Tomato Trekker

Tomato storage and transportation from harvest to market

Yellow B
Low production countries account for 26% of total tomato yield each year.

- 136M tonnes produced globally in 2009
- 35M tonnes of those tomatoes came from countries producing less than 1.5% of total volume
These farms experience 20-30% post-harvest losses

- For these countries, post-harvest losses total 7-11M tonnes annually

- Caused by:
  - Physical injury
  - Temperature effects
  - Disease & pests

*Standard tomato transport crate*
Targeted reduction of loss to less than 10% of harvest

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<th>Targets</th>
<th>Solutions</th>
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<td>Physical</td>
<td>• Separation by layers</td>
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<td>• Modular containers</td>
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<td>• Suspension on cart/tomato trays</td>
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<td>Temperature</td>
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<td>• Closed containers</td>
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<td>Disease &amp; pests</td>
<td>• Closed containers</td>
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Low cost solution vs. large production solution

Tomato Trekker
CAD model draft

Full view

Cut-away

Tomato Trekker
Questions we asked

Can we:

• Reduce physical trauma on tomatoes
  • Yes! 20% damaged with no protection, 11% damaged with just shelves, 0% damaged with shelves and mesh

• Reduce temperature and humidity of transportation environment
  • Inconclusive, mesh may have helped

• Integrated solution from harvest to market
  • Modularity possible but implementation needs to be reworked
20% of unprotected tomatoes were visibly damaged
Areas for further research

Materials for containers

Modularity

Evaporative cooling

Container tray suspension

Stronger disease & pest controls

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Kate Mytty & Alison Hynd; PSC
Daniel Makrauer-Madden; MIT Edgerton Center (Yunus Challenge), former employee at Global Cycle Solutions Tanzania, and former Peace Corp Volunteer in Kenya

Tomato Trekker
Questions

Tomato Trekker