Innovations in Vegetables

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Overview

What’s appropriate
What we’re currently doing
What’s also new in those areas
What else is novel?
Appropriate Innovations

Suitable for smallholder farmers
Publicly available and already implemented
Accessible by AVRDC and partners
Only local adaption needed
Our current innovative introductions

Protected cultivation

- Best varieties
- Pest management
- New crops
- Drip irrigation
- New structures
Our current innovative introductions

Mungbean production

New areas
Intercropping
Seed
Insect pests
Harvesting
Our current innovative introductions

Value chains

Basic seed
Seed value chains
Baselines
Validation
What’s also new in these areas?

- **Mauritius** - protected tomato production
- **Vietnam** - protected vegetable cultivation in Da Lat
- **Oman** - protected field production
- **Brunei** - protected seedling production
What’s also new in these areas?

Soil solarization for non-chemical control of nematodes
What’s also new in these areas?

Core mungbean collection

Sources of resistance to viruses and insect pests
What’s also new in these areas?

Rootstocks and scions grafted to produce high-yielding, biotic stress resistant and/or abiotic stress tolerant plants.

Lam Dong Province, Vietnam: 100% uptake by farmers - grafting with resistant eggplant and tomato rootstocks to manage bacterial wilt of tomato.
What else can be considered?

- **IPM for Eggplant fruit and shoot borer**
- **Biopesticides for diamond back moth in crucifers**
- **Phosphorous acid for control of late blight**
What else can be considered?

Identification of virus complexes

Farmers’ knowledge of virus management

Training in insecticide use
What else can be considered?

Nutrient dense crops

![Graph showing percentage change in micronutrient content (1950-1999)](chart)

- Cabbage
- Cucumber
- Eggplant
- Lettuce
- Sweet peppers
- Spinach
- Tomato

Legend:
- Calcium
- Phosphorus
- Iron
- Vitamin A
- Thiamin
- Riboflavin
- Niacin
- Ascorbic acid
What else can be considered?

Expanding the use of traditional vegetables

<table>
<thead>
<tr>
<th></th>
<th>Ranges</th>
<th>Tomato</th>
<th>Cabbage</th>
<th>Moringa</th>
<th>Amaranth</th>
<th>Aibika</th>
<th>Sweet potato leaf</th>
</tr>
</thead>
<tbody>
<tr>
<td>β-carotene (mg/100g)</td>
<td>0.0 - 22</td>
<td>0.40</td>
<td>0.00</td>
<td>15.28</td>
<td>9.23</td>
<td>5.11</td>
<td>6.82</td>
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<tr>
<td>Vitamin C (mg/100g)</td>
<td>1.1 - 353</td>
<td>19</td>
<td>22</td>
<td>459</td>
<td>113</td>
<td>82</td>
<td>81</td>
</tr>
<tr>
<td>Vitamin E (mg/100g)</td>
<td>0.0 - 71</td>
<td>1.16</td>
<td>0.05</td>
<td>25.25</td>
<td>3.44</td>
<td>4.51</td>
<td>4.69</td>
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<tr>
<td>Iron (mg/100g)</td>
<td>0.2 - 26</td>
<td>0.54</td>
<td>0.30</td>
<td>10.09</td>
<td>5.54</td>
<td>1.40</td>
<td>1.88</td>
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<tr>
<td>Folates (mg/100g)</td>
<td>2.8 - 175</td>
<td>5</td>
<td>ND</td>
<td>93</td>
<td>78</td>
<td>177</td>
<td>39</td>
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<tr>
<td>Antioxidant activity (TE/100g)</td>
<td>0.6 - 82,000</td>
<td>323</td>
<td>496</td>
<td>2858</td>
<td>394</td>
<td>560</td>
<td>870</td>
</tr>
</tbody>
</table>
What else can be considered?

Peri-urban vegetable production

Gardens and dietary diversity

Smallscale seed kits
What else can be considered?

Identifying pre- and postharvest losses in chili and tomato is just the start

![Bar chart showing pre- and postharvest losses in chilies and tomatoes]

Sources: AVRDC-TNAU survey 2013 (preharvest losses); Viswanathan et al. 1998 Status of Harvest and Post Harvest Losses of Tomato in Tamil Nadu, Agricultural Engineering Today 22(5/6): 28-35 (postharvest losses)
What else can be considered?

Stronger engagement with the private sector in best-practice hubs
Thank you