Problems with Quality and Safety in the Sri Lankan Horticultural Sector and Steps Taken to Overcome These Issues

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Sri Lanka

- Tropical Island
- Mean temperature
  - Up country: 10 –15°C
  - Low/mid Country: 20 –25°C
- Rain fall
  - Up country: 2500 –5000 mm
  - Low/mid country: 2000- 3000 mm
Favorable climatic conditions for growth of exotic edible fruits and vegetables

Vegetables:
- Up country
  - carrot, beet root, leeks, cabbage, beans, radish, knolkhool etc.
- Low country
  - brinjal, bitter gourd, long beans, luffa, cucumber, capsicum, okra, snake gourd, etc.

Fruits:
- mango, pineapple, papaya, banana, rambutan, avocado etc.

Cultivation Extent and Production of Fruits and vegetables

<table>
<thead>
<tr>
<th>Extent of cultivation(ha)</th>
<th>Production (MT)</th>
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</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>110960</td>
</tr>
<tr>
<td>Fruits</td>
<td>62700</td>
</tr>
</tbody>
</table>

We produce fruits and vegetables

- For Domestic market - 99 %
- For export market - 01 %

Marketing Chain

Farmer/Grower → Collector → Whole seller → Retailer → Consumer
Vegetable and Fruit Marketing Channels in Sri Lanka

Needs to improve quality and safety of horticultural produce

- Increased production
- Competitive market
- High consumer demand
- Export potential

Prevailing Pre and Post Harvest Practices that affect quality and safety of fruits and vegetables: Pre harvest practices

- Poor quality planting material
- Application of unregistered and non recommended pesticides
- Spraying pesticides just before the harvesting i.e. within the pre harvest interval (14 days before harvesting) prescribed by the DOA
  - Safety issue: Pesticides residues in fruits and vegetables

Prevailing Pre and Post Harvest Practices that affect quality and safety of fruits and vegetables: Post harvest practices

Post Harvest Losses

<table>
<thead>
<tr>
<th></th>
<th>Vegetables</th>
<th>Fruits</th>
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<tbody>
<tr>
<td>Losses</td>
<td>16–40%</td>
<td>30–40%</td>
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</table>

Value: LKR 9000 (US $ 90) million annually

Prevailing Pre and Post Harvest Practices that affect quality and safety of fruits and vegetables: Post harvest practices

- **Harvesting**
  - Harvesting at incorrect stage of maturity
  - Harvesting at incorrect time of the day
  - Use of improper methods

Harvesting of vegetables
Prevailing Pre and Post Harvest Practices that affect quality and safety of fruits and vegetables: Post harvest practices

• Sorting and Grading

Farmers market their produce without sorting and grading

Sorting and grading are practiced only by some retail traders especially at supermarkets and exporters.

Only manual sorting is practiced

b) Sorting and grading

Prevailing Pre and Post Harvest Practices that affect quality and safety of fruits and vegetables: Post Harvest Practices

Pre treatments

• Pre-treatment procedures are practiced only by exporters for fruits
• Pre-treatment to control stem end rot in Mango: Dipping in hot water (50°C) + 5% calcium chloride + 5% sodium bicarbonate
Prevailing Pre and Post Harvest Practices that affect quality and safety of fruits and vegetables: Post Harvest Practices

Handling and transportation
- Use of improper packages
  - Polypropylene sacks
  - Used cardboard boxes
  - Tea chests
- Tightly packed in sacks
- Rough handling during loading and unloading
- Exposure of the fresh produce to sun and rains
- Use of improper trucks and lorries
• Prevailing Pre and Post Harvest Practices that affect quality and safety of fruits and vegetables: Post Harvest Practices

Use of industrial Calcium carbide for ripening fruits.
  Use of excess quantities
  Adoption of improper methods

Use of ethrel for ripening

• Prevailing Pre and Post Harvest Practices that affect quality and safety of fruits and vegetables: Post Harvest Practices

• Marketing – (Whole sale and retail)

2. Un protected retail outlets at road sides
Introduction of Low Cost Evaporative Cooling Device to Vegetable Retail Outlets

Major issues and constraints to improving quality and safety of fruits and vegetables

- Awareness of improved technology
- Capital to acquire improved technologies
- Proper marketing channels
- Price incentives for quality products
- Infrastructure facilitates
- Testing and certification facilities

Current programmes for improvement of quality and safety in the traditional horticultural marketing chain

Introduction of plastic crates to collectors and traders

- Strategic approach
  1. Identification of appropriate packagers for different crops
  2. Collective participation
  3. Training
  4. Provision of concessionary credit facilities to acquire improved packages

Outcome

1. Reduction of losses from 25% to 4%
2. Increase in income by 30-40%
3. Better price for farmers
4. Better quality and safe fruits for consumers
5. Use of ethrel for ripening fruits instead of industrial calcium carbide.
6. Use of improved improved harvesting tools

Recommendations

- Provision of concessionary credit facilities and subsidies to acquire improved technologies.
- Development of GAP, GMP and HACCP for economically important fruits and vegetables
- Strict enforcement of Pesticide Act and upgrading the existing food laboratories to carry out pesticide residues analysis
- Strengthening the existing marketing channels and creation of new marketing channels linking producers and supermarket chains
- Establishment of pack house facilities at collecting and Dedicated Economic Centres
- Upgrading the infrastructure facilities of existing collecting centres, wholesale and retail markets
• Strengthening the existing technology transfer mechanisms and market information systems.

• Provision of adequate resources to undertake further research pertaining to PHM of fruits and vegetable.

• Requirement of a long term Government policy to address the problems of PHM in Sri Lanka.