

Modern and climate smart food supply chains

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16.05.2023, Bangkok



OUTLINE

- Preharvest
- Innovations in cold chain supply
- Processing equipment



PROBLEMS

- Climate change
- Losses in orchards
- Losses in storage
- Limited knowledge
- Lack of financing





LONG-TERM STORAGE FACTORS

Climate and place



Agricultural technology



Harvest time



Technology of storage



Environment protection and Cleaner production

Innovations in cold chain supply:



Environmentally Friendly Refrigerants



Energy Saving Systems



Automation systems



Innovative technologies of storage



Storage management

- Ozone-friendly refrigerants with zero ozone depletion potential
- Natural refrigerants:

Hydrocarbons (propane, isobutene)

Ammonia

CO₂

Water

Air



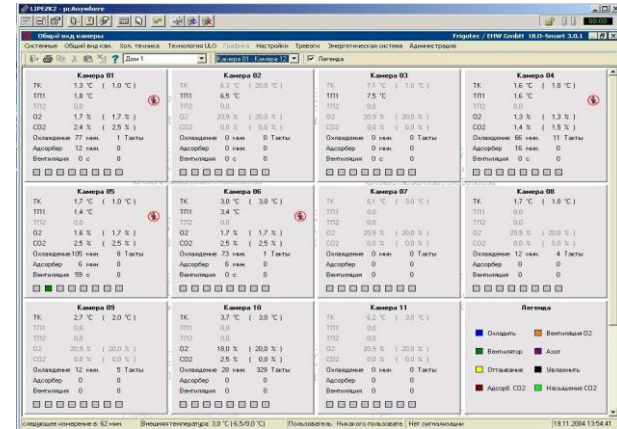
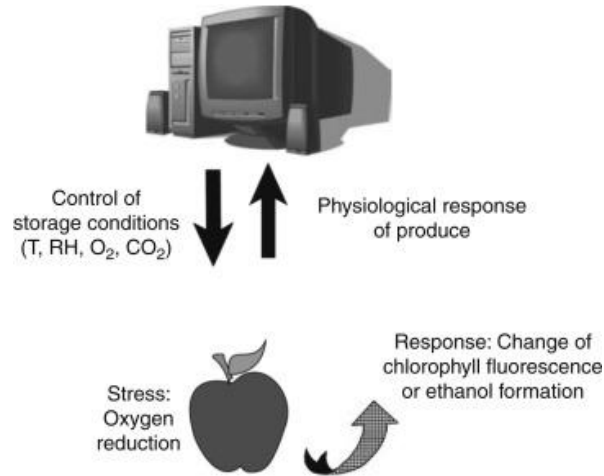
Key Benefit: Reduced environmental contamination and preservation of ozone layer, reduced global warming potential

- Alternative energy sources
- High Tech equipment
- Insulation and temperature preservation systems



Key Benefit: Reduced energy costs, increased storage period, keeping top quality products

- Sensors system
- Automatic control
- Software



Key Benefit: Strict products quality control, saving labor cost, getting high quality fresh products

Temperature

Ventilation



Humidity
>92-98 %

Controlled atmosphere

CO₂
O₂
Ethylene



Key Benefit: Long term storage with minimum products losses, prolonged shelf life of fresh products after storage

Intensive orchard



High technology storage



MCP-1



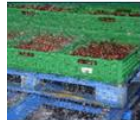
Apple juice processing line



For 9 months of storage product losses are down to 1%!

Due to gas-tight rooms, for 3 months of storage, equipment needed to be operated for 72 hours only!

- Pre-cooling
- Fast-cooling
- Hydro-cooling
- Palliflex system



Key Benefit: Reduced energy consumption, keeping products quality

Functional arrangement of space:

- Cold Storage
- Loading / Unloading
- Sorting / Packing

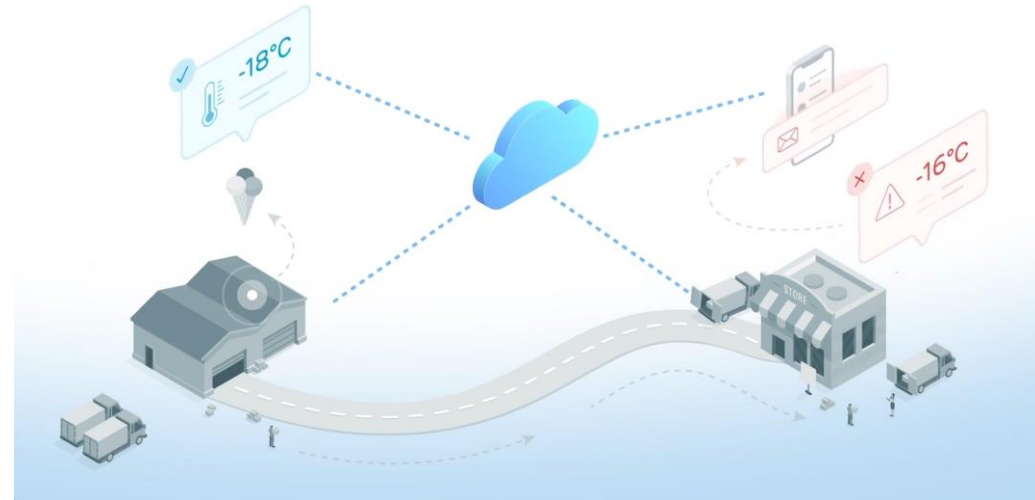


Key Benefit: Reduced energy costs, increased efficiency and speed of loading and unloading, to meet international standards of marketing and commercial quality control of fresh products



TRANSPORTATION

Temperature control on every step



Key Benefit: To keep high quality fresh products and minimize losses



PROCESSING EQUIPMENT

■ Natural juices and puree



■ Drying



Key Benefit: Minimized general losses in fields and storage, realize more profit



Support the promotion and implementation of high technologies



Education

- 👍 Increasing knowledge
- 👍 Invite professionals for training and seminars
- 👍 Visit professional world exhibitions
- 👍 Create demonstration projects



Financial Support

- 👍 Government grants and state subsidies
- 👍 Low rate loan
- 👍 Single agricultural tax
- 👍 Set up industrial cooperatives and clusters
- 👍 Involve international financing consulting organizations
- 👍 Partnership for partial financing

Caring for the environment, innovation and high technologies help us to save our Planet!



Thank you!



Any questions?
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