

Avocado Best Harvest Practices

The California avocado harvest season is in full swing and high summer temperatures are upon us. That said, it's a good time to review best harvest practices to ensure harvested fruit maintain premium quality. It is important to remember that fruit will never be of a higher quality than the moment they are harvested. Everything that is done postharvest — timely transport to the packinghouse, cooling, ripening — is done with the goal of maintaining fruit quality, but fruit quality can never be increased postharvest. It is also critical to remember the post-harvest period begins in the field at the moment of harvest, so let's review the factors and practices that influence fruit quality at harvest.

Rainfall

While this may seem like wishful thinking under California's current drought situation, late spring rain can be a factor in harvesting during the early season. Fruit should never be harvested when wet, or within 24 hours of more than 0.25-inch of rain. Immediately following a rain event, fruit will be fully hydrated. In this state, the lenticels — pores in the fruit peel — are susceptible to harvesting damage that can lead to poor fruit appearance and potentially fruit rot.

Temperature

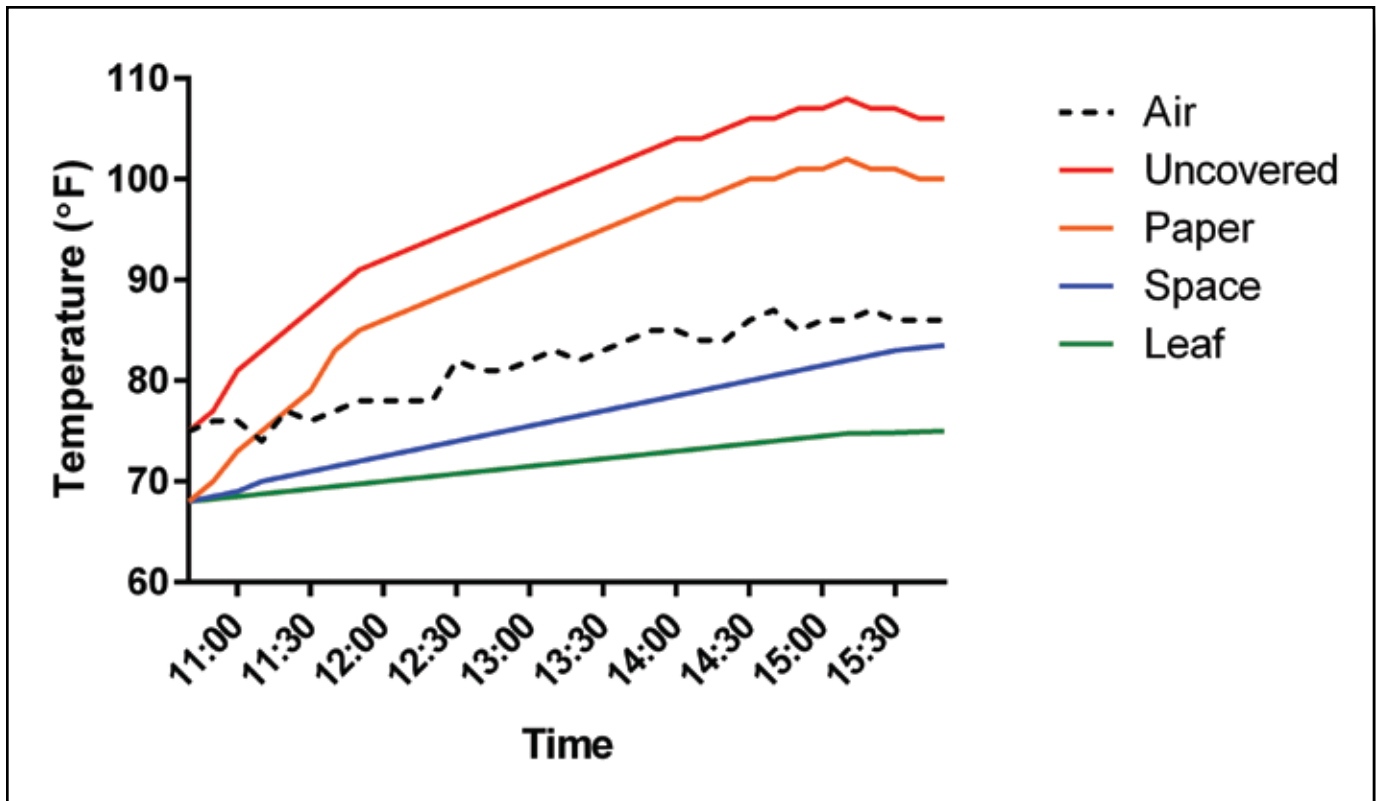
In California, there is perhaps no more important factor to consider when harvesting than temperature, especially for inland growing areas. Harvesting should occur when air temperatures are less than 85 °F if possible, and never above 95 °F. This is especially important for late season fruit with advanced maturity. During hot weather, if harvesting cannot be paused, harvesting should begin early in the morning in the most sun-exposed areas of the grove — south

and west facing slopes — and move to the more sheltered parts of the grove — north and east facing slopes — as the day warms up. The time from harvest to cooling the fruit should be minimized. If you are harvesting over several days, full bins should be picked up at least once a day rather than stored in the field.

Harvested fruit must be kept in a shaded location and the bins covered with avocado branches (preferably) or a reflective tarp (aka, space blanket), to



Lenticel damage on a Hass avocado. Photo courtesy of Mary Lu Arpaia, University of California.



Changes in fruit pulp temperature in the top of the bin as influenced by bin covering. Redrawn from: Arpaia et al., 1992, California Avocado Society Yearbook 76:93-97.

keep the fruit cool. Research conducted many years ago by University of California, Riverside retired plant physiologist Irv Eaks showed that when fruit is held above 86 °F after harvest, normal ripening can be inhibited.

Later research conducted by Mary Lu Arpaia in the 1990s demonstrated how different bin covers affected fruit pulp temperature of the top layer in the bin. With no covering, fruit pulp temperatures of fruit on the top of the bin (i.e., sun exposed fruit) rose to about 20°F above air temperature. Likewise, fruit in bins covered with brown kraft paper heated up nearly as much as the open bins. Mylar space blankets held fruit at slightly below air temperature, but fruit in bins covered with leaves stayed about 15°F below air temperature. The evaporation from the leaves

is effectively an evaporative cooler and keeps the fruit the coolest. Keeping the bins covered, and fruit temperatures down, resulted in substantially lower fruit decay and discoloration during storage and ripening.

Physical Damage

Although avocados are picked green and “rock hard,” they are still susceptible to physical damage. Physical damage to the fruit must be minimized at all points in the handling process, beginning with harvesting. Individual fruit or picking sacks of harvested fruit should never be dropped to the ground from large trees. Not only can this cause significant damage to the fruit, but fruit that has been in contact with the ground is considered a food safety hazard and is prohibited under the Food Safety Mod-

ernization Act.

Picking sacks should be examined for debris (e.g., sticks or rocks) that may be picked up inadvertently during harvest and this debris removed every time the picking sack is emptied. Likewise, harvest bins should be inspected for debris or any physical damage that could damage the fruit. When fruit is being transferred to the bins, the picking sacks should be placed into the bins and the fruit emptied from the bottom of the picking sack such that the fruit do not fall more than about 4 inches. Do not overfill bins. If bins are overfilled, the top layer of fruit will be damaged when the bins are stacked for transport and the pressure could bruise lower fruit, which may not be evident until the fruit ripens. 🥑