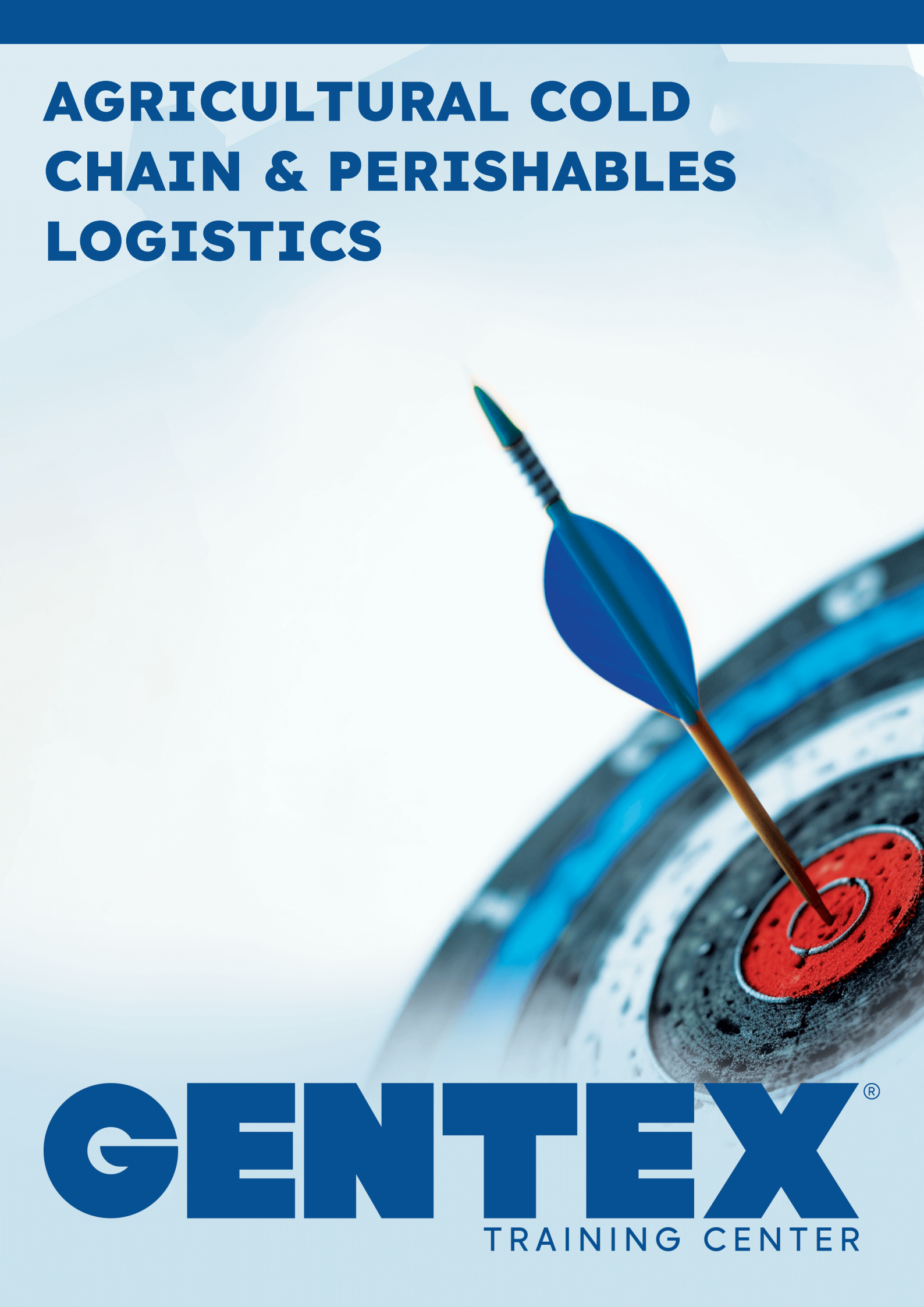
AGRICULTURAL COLD CHAIN & PERISHABLES LOGISTICS



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TRAINING CENTER

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Introduction

Fresh produce starts losing value the moment it leaves the field. Temperature swings, delayed loading, and broken cold continuity turn a premium harvest into a rejected consignment within hours. This Agricultural Cold Chain & Perishables Logistics Training Course gives logistics, quality, and supply chain professionals a practical method to protect product quality from harvest to shelf. Participants learn how to apply the cold chain principle end to end, select the right pre-cooling and storage regime for each commodity, control temperature during transport, and manage ripening and shelf life in a planned way. Furthermore, the course connects cold chain discipline to food safety rules, cost control, and real market access.

Agricultural Cold Chain & Perishables Logistics Course Objectives

- Apply the cold chain principle from harvest through storage, transport, and retail delivery.
- Select pre-cooling methods: forced air, hydro-cooling, vacuum cooling, and room cooling.
- Set correct temperature, humidity, and ventilation parameters for each commodity group.
- Use cold storage types, including controlled atmosphere (CA) and modified atmosphere (MA) storage.
- Operate refrigerated transport: reefer containers, multi-temp vehicles, and temperature recorders.
- Prevent cold chain breaks during loading, staging, and transhipment.
- Manage ethylene sensitivity, ripening programmes, and commodity compatibility.
- Apply food safety and hygiene standards: HACCP, GAP, and cold chain traceability.
- Control quality loss using shelf life modelling and first-expired-first-out rotation.
- Measure cold chain performance with temperature excursion, spoilage, and rejection rates.

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Course Methodology

- Facilitated sessions built on real consignment data and harvest calendars.
- Case workshops on rejected shipments, temperature breaches, and transit delays.
- Temperature profile reading exercises using logger charts and excursion reports.
- Group work on commodity storage specification tables.
- Simulation of a cold chain break investigation and corrective action plan.

Who Should Take This Course

- Cold chain and perishables logistics managers.
- Fresh produce exporters, importers, and traders.
- Quality and food safety officers in agriculture.
- Refrigerated transport and reefer fleet supervisors.
- Packhouse, cold store, and distribution staff.
- Procurement and sourcing teams buying fresh produce.

Agricultural Cold Chain & Perishables Logistics Course Outlines

Day 1: Cold Chain Fundamentals and Product Physiology

- Why perishables differ: respiration, transpiration, and ethylene production.
- The cold chain principle and the cost of every break in continuity.
- Harvest maturity indices and the harvest-to-cooling time window.

- Commodity classification by chilling sensitivity and storage life.
- Heat load sources: field heat, respiration heat, and ambient gain.
- Seasonality, market windows, and quality expectations.
- Cold chain roles and responsibilities across the chain.

Day 2: Pre-Cooling, Cold Storage, and Atmosphere Control

- Pre-cooling methods: forced air, hydro, vacuum, and room cooling compared.
- Cooling rate targets and half-cooling time concepts.
- Cold store design: insulation, air distribution, and door management.
- Controlled atmosphere and modified atmosphere storage principles.
- Temperature, humidity, and ventilation specifications per commodity.
- Storage compatibility and segregation to avoid taint and odour transfer.
- Cold store monitoring, alarms, and calibration.

Day 3: Refrigerated Transport and Handling

- Reefer container operation, set points, and defrost cycles.
- Multi-temperature vehicles and compartment management.
- Loading patterns, air circulation gaps, and pallet configuration.
- Temperature recorders, data loggers, and real-time monitoring devices.
- Staging, dock control, and preventing breaks between cold zones.
- Transhipment, port handling, and terminal dwell risks.
- Transport documentation, claims, and liability.

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Day 4: Ripening, Shelf Life, and Quality Control

- Ethylene management and ripening room programmes.
- Commodity compatibility matrices for mixed loads.
- Shelf life modelling and remaining shelf life assessment at delivery.
- First-expired-first-out and stock rotation discipline.
- Quality inspection: grading, defect scoring, and rejection criteria.
- HACCP, good agricultural practice, and hygiene controls in cold operations.
- Traceability from farm block to consignment.

Day 5: Cold Chain Performance, Cost, and Improvement

- Key indicators: temperature excursion rate, spoilage rate, and rejection rate.
- Energy cost, refrigeration efficiency, and load factor optimisation.
- Insurance, claims handling, and loss reduction.
- Cold chain audit checklists and supplier verification.
- Technology in cold logistics: IoT sensors, remote monitoring, and analytics.
- Building contingency plans for power loss and equipment failure.
- Designing an annual cold chain improvement plan.

Conclusion

By successfully completing the Agricultural Cold Chain & Perishables Logistics Training Course, participants will have acquired a solid working knowledge of product physiology, pre-cooling and storage regimes, atmosphere control, refrigerated transport, ripening management, food safety requirements, and cold chain performance measurement. They will leave able to protect quality at every handover, cut spoilage and rejections, and plan cold logistics that reach distant markets in good condition. Gentex Training Center delivers this programme with practitioners who handle perishable consignments in live operations.

FAQs for the Agricultural Cold Chain & Perishables Logistics course

Q1 What is the "Agricultural Cold Chain & Perishables Logistics" course about?

It is a five-day programme on keeping fresh produce and other perishables in good condition from harvest to delivery. It covers product physiology, pre-cooling, cold storage and atmosphere control, refrigerated transport, ripening, food safety, and performance measurement.

Q2 What are the key benefits of the "Agricultural Cold Chain & Perishables Logistics" course?

Participants cut spoilage and shipment rejections, extend usable shelf life, and protect product value in distant markets. They also reduce energy and claim costs, meet food safety expectations, and gain monitoring practices that catch a temperature breach before it becomes a loss.

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Q3 What skills will I gain from the "Agricultural Cold Chain & Perishables Logistics" course?

You will gain cold chain design and temperature regime setting, pre-cooling and cold storage management, refrigerated transport and handling control, and quality, shelf life, and food safety management with cold chain performance measurement.

Q4 What tools, methods, or standards are covered in the "Agricultural Cold Chain & Perishables Logistics" course?

The course works with forced air, hydro, vacuum and room pre-cooling methods, controlled atmosphere and modified atmosphere storage, commodity compatibility and ethylene management matrices, reefer set points and temperature data loggers, HACCP and good agricultural practice standards, first-expired-first-out rotation, shelf life modelling, and IoT cold chain monitoring with excursion reporting.

Q5 How is the "Agricultural Cold Chain & Perishables Logistics" course applied in real-world practice?

Teams apply it when setting storage specifications for a new commodity, reviewing a temperature excursion report, planning a reefer shipment to a distant market, and investigating a rejected consignment. It also guides packhouse cooling schedules, ripening room programmes, and carrier performance reviews.