Nectarines

Revised 2018

Thermal Properties

	English	Metric
Moisture, %	86.28	--
Protein, %	0.94	--
Fat, %	0.46	--
Carbohydrate, %	11.78	--
Fiber, %	1.60	--
Ash, %	0.54	--
Specific Heat Above Freezing	0.92 Btu/lb*°F	3.86 kJ/(kg*K)
Specific Heat Below Freezing	0.45 Btu/lb*°F	1.90 kJ/(kg*K)
Latent Heat of Fusion	124 Btu/lb	288 kJ/kg

Storage Conditions

Temperature	31-32°F (-0.5 to 0°C)
Relative Humidity	90-95%
Storage Period	4-6 weeks depending on variety
Highest Freezing Point	30.4°F (-0.9°C)

In general, current nectarine cultivars are less susceptible to internal breakdown, including flesh browning and mealiness, or chilling injury (CI) than current peach cultivars. In most of the cases, flesh bleeding is not an internal breakdown (IB) symptom. All nectarines should be pre-cooled quickly after harvest to temperatures lower than 36°F (2.2°C). Forced air cooling is one of the most common cooling methods, although hydro-cooling is very common in some areas. Good sanitation practices are very important during pre-cooling, packing, and storage of nectarines.

Modern nectarine cultivars can be stored at least 6 weeks at 32°F (0°C) and maintain acceptable exterior and interior appearances and flavor. Cultivars not susceptible to CI store well for at least 3 weeks at 41°F (5°C). In CI susceptible cultivars, with longer storage, the exterior does not change but the flesh becomes dry and brown. In highly CI susceptible cultivars, flesh mealiness and browning may occur within 1-2 weeks storage at 41°F (5°C) which makes this a very undesirable storage temperature for nectarines. Shifting fruit to 41°F (5°C) after storage for 1 or 2 weeks at 32°F (0°C) is also undesirable, as it results in fruit with severe CI and poor flavor. CI in these fruits may be as severe as in fruit stored continually at 41°F (5°C). Internal disorders caused by improper storage often are not apparent until nectarines are examined after

ripening at 65°F (18.3°C) or above. No CI develops at 50°F (10°C) or greater, but that temperature is unsatisfactory because of rapid flesh softening, water loss, and decay development.

Shriveling may be a problem in storing nectarines if care is not taken to maintain low temperature and high relative humidity. Shriveling becomes visible with a weight loss of 6-8%. This problem has been reduced by picking earlier in the day, short cooling delay, fast cooling, waxing, careful control of the temperature, air velocity, and relative humidity during storage.

The possibility of using controlled atmosphere (CA) to extend storage has been investigated. The major benefits of CA (1-2% O_2 + 5% CO_2) during storage/shipment are retention of fruit firmness, color changes, and limited control of CI. 10% O_2 + 10% CO_2 are sometimes used for reduction of CI during storage/shipment. Oxygen levels below 1% and CO_2 levels above 15% should be avoided because of associated development of off-flavors or skin brown discoloration and pitting development. The use of postharvest fungicide/waxing application is essential to extend post-harvest life.

The storage and market diseases of nectarines and their control are described and illustrated in USDA Agricultural Handbook No. 414 issued in 1972. Brown rot is the most important disease of nectarines after harvest. Rhizopus rot is second only to brown rot as the most important market disease of nectarines. Infections occur primarily through wounds, so careful handling is important. Short delay cooling and refrigerated storage near 32°F (0°C) is the primary control measure for Rhizopus rot. This fungus will not grow below 45°F (7°C).

WFLO is indebted to Dr. Carlos H. Crisosto, Plant Sciences Department, stationed at Kearney Agricultural Center, University of California, Davis, and Dr. Elhadi Yahia, Universidad Autonoma de Queretaro, for the review and revision of this topic.