage of tomatoes.

**Module 5: Sustainable Post-Harvest Practices**

?? Energy-efficient storage solutions.

?? Water and resource conservation strategies.

?? Waste reduction through composting and recycling.

?? Integration of renewable energy in post-harvest operations.

?? Sustainability certifications and compliance.

?? Case study: Green energy integration in hydroponic farms.

**Module 6: Packaging and Transportation Management**

?? Crop-specific packaging solutions.

?? Transportation logistics for freshness retention.

?? Minimizing mechanical damage during transit.

?? Cold chain management strategies.

?? Traceability and monitoring during transport.

?? Case study: Logistics optimization for perishable herbs.

**Module 7: Data-Driven Post-Harvest Decision Making**

?? Using IoT and sensors in post-harvest monitoring.

?? Data analytics for predictive storage conditions.

?? AI applications in post-harvest management.

?? Real-time monitoring of crop quality and shelf life.

?? Decision-making frameworks based on post-harvest data.

?? Case study: AI-enabled decision systems for leafy vegetables.

**Module 8: Regulatory Compliance and Food Safety Standards**

?? Overview of global food safety regulations.

?? Compliance with GAP, HACCP, and ISO standards.

?? Documentation and record-keeping best practices.

?? Risk management and traceability in post-harvest systems.

?? Training staff for safety and compliance adherence.

?? Case study: Implementing HACCP in a vertical farm.

**Training Methodology**

?? Interactive lectures and presentations.

?? Hands-on practical exercises and simulations.

?? Group discussions and knowledge sharing sessions.

?? Case study analysis and problem-solving workshops.

?? Field visits to vertical and controlled environment farms.

?? Continuous assessment and feedback for skill enhancement.

**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