

Postharvest Diseases

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Stage; three
2021 – 2022

Postharvest loss:

Is defined as any change in the quality or quantity of the product after harvest that decreases its value.

- Postharvest = After Harvest
Concerned with the harvest of the crop
(when & how to harvest; maturity standards).
- pre-harvest = Before Harvest
Also in pre-harvest factors (seed source, rootstock, etc.)
because they strongly influence postharvest quality.

Losses during Storage



Causes of Postharvest Loss

Environmental Factors:

- Temperature
- Physical damage
- Relative humidity
- Atmospheric composition
- Light
- Rodents and other animals
- Contamination
- **Pathogens**



Borer in tomato



Chilling Injury



Water Loss



24°C

4°C

Estimated Postharvest Losses

The postharvest losses in fresh fruits and vegetables is an estimated 5 to 25 percent in developed countries and 20 to 50 percent undeveloped countries.

Pre storage treatments of fruits and vegetables

These are the treatments given to a commodity (fruits and vegetables in present context) generally after harvesting to reduce postharvest losses, enhance storage life and retain quality.

Examples of pre-storage treatments

- Cleaning
- Washing
- Sorting
- Grading
- Waxing
- Packing
- Pre cooling
- Curing
- Chemical treatments
- Irradiation
- Vapour heat treatment

Next

The Postharvest Goals

- Harvest the product at its optimum maturity.
- Maintain the product's internal and external quality throughout packing, storage and distribution.

It is Alive during this process!

- Deliver the fruit to consumers at the time and in a form (e.g. ripe, cut up, etc.) that they will purchase it.



Historical background

Early postharvest practices:

- Dried fruits, vegetables, meats, pickles, etc.
- Fermentation of juices.
- Salting or smoking.

All these methods KILL the product!

It is easier to transport and store the products.



Historical Background

Early Storage Practices:

- Basket making developed by 7,000 B.C.
- Underground pits and silos by 9,000 B.C.
- Ice box.



Historical Background

- 1872 - ice refrigerated rail cars were common.
- 1889 - ammonia refrigeration was widely used to make ice.
- 1928 - mechanical refrigerated displays used in retail stores.
- 1927 - controlled atmosphere studies begun.



Historical Background

Postharvest issues became important when cities developed:

- The Industrial Revolution (18th century).
- The Problem:
How to deliver fresh fruits and vegetables from areas of production to areas of consumption and keeping their quality?

All fresh produce is alive



The Challenge is to Keep Healthy Until Consumed!

