

POST HARVEST MANAGEMENT



✓ 1/3 of fresh produce harvested lost between harvest and consumption.

➡ Post-harvest Management

deals with time period from harvest to ultimate utilization / death of product.

➡ Post-harvest Loss

- ▶ nutritional value
- ▶ flavor
- ▶ economic value

➡ Post-harvest Problems

- ▶ weight loss
- ▶ fruit blemish
- ▶ fruit softening
- ▶ peel wilting
- ▶ chilling injury



Factors affecting post-harvest quality

✓*Internal*

- ▶ transpiration
- ▶ respiration
- ▶ ethylene product
- ▶ changes of chemical compositions
- ▶ development and growth of product

✓*External*

- ▶ temperature
- ▶ humidity
- ▶ gaseous compositions
- ▶ light
- ▶ gravity
- ▶ diseases, insects



Ethylene

- Effects of ethylene

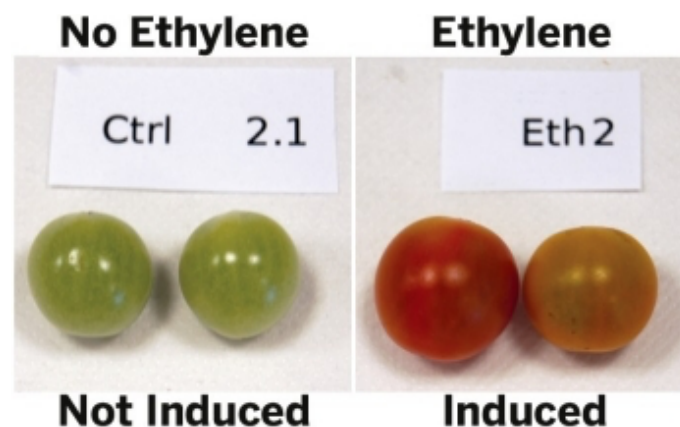
- ▶ chlorophyll degradation
- ▶ abscission
- ▶ fruit softening
- ▶ changes of carbohydrate
- ▶ stimulate flower senescence

- Stimulated when plant tissues are injured

- Fruits

▶ *climacteric fruit*

- increased respiration
- increased ethylene production
- softening
- chlorophyll degradation
- aroma , flavor



Harvesting Index

- days after planting
- days after anthesis
- days after fruiting
- physical measurements : color , shape , size , firmness
- biochemical measurements : ethylene production , respiration

Management Techniques for fruits and vegetables

- **Harvesting**
 - ▶ time , tool
 - ▶ man and animal labor
 - ▶ machine harvesting
- **Cleaning / Sorting / Grading / Sizing**
- **Treatment (Cold / Heat / Waxing)**
 - ▶ **Cooling** : air-cooling , hydro-cooling , ice-cooling
 - ▶ **Heating** : hot-water immersion , high temperature forced air , vapor heat
- **Packing-Storage**
 - ▶ contain , protect produce from compression bruising , vibration rubbing
 - ▶ Types : sack and net , basket , wooden crates
- **Transport**
- **Retail handling**