

College of Agriculture & Life Sciences
Department of Horticultural Science

**GROWING ORIENTAL PERSIMMONS
 IN NORTH CAROLINA**

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The oriental persimmon, *Diospyros khaki* L., is an easy-to-grow tree which is adaptable to much of North Carolina. The tree has a compact spreading growth habit and low maintenance requirements. The ornamental beauty of its orange fruit and bright red foliage in the fall makes it an attractive plant in the home landscape. The tree is winter-hardy in eastern North Carolina, as well as the Lower Piedmont and Coastal Plain areas. In general, mature oriental persimmon trees do not tolerate temperatures below 10 °F.

Oriental persimmon trees are relatively free from serious insect and disease problems. However, there are several insect pests that should be mentioned that may be a problem in some areas. There is a persimmon trunk borer that will tunnel into the trunk of young trees near the soil line. If detected early, this insect can be removed with a sharp knife before extensive damage is caused to the tree. Another insect pest is the persimmon *Phylloxera*, which is a small insect that feeds on the persimmon leaves. Although the leaves may be deformed from the feeding insect, control measures are usually not recommended. If problems do arise, submit a sample of the foliage and insect to your local county Extension agent for identification and control measures. The primary problem the home-orchardist faces with persimmon culture is alternate year bearing. Alternate bearing is common in most varieties and is related to factors such as crop load (too

heavy or too light), tree age or vigor, soil moisture, and pollination requirements. The varieties listed in this leaflet do not require cross-pollination to ensure a crop.

There are two major types of persimmon fruit based on fruit astringency. One group, the non-astringent types, may be eaten while the fruit is still mature and firm. Fruit of the other group must be soft before astringency is lost. Non-astringent varieties should be planted for home use although astringent varieties can be grown in North Carolina. Seeds are generally not produced in the non-astringent fruit as in the native persimmons, but seeds may be produced in some years in some varieties.

Cultural Practices

Site Selection

Persimmons generally bloom late enough in the spring (mid-April) to avoid spring frosts. The trees grow well on a wide range of soils, although they grow best on loamy, well-drained soils. As with other fruit trees, a soil pH of 6.0 to 6.5 is optimum for tree growth.

Persimmon trees will withstand drought, but fruit size and yield are reduced. Also, adequate moisture is required to produce sufficient shoot growth and formation of flower buds for next year's crop. During extended dry periods, irrigation should be provided to the trees on a weekly basis.

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Following is a brief description of persimmon varieties suitable for culture in North Carolina.

Table 1. Fruit and tree characteristics of selected oriental persimmon varieties.

Variety	Fruit color	Fruit size	Fruit shape	Ripening season	Astringent?
Fuyu	red	medium to large	flat	October to November	no
Jiro	orange-red	medium to large	flat	September to October	no
Hanagoshō	orange	medium to large	flat-conic	September to October	no
Korean	orange	medium	flat	September to October	yes
Hachiya	orange-red	medium to large	oblong-conic	September to October	yes

NOTE: Partial information compiled from E. P. Miller, 1984.

Planting

Prior to planting, be sure to take a soil sample for pH and nutrient recommendations. If lime is required to raise the pH, apply it in the late fall or early spring and incorporation to a depth of 12 to 18 inches is required.

Also prior to planting, make sure that varieties adapted for your area are selected. Rootstock selection is important too. Oriental persimmons are generally grafted onto seedlings of the American persimmon, *Diospyros virginiana*. The main advantage to using American seedling rootstock is that these seedlings tolerate excessive moisture and drought quite well and are adapted to the climate of North Carolina; however they are prone to suckering which needs to be pruned out annually. There is a lack of uniformity of tree vigor and size associated with *D. virginiana* rootstocks.

Care must be taken when transplanting a persimmon tree because of its fragile root system. In general, trees should be planted at the same depth (or no more than 1 inch below) they grew in the nursery. The root system must never be subjected to freezing or drying conditions. To ensure good root growth after planting, water the trees immediately after setting them out and on a weekly basis thereafter if they receive no rainfall.

Like all fruit trees, persimmons require full sun to assure good tree and fruit growth, as well as fruit bud development. Trees should be spaced 15 to 16 ft apart.

Fertilizer Recommendations

Persimmon trees respond to nitrogen applications, especially in years of a heavy crop load. A rule of thumb is that 1 oz of actual nitrogen per year of tree age should be applied, although this should be adjusted according to the native fertility of the soil and the tree's general vigor. For example, a tree grown in a clay loam will require less applied nitrogen than a tree grown in a sandy soil. As a note of caution, excessive nitrogen can cause high amounts of pre-mature fruit drop. Occasionally, other nutrients such as phosphorus, potassium or zinc may need to be supplied. A soil test will be necessary to determine exact recommendations. Contact your local county Extension agent for detailed instructions concerning soil testing.

Pruning

Persimmon trees are generally trained to a modified central leader system. Develop 3 to 5 well-spaced branches (approximately 8 to 12 inches apart) along the trunk. The first limb should be 3 to 4 ft from the ground. Then leave an area of approximately 2 ft on the leader without branches and allow 3 to 4 more branches and then cut off the leader above the highest branch.

Pruning mature trees should be kept at a minimum. Remove crowded or weak branches, diseased or broken limbs, or excessively vigorous growth such as watersprouts or root suckers. Pruning is required to renew fruiting wood since flowers are borne on current season's wood. New growth can be stimulated with moderate pruning cuts every 1 to 2 years. Pruning will also give a strong framework for the tree to bear a heavy crop load. This is important because persimmon wood is brittle and breaks easily with heavy crops.

Harvesting, Storing and Ripening

Fruit should not be picked until full color has been attained. The fruit bruises easily, so care should be taken when picking. After harvest, the fruit may be stored for several weeks in a refrigerator. Fruit can also be frozen and stored for longer periods. Prior to freezing, the fruit can be peeled, pureed, and put into tightly sealed plastic bags or containers. Oriental persimmons can also be frozen whole, then thawed and processed as needed. The freezing process does remove some astringency, so the fruit do not need to be fully softened prior to freezing for the astringent varieties. Simply freeze the fruit until solid, and remove the fruit when desired.

The softening and ripening process can also be accelerated by placing firm, ripe (fully colored) persimmons in a

loosely closed plastic bag with an apple or banana. Apples and bananas produce a gas, ethylene, which promotes fruit softening and ripening. Fruit can also be placed in a sealed bucket with a 2-inch x 2-inch piece of dry ice for 24 hrs and then opened and resealed with another piece of dry ice. The carbon dioxide from the dry ice will remove the astringency without softening the fruit.

Utilization

Persimmon fruit are delicious "as is" fresh, or they can be used in a variety of baked goods such as puddings, breads, and cookies. The non-astringent types, such as 'Fuyu' and 'Jiro', may be consumed when the fruit have fully colored. The non-astringent fruit can be eaten while still firm. The flavor and texture are quite pleasant. However, astringent varieties such as 'Hachiya' must be softened completely before use and are preferable for use in baked goods.

For Further Reading

- Miller, E. P. 1984. *Oriental persimmons (Diospyros khaki L.) in Florida*. Proc. Fla. State Hort. Sci. 97:340-344.
- Litagawa, H. and P. G. Glucina. 1984. *Persimmon Culture in New Zealand*. Science Information Publishing Centre, DSIR, New Zealand, 73 pp.