Recommendations for Maintaining Postharvest Quality

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MATURITY INDICES
Fresh market figs must be harvested when almost fully ripe to be of good eating quality. Skin color and flesh firmness are dependable maturity and ripeness indices. ‘Black Mission’ figs should be light to dark purple rather than black and should yield to slight pressure. ‘Calimyrna’ figs should be yellowish-white to light yellow and firm.

QUALITY INDICES
Fresh figs’ skin color and flesh firmness are related to their quality and postharvest life. Flavor is influenced by stage of ripeness and overripe figs can become undesirable due to fermentative products. Other quality indices include absence of defects (such as bird-peck, sunburn, scab, skin break, and stem shrivel), insects, and decay.

OPTIMUM TEMPERATURE

<table>
<thead>
<tr>
<th>Temperature</th>
<th>ml CO₂/kg·hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C</td>
<td>°F</td>
</tr>
<tr>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>5</td>
<td>41</td>
</tr>
<tr>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>20</td>
<td>68</td>
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</table>

To calculate heat production, multiply ml CO₂/kg·hr by 440 to get BTU/ton/day or by 122 to get kcal/metric ton/day.

OPTIMUM RELATIVE HUMIDITY
90-95%

Expedited forced-air cooling to 0°C (32°F) is strongly recommended.

RATES OF ETHYLENE PRODUCTION

<table>
<thead>
<tr>
<th>Temperature</th>
<th>0°C (32°F)</th>
<th>5°C (41°F)</th>
<th>10°C (50°F)</th>
<th>20°C (68°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ul C₂H₄/kg·hr</td>
<td>0.4-0.8</td>
<td>0.8-1.5</td>
<td>1.5-3.0</td>
<td>4.0-6.0</td>
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</tbody>
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RESPONSES TO ETHYLENE
Figs are slightly sensitive to ethylene action on stimulating softening and decay severity, especially if kept at 5°C (41°F) or higher temperatures.
### PHYSIOLOGICAL AND PHYSICAL DISORDERS

#### CA-related disorders. Extended storage in CA can result in loss of characteristic flavor. Figs exposed to less than 2% oxygen and/or more than 25% carbon dioxide develop off-flavors due to fermentative metabolism.

#### PATHOLOGICAL DISORDERS

- **Alternaria rot.** Caused by *Alternaria tenuis*, appears as small, round, brown-to-black spots over the fruit surface. Any cracks on the skin make the fruit more susceptible to the rot.

- **Black mold rot.** Caused by *Aspergillus niger*, appears as dark or yellowish spots in the flesh with no external symptoms. At advanced stages the skin and flesh turn slightly pink color and white mycelia with black spore masses follow.

- **Endosepsis (soft rot).** Caused by *Fusarium moniliforms*, appears in the cavity of the fig making the pulp soft, watery and brown with sometimes an offensive odor.

- **Souring.** Caused by various yeasts and bacteria, is a preharvest problem resulting from yeasts and bacteria carried into the figs by insects, especially vinegar flies, resulting in smells of alcohol or acetic acid.

### CONTROL OF POSTHARVEST DISEASES

- Control of orchard insects to reduce fruit damage and transmission of fungi.
- Effective control of preharvest diseases.
- Strict sanitation of picking and transporting containers.
- Careful handling to minimize abrasions, cracks, and other physical damage.
- Do not pick figs for fresh market from the ground.
- Prompt cooling to 0°C (32°F) and maintaining the cold chain all the way to the consumer.
POSTHARVEST PHOTO GUIDE

MATURITY AND QUALITY

SIERRA FIG MATURITY

BROWN TURKEY FIG MATURITY

DISORDERS

TEMPERATURE AND CA EFFECTS ON SIERRA FIGS

DECAY FOLLOWS PHYSICAL DAMAGE

TEMPERATURE AND CA EFFECTS
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