



Postharvest and Product Processing
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Safety and Quality Assurance of Tropical Fruits

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**Fruits are sources
of**

Vitamins

Minerals

Fiber and

Carbohydrates



Bananas
 Mangoes
 Pineapples
 Papayas

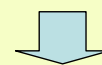


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Problems:

- Perishable
- Short harvesting season
- Short storage life and shelf-life
- Lack of postharvest management



high losses





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**Quality
assurance
system**



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Quality assurance (QA):

To provide consistent quality products to satisfy the markets or the consumers



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**Quality = wholesome and safe
fruits**



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Quality fruits are produced in the
field

proper postharvest management

maintains or enhances quality



QA system

- Market description
- QA plan
- Identify hazard and
- Establish control point
- Establish acceptance levels
- Monitoring system for each control point
- Corrective plan and verification procedure
- Documentation and Quality manual
- Improve the system



Market description:

- **Variety**
- **Quantity and frequency**
- **Transport**
- **Distribution system**
- **Maturity**
- **Quality attributes**
- **Treatments**
- **Temperature management**
- **Packaging**

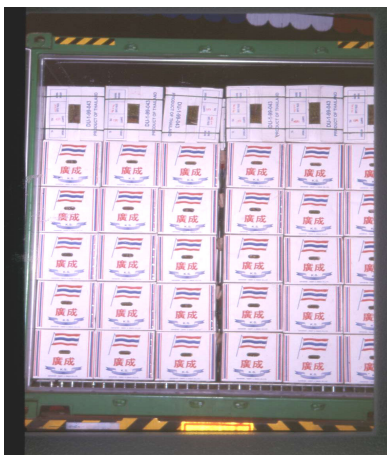


Transport

- Air
- Land
- Sea
 - Reefer container (RC)
 - Controlled atmosphere (CA) RC
 - Automatic fresh air management (AF AM+)



Distribution system





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Packaging

Wholesale / retail packaging

Modified atmosphere packaging (MAP)

Labeling requirement



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Temperature management

- Harvesting time
- Precooling
- Storage temperature
- Transport temperature
- Distribution and display temperature

All these relate to storage and shelf-life of the fruit



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Quality attributes

- minimum requirement of quality
- Size & shape
- defect allowance in size and shape
- flavor
- Safety attributes: chemical residue



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QA plan

- Preharvest
- Harvesting and
- Postharvest handling



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Preharvest

- Varietal selection
- Cultural practices
- Disease and insect control



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Postharvest

- **Harvesting- maturity, harvesting practices**
- **Cleaning**
- **Sorting/ sizing**
- **Treatment**
- **Packaging**
- **Cooling**
- **storage**
- **Transport**
- **Distribution**



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Identify preharvest and postharvest factors affecting quality

Chemical
Physical
Mechanical
Biological
Physiological



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- **Good agricultural practices (GAP)**
- **Good manufacturing practices(GMP)**
- **HACCP**

Applied in any step of the system



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Benefits of QA

- Reduce losses
- Improve quality
- Sustainable export
- Maintain consumer confidence
- ↑ Competitiveness
- More profit to all parties involved



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Thank you