

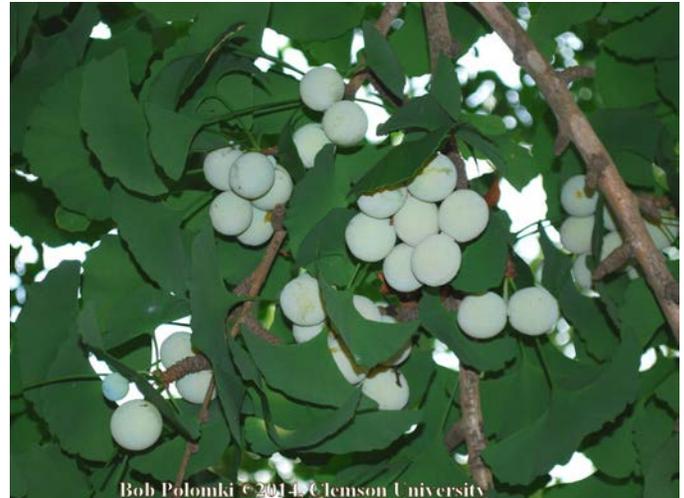
Ginkgo or Maidenhair Tree

Ginkgo biloba, or maidenhair tree, is an ancient “living fossil” that is considered one of the oldest plants on earth. Based on fossil evidence, it has remained essentially unchanged since its debut 180 million years ago during the lower Jurassic period. For centuries ginkgo has been cultivated in China, Japan and Korea, where trees exceed 100 feet in height and live up to 1,000 years.

Ginkgo arrived in North America in 1784 (Philadelphia, PA) via England. In 1841 nurseryman and horticulturist Andrew Jackson Downing promoted ginkgo’s ornamental merits and importance as a landscape tree:

“As the foliage is of that kind which must be viewed nearby, to understand its peculiarity, and as the form and outline of the tree are pleasing, and harmonizes well with buildings, we would recommend that it be planted near the house where its unique character can be readily seen and appreciated.”

Ginkgo is cold hardy in USDA zones 4 to 8b. It is a large, deciduous shade tree (although dwarf cultivars exist), and is somewhat slow-growing. Although closely related to conifers, it has no resemblance to needle-leaved species. Ginkgo possesses 2- to 3-inch long and wide, emerald-green, fan-shaped leaves with rounded lobes (hence the name “*biloba*”). They resemble the leaflets of maidenhair fern (*Adiantum* spp.), which give it its common name. In the fall the leaves turn brilliant golden yellow and then all at once are shed to create a golden carpet beneath the tree.



Distinctive fan-shaped leaves of *Ginkgo biloba*. Note the fruit on this female tree.

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Its “cones” are 1- to 2-inch long, orange or yellow plum-like fruits with edible fleshy seeds. Only female trees bear (pistillate) flowers that give rise to attractive “fruits”, technically ovules, which ripen to produce fleshy-coated seeds in the fall. Eventually they also become malodorous and messy when they are shed from the tree and decompose. Male ginkgo trees produce staminate flowers, and male cultivars tend to be more numerous than females because of their absence of fruit.

Mature Height/Spread

Young ginkgo trees tend to look gangly and stark with irregularly shaped, open canopies. However, they become more picturesque with age as they grow 50 to 80 feet high and 30 to 40 feet wide and develop full, round to pyramidal crowns.

Growth Rate

Ginkgo grows slowly in its youth, but more moderately as it matures in full sun to partial shade. Supplemental watering during the summer months during dry spells and periodic fertilization in mid-spring and/or early fall will encourage growth. For more information on fertilizing and irrigating trees, refer to [HGIC 1000, *Fertilizing Tree & Shrubs*](#) and [HGIC 1056, *Watering Shrubs & Trees*](#).



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Ginkgo biloba (female) on the Clemson Univ. campus.
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Ornamental Features

The unusual, emerald fan-shaped leaves contribute to ginkgo's allure in the landscape. When these leaves turn vibrant yellow in fall—one of the earliest to turn color in the fall—you can appreciate an extended colorful display that ends at one time when nearly all of the leaves are shed at once, which makes cleanup a one-time chore.

Dormant, mature ginkgo trees showcase an attractive winter silhouette with light gray furrowed bark and prickly-looking branches that bear spurs along their length. These shortened shoots bear male or female flowers and offer textural winter interest.



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Brilliant, golden fall color of *Ginkgo biloba*.

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Karen Russ, ©2014 HGIC, Clemson Extension

The shortened shoots called spurs support male or female flowers and offer winter interest.

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Landscape Use

Ginkgo combines urban toughness with beauty. They are widely planted along streets and in parking lots, parks and golf courses. For residential landscapes, consider smaller stature ginkgo cultivars to serve as specimen or accent trees (see Cultivars section).

Ginkgo is not difficult to transplant, but fall and winter planting favors establishment. Choose a well-drained location in full sun to partial shade.

Once established, ginkgo exhibits moderate heat and drought tolerance. For more information on planting trees, refer to [HGIC 1001, *Planting Trees Correctly*](#).

Young trees require structural or formative pruning by cutting back any wayward branches and any competing vertical limbs to maintain a central leader. Occasionally the understock of a grafted cultivar will produce suckers that have to be removed. After its young formative years, mature trees require little pruning except to remove dead, broken, or weak limbs. For more information on pruning, refer to [HGIC 1003, *Pruning Trees*](#).

Problems

Ginkgo is relatively free of pests, and tolerant of salt and air pollution. Ginkgo has proven to be an outstanding landscape and street tree, and with proper siting, planting and pruning, it can be expected to prosper.

As a street tree, there are reports of abiotic leaf scorch due to high heat and drought stress that have been reported. Ginkgo is also susceptible to bacterial leaf scorch caused by the bacterium *Xylella fastidiosa*, which often infects stressed trees. This bacterium is vectored by leafhopper and treehopper insects. The symptoms of both types of leaf scorch look similar and often require a laboratory analysis to determine the causal factor.

Abiotic leaf scorch can generally be relieved by proper irrigation. However, bacterial leaf scorch is incurable and can lead to decline and often the death of infected trees. Because ginkgo is susceptible to bacterial leaf scorch disease, it is not recommended as a replacement tree in situations where other trees have succumbed to this disease.

As stated earlier, female trees can become a nuisance when they reach reproductive maturity (20 years or more) and bear fruit. Their unpleasant smelling and messy fruits are shed from the tree in the fall months and decompose. To prevent this problem, it is best to select male cultivars rather than seed-propagated trees which will not reveal their gender until they have become well-established in your landscape.



The ginkgo kernel is considered a delicacy in China & Japan. Bob Polomski, ©2014 HGIC, Clemson Extension.

Cultivars

A large number of ginkgo cultivars—most often males—have been introduced to the marketplace. They range in size from dwarf to large trees, narrow and upright to broad and wide-spreading forms. Other cultivars have variegated leaves or a weeping, pendulous habit. Cultivars that have been selected from witch's brooms ('Jehoshaphat', 'Munchkin', and 'Troll') have become collector's items and conversation pieces because of their bizarre-looking leaves and bushy compact habit. The following ginkgo cultivars comprise a short list of desirable trees that merit planting in South Carolina landscapes.

- 'Autumn Gold'— A male selected for bright golden yellow fall color; matures to a respective height and spread of 50 feet and 30 feet, and develops a broadly conical, symmetrical crown.
- 'Chase Manhattan' ('Bon's Dwarf') – A shrubby, very slow-growing dwarf cultivar with smaller leaves than the species and develops a compact growth habit with an expected height of 6 feet at maturity. Bright yellow fall color.
- 'Fairmount' – A male clone propagated in 1876 from a male tree planted during the Centennial Exposition in Philadelphia, Penn., at Horticultural Hall in Fairmount Park. It matures into a dense, columnar

crowned tree, 50 to 75 feet high by 10 to 15 feet wide.

- Gold Colonnade® ('JFS-UGA2') – This upright cultivar with a narrow oval canopy is expected to grow 45 feet tall by 25 feet wide with bright gold fall color. A Univ. of Georgia selection.
- 'Golden Globe' – A reportedly a fast-grower, this male tends to produce a full dense crown when young, quite unlike typical immature ginkgo, and eventually develops a broad round crown with bright yellow fall color.
- 'King of Dongting Mountain' ('King of Dongtingshan Mountain') – A female cultivar that produces the largest seeds, which are considered a culinary delicacy in Asian cultures. A 500 year old tree measured 52 feet high.
- 'Magyar' – A male columnar form that matures at 60 feet high and half as wide with uniform, symmetrical branching habit and a narrow, upright pyramidal form.
- 'Majestic Butterfly' – A variegated ginkgo having green leaves streaked with yellow. It maintains the variegation over the entire growing season. Site this cultivar in afternoon shade. Expect a mature height of 10 feet. Discovered as a sport on *G. biloba* 'Jade Butterflies'.
- Princeton Sentry® ('PNI 2720') – An upright, narrow growing male with an expected height of 60 feet and a spread of 25 feet that sports a dense crown.
- 'Shangri-la' – A fast-growing male that forms a compact, pyramidal shape with dense canopy and smaller height than the species. Reaches a mature height of 40 feet.

References & Further Reading

1. Arnold, M. A. 2008. *Landscape Plants for Texas and Environs*. 3rd ed. Stipes Pub., Champaign, IL.
2. Cothran, J. R. 2003. *Gardens and Historic Plants of the Antebellum South*. Univ. of SC Press, Columbia, SC.
3. Cox, T. and J. M. Ruter. 2013. *Landscaping with Conifers and Ginkgo for the Southeast*. University Press of Florida, Gainesville, FL.

4. Del Tredici, P. 1981. The Ginkgo in America. *Arnoldia* 51(2):150-161.



Princeton Sentry® ginkgo in winter. Karen Russ, ©2014 HGIC, Clemson Extension

5. Del Tredici, P. 1991. Ginkgo and People - a Thousand Years of Interaction. *Arnoldia* 51(2): 2-15.
6. Del Tredici, P. 2000. The Evolution, ecology, and cultivation of *Ginkgo biloba*, pp. 7-23. In: T. A. Van Beek (ed.). *Ginkgo biloba*. Edition 1. Harwood Academic Publishers, Amsterdam.
7. Dirr, M. A. 2009. *Manual of Woody Landscape Plants*. 6th ed. Stipes Pub., Champaign, IL.
8. Downing, A. J. 1841. *A Treatise on the Theory and Practice of Landscape Gardening*. Wiley & Putnam, NY.
9. Gilman, E. 1997. *Trees for Urban and Suburban Landscapes*. Delmar Pub., Albany, NY..
10. Hartman, John. 2007. Bacterial leaf scorch. Plant Pathology Fact Sheet: PPFs-OR-W-12, UK Coop. Ext. Serv., Univ. of KY.
11. Head, B. H. 2006. *Hutchinson's Tree Book: A Reference Guide to Popular Landscape Trees*. Hutchinson Pub. Corp., Taylors, SC.
12. Santamour, Jr., F. S., S. He, and A. J. McArdle. 1983. Checklist of cultivated *Ginkgo*. *J. Arboric.* 9(3):88-92.

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