Luffa
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Specific Name and Introduction

There are two main species of cultivated luffa (loofah). Angled luffa or Chinese okra (*Luffa acutangula*), a green, immature fruit with longitudinal ridges, is consumed like summer squash. Smooth luffa or sponge gourd (*Luffa aegyptiaca* Mill) is sometimes eaten as a vegetable, but mature fruit are mainly used to make sponges for cosmetics and cleaning (Ellington and Wehner 1996). Both are members of the Cucurbitaceae family.

Quality Characteristics and Criteria

Edible fruit are harvested while immature. If angled luffa are left to mature, blossom-end enlarges, stem-end shrinks, and bitter flavor develops (Zong et al. 1993). Quality loss is most often associated with loss of green color.

Grades, Sizes, and Packaging

There are no U.S. grades for luffa.

Horticultural Maturity Indices

Luffa are harvested immature and selected based on size.

Optimum Storage Conditions

Angled luffa can be stored for up to 2 weeks at 10 to 12 °C (50 to 54 °F) with 90 to 95% RH (Zong et al. 1992, 1993, Cantwell 1997).

Controlled Atmosphere (CA) Considerations

There is no published information on CA for luffa.

Retail Outlet Display Considerations

Top-icing is not acceptable due to luffa’s chilling sensitivity. Water sprays are acceptable.

Chilling Sensitivity

Fruit are sensitive to chilling at <10 °C (50 °F) (Zong et al. 1993). Symptoms include skin discoloration, watery lesions under the skin, and enhanced decay.

Ethylene Production and Sensitivity
Angled luffa produce very low levels of ethylene: <0.1 μL kg⁻¹ h⁻¹ at 20 °C (68 °F). However, luffa is sensitive to ethylene during postharvest handling, which results in a loss of green color and reduced quality (Zong et al. 1993).

**Respiration Rates**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>mg CO₂ kg⁻¹ h⁻¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 °C</td>
<td>14</td>
</tr>
<tr>
<td>5 °C</td>
<td>27</td>
</tr>
<tr>
<td>10 °C</td>
<td>36</td>
</tr>
<tr>
<td>15 °C</td>
<td>63</td>
</tr>
<tr>
<td>20 °C</td>
<td>79</td>
</tr>
</tbody>
</table>

Data from Zong et al. (1992, 1993).

To get mL CO₂ kg⁻¹ h⁻¹, divide the mg kg⁻¹ h⁻¹ rate by 2.0 at 0 °C (32 °F), 1.9 at 10 °C (50 °F), and 1.8 at 20 °C (68 °F). To calculate heat production, multiply mg kg⁻¹ h⁻¹ by 220 to get BTU ton⁻¹ day⁻¹ or by 61 to get kcal tonne⁻¹ day⁻¹.

**Physiological Disorders**

Luffas should be handled with care; damage to longitudinal ribs leads to water loss and decay. Fruit are susceptible to dehydration and toughening of the peel.

**Postharvest Pathology**

No specific information is available.

**Quarantine Issues**

None are known.

**Suitability as Fresh-Cut Product**

No current potential exists.

**Special Considerations**

Care must be taken with selection of the correct immature stage; damage to the ribs must be carefully controlled as it leads to water loss and decay.

**References**


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