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The U.S. Government's Global Hunger & Food Security Initiative

# Webinar 8: How to improve postharvest management for horticultural crops

Horticulture for Development Professional Series

Questions? Email [horticulture@ucdavis.edu](mailto:horticulture@ucdavis.edu)



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# Importance of Good Postharvest Handling (like Good Agricultural Practices – GAP)

Beth Mitcham

University of California, Dept. of Plant Sciences

Horticulture Innovation Lab

Postharvest Technology Center



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# The Contribution of Horticulture Crops



# *Characteristics of Fruits and Vegetables*

- Good source of nutrients
- High water content
- Easily damaged
- Alive – a biological system
- Deterioration begins at harvest



## *Estimated Postharvest Losses (%) of Fresh Produce*

<b>Locations</b>	<b>Developed Countries</b>		<b>Developing Countries</b>	
	<b>Range</b>	<b>Mean</b>	<b>Range</b>	<b>Mean</b>
From production to retail sites	2-23	12	5-50	22
At retail, foodservice, and consumer sites	5-30	20	2-20	10
Cumulative total	3.5-26.5	32	3.5-35	32



# Postharvest Losses of Fruits and Vegetables

- Quantitative
- Qualitative
  - Loss of acceptability by buyer
  - Loss of weight
  - Loss of caloric and nutritive value
  - Loss of edibility



# *Reducing Losses is Key to Sustainability and Food Security*

- Highly nutritious products, like fruits and vegetables, are often more perishable
- Investments lost when produce degrades
  - land, energy, seed, fertilizer, water, and labor
- To increase food security, must reduce produce losses after harvest along with enhanced productivity
- Increased availability increases returns to farmers and may reduce prices for consumers



# SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

<b>1</b> NO POVERTY 	<b>2</b> ZERO HUNGER 	<b>3</b> GOOD HEALTH AND WELL-BEING 	<b>4</b> QUALITY EDUCATION 	<b>5</b> GENDER EQUALITY 	<b>6</b> CLEAN WATER AND SANITATION 
<b>7</b> AFFORDABLE AND CLEAN ENERGY 	<b>8</b> DECENT WORK AND ECONOMIC GROWTH 	<b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE 	<b>10</b> REDUCED INEQUALITIES 	<b>11</b> SUSTAINABLE CITIES AND COMMUNITIES 	<b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION 
<b>13</b> CLIMATE ACTION 	<b>14</b> LIFE BELOW WATER 	<b>15</b> LIFE ON LAND 	<b>16</b> PEACE, JUSTICE AND STRONG INSTITUTIONS 	<b>17</b> PARTNERSHIPS FOR THE GOALS 	 <b>SUSTAINABLE DEVELOPMENT GOALS</b>



# Causes of Postharvest Loss in the Developing World

- High Temperatures after Harvest
  - Sun exposure, lack of cooling, cold transport/storage
- Water Loss
  - high temperatures, low RH, poor packaging
- Physical Damage
  - poor packaging, inadequate transportation
- Decay
  - high temperatures, poor sanitation, physical damage
- Inadequate drying and dry storage
  - molds, mycotoxins, deterioration

# Reasons for Low Adoption



- Lack of incentives/market
- Lack of resources/capital
- Lack of information among farmers, handlers and marketers
- Policies that inhibit best practices
- Others?

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