Apricots
Postharvest Quality Maintenance Guidelines

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Scientific Name and Introduction

The apricot is native to central and western China. This fruit was brought to Italy about 100 B.C., to England in the 13th century, and to North America by 1720. Most of the apricots in the U.S. are grown in California; with much smaller amounts grown in Washington and Utah.

Quality Characteristics and Criteria

Fruit size, shape, and freedom from defects (including gel breakdown and pit burn), and decay. High consumer acceptance is attained for fruit with high (>10%) soluble solids content (SSC) and moderate acidity (0.7-1.0%). Apricots with 2-3 pounds-force flesh firmness are considered "ready to eat". Most apricot cultivars soften very fast making them very susceptible to bruising and subsequent decay.

Horticultural Maturity Indices

In California, harvest date is determined by changes in skin ground color from green to yellow. The exact yellowish-green color depends on the cultivar and shipping distance. Apricots should be picked when still firm because of their high bruising susceptibility when fully-ripe and soft.

Grades, Sizes and Packaging

Apricots are always harvested by hand, usually into picking bags or plastic totes. Apricots are generally handled in half bin or totes and hand packed. In some cases, apricots are dry-dumped over a soft packing line. Apricots are single and two layers tray-packed, or volume-

filled (about 10 kg net). Apricot should be uniform in size and not more than 5%, count, of the apricot in each container may vary more than 6-mm when measured through the widest portion of the cross section.

Optimum Storage Conditions

Apricots are seldom stored in large quantities, although they keep well for 1 to 2 weeks, or possibly even 3 to 4 weeks, depending on cultivar, at -0.5^{o}C to 0^{o}C and a relative humidity of 90-95% R.H. Susceptibility of cultivars to freezing injury depends on SSC, which may vary from 10-14%. Highest freezing point = -1.0^{o}C.

Controlled Atmosphere (CA) Considerations

The major benefits of CA during storage/shipment are to retain fruit firmness and ground color. CA conditions of 2-3% O_2 + 2-3% CO_2 are suggested for moderate commercial benefits; extent of benefits depends on cultivar. Exposure to <1% O_2 may result in development of off-flavors and >5% CO_2 for longer than 2 weeks can cause flesh browning and loss of flavor. The addition of 5-10% CO_2 as a fungistat during transport (less than two weeks), may improve the potential for benefit from CA. Prestorage treatment with 20% CO_2 for 2 days may reduce incidence of decay during subsequent transport and/or storage in CA or air.

Retail Outlet Display Considerations

Cold table display is recommended because of their fast ripening. Ripening before consumption (home) should be ideally done at temperatures of 18^{o}C to 24^{o}C.

Chilling Sensitivity

Chilling sensitive cultivars develop chilling injury symptoms (gel breakdown, flesh browning, loss of flavor) more rapidly at 5^{o}C than at 0^{o}C. Storage at 0^{o}C is necessary to minimize incidence and severity of chilling injury on susceptible cultivars.

Rates of Ethylene Production and Sensitivity

Ethylene production rates increase with ripening and storage temperature (<0.1 :l/kg•hr at 0°C to 4-6 :l/kg•hr at 20°C) for firm-ripe apricots and higher for soft-ripe apricots. Exposure to ethylene hastens ripening (as indicated by softening and color changes from green to yellow). Also, ethylene may encourage growth of decay-causing fungi.

Respiration Rates

Temperature °C	ml CO_2/kg•hr
0	2-4
10	6-10
20	15-25

To calculate heat production rates multiply ml CO_2/kg•hr by 440 to get BTU/ton.day or by 122 to get kcal/metric ton.day

Physiological Disorders

Gel Breakdown or Chilling Injury: This physiological problem is characterized in the earlier stages by the formation of water-soaked areas that subsequently turn brown. Breakdown of tissue is sometimes accompanied by sponginess and gel formation. Fruit stored at 2.2-7.6°C have short market life and lose flavor.

Pit Burn: Flesh tissue around the stone softens and turns brown when the apricots are exposed to temperatures above 38°C before harvest. This heat injury increases with higher temperatures and longer durations of exposure.

Postharvest Pathology

Brown rot: Caused by *Monilia fructicola* is the most important postharvest disease of apricot. Infection begins during flowering. Fruit rots may occur before harvest, but often occur postharvest. Orchard sanitation to minimize infection sources, preharvest fungicide application and prompt cooling after harvest are among the control strategies.

Rhizopus Rot*:* Caused by *Rhizopus stolonifer* occurs frequently in ripe or near-ripe apricot fruits held at 20 to 25^{o}C. Cooling the fruit and keeping them below 5^{o}C is very effective against this fungus.

Suitability as Fresh-cut Product

Fresh-cut apricot wedges should be kept at 0^{o}C and 90-95% RH to maintain their quality for 2-5 days, depending on cultivar and ripeness stage.

Special Considerations

The greatest hazard in handling or shipping apricots is decay—mainly brown rot and rhizopus rot. Quick cooling of apricots to temperatures of 4^{o}C or lower and holding them at as near 0^{o}C as possible will retard ripening (softening) and decay.

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Acknowledgments

Most of this information was extracted from the University of California - Davis website on “Fresh Produce Facts” at http://postharvest.ucdavis.edu/produce/producefacts/