

## PERSIMMON

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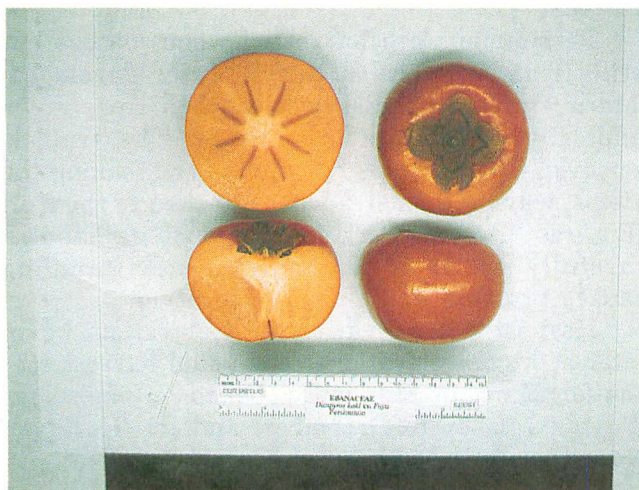


Figure 1. 'Fuyu' persimmon.

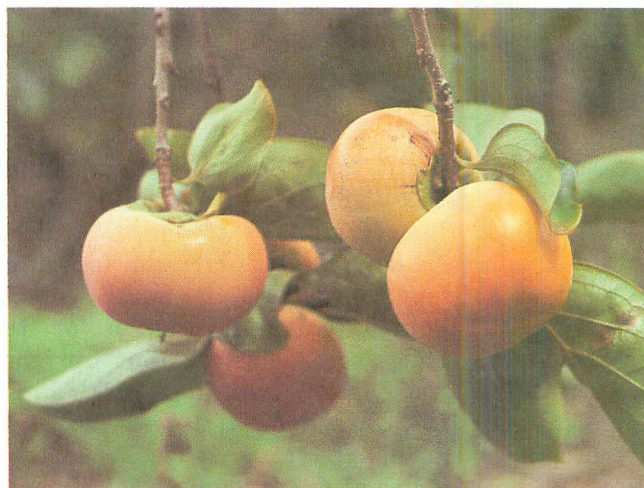


Figure 2. 'Fuyu' fruit cluster.

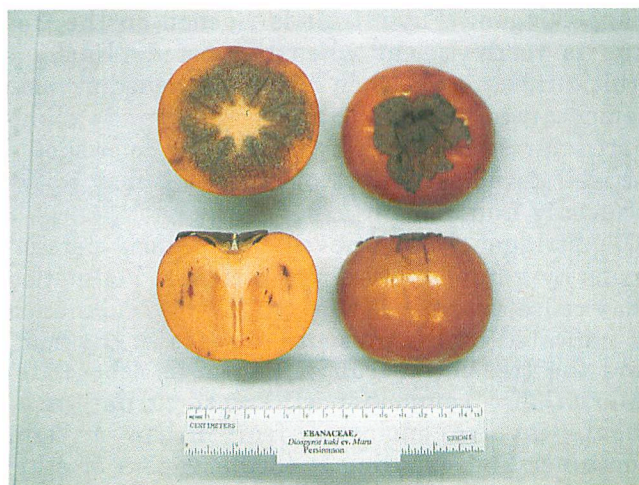


Figure 3. 'Maru' persimmon; internal discoloration, caused by curing, is normal.



Figure 4. 'Maru' fruit cluster.

5 oz to 7 oz (148–207 ml) of ethyl alcohol, sealed for three days, then removed and held at room temperature for several days until edible (Kitagawa and Glucina 1984). The liquid alcohol need not contact the fruit. With the carbon dioxide method, about 60 lb (27.2 kg) of fruit is enclosed with a 1.25-lb (0.6-kg) block of dry ice and kept sealed for two to three days. The dry ice should not contact the fruit. After curing, the flesh of 'Maru' fruits may contain brown spotting, which is a normal result of tannin breakdown (Figure 3).

Refrigeration after softening prolongs the storage life of 'Hachiya' fruit. For longer storage, persimmons may be peeled, pureed, and frozen or frozen whole in plastic bags. 'Maru' and 'Hachiya' fruits may be peeled when firm and dried; drying removes astringency.

### Propagation

*Diospyros kaki* seedlings are the preferred rootstocks for persimmon cultivars. They develop long taproots with few fibrous laterals, and rootstock cultivars have been selected that produce vigorous, uniform seedlings. Rootstocks of *D. virginiana* (American persimmon) and *D. lotus* (date plum) are known to be better for wet soils, but the former produces variable trees and excessive suckering. *D. lotus* is susceptible to crown gall and is incompatible with 'Fuyu'.

Seeds are sown in 3-in.-deep (7.6-cm) containers. When seedlings are 3 in. (7.6 cm) high, they are transplanted to deep plastic planting bags—6 × 18 in. (15.2 × 45.7 cm)—or to nursery beds. At that time, the bottom one-fourth of the taproot is pruned to encourage lateral rooting. Grafting is done during the dormant season on rootstock stems that are at least 3/8 in. (9 mm) in diameter. Whip-grafting low on the rootstock is preferred, but chip-budding is also done. Scions with two to four buds from the previous season's growth are used. After grafting, the scion should be enclosed in a plastic bag to maintain high humidity. Large plants may be bark-grafted or cleft-grafted. In Hawaii, the three cultivars commonly grown develop very few seeds, and seed for rootstocks is usually obtained from California.

### Cultural Practices

Tree spacing averages 15 ft to 20 ft (4.6–6.1 m) apart but varies with cultivar and soil fertility. Generally, wider spacing is used on deeper, more fertile soils. In Japan, trees are sometimes

planted at close spacing and thinned after five to 10 years. Care is necessary when transplanting to the field, because persimmon roots are fragile and easily damaged by drying or rough handling. Young plants are trained to a modified central-leader structure by pruning shoots during the first few seasons, forcing growth into framework branches. The aim is to develop a pyramidal shape with from three to five main limbs at about 1-ft (30-cm) intervals on the trunk, beginning at about 3 ft (91 cm) above ground level. Staking with 5-ft (1.5-m) stakes may aid in training young trees. Pruning mature plants is done during the dormant winter months (Figure 7) to remove crossover, diseased, or broken branches. Pruning is also done to remove weak, shaded branches, open the canopy to prevent self-shading, reduce excessively vigorous shoot growth, and regulate crop load.

Persimmon fruit is borne on the current season's branch growth. After three to five years, bracing may be needed to prevent the weight of the fruit from breaking branches (Figure 8). Pruning secondary branches so that bearing shoots are kept close to the main branches may help to avoid a drooping habit and reduce the need for bracing. 'Fuyu' fruit clusters are usually thinned to increase fruit size.

Irrigation to supplement rainfall is desirable at times such as after transplanting, particularly when bare-rooted stock is used; during the spring growth flush; and during summer, if weather is dry or soils are shallow.

Commercial growers in Hawaii use either 16-16-16 or 10-20-20 N-P-K fertilizer, applied in February or March when new shoots emerge. Excessive nitrogen fertilization will force vegetative growth, so moderate fertilizer applications are desirable.

### Diseases of Persimmon

Crown gall (*Agrobacterium tumefaciens*)

Anthracnose (*Colletotrichum* sp.)

Fruit drop (physiological causes, including excessive shoot growth, insufficient sunlight, and lack of pollination)

### Insect Pests of Persimmon

Mealybugs

Ants (associated with mealybugs)

Thrips

Mites

Fruit flies