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Sweet Gum (spp.)

Leaf Color Green
Fall Color Orange, purple, red and yellow
This plant has attractive foliage and attractive fall colors.

Leaf Identification
Type: Simple
Arrangement: Alternate
Venations: Palmate
Margins: Serrate
Shapes: Star-shaped
Length: 4in./10cm to 8in./20cm

Fruit Color Brown

The fruit is dry and round.

Environment
This plant tolerates some drought, occasional wetness and some salt.
This plant will grow in dry to occasionally wet soil.
Suitable soil is well-drained/loamy, sandy or clay.
The pH preference is an acidic to slightly alkaline (less than 6.8 to 7.7) soil.

Landscape Uses
- Street tree
- Specimen

Attributes and Features
- Naturalizing
- Inconspicuous blooms
- Persistent fruit
- Attractive fruit
- Fruit is edible by birds
- Fruit can be a litter problem

Liquidambar styraciflua

Sweet Gum, American Sweet Gum, Red Sweet Gum

Hamamelidaceae (Witch Hazel)

Type Tree, woody plant

Hardy range 5B to 9B
Height 50' to 75' / 15.20m to 22.80m
Spread 35' to 50' / 10.60m to 15.20m
Growth rate Average
Form Oval and pyramidal
Exposure Partial shade or partial sun to full sun
Persistence Deciduous

Bloom Color Green and yellow
Bloom Time Spring

Native Habitat
Adaptable to many different soil types in southeastern US to central Florida. Best growth is on moist alluvial soil with many fine particles but can be found on drier sites as a pioneer species and at the edges of swamps and along river bottoms. Not on permanently flooded sites.

Native to the following North American locales: Alabama, Arkansas, Connecticut, District of Columbia, Delaware, Florida, Georgia, Illinois, Kentucky, Louisiana, Maryland, Missouri, Mississippi, Mexico, North Carolina, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia

Crown, Branch and Twig
This plant is symmetrical with a coarse texture and has a moderately dense crown.
This plant's bark is not showy.
Branches or twigs are of medium thickness.

This plant typically grows with one trunk.
Little pruning is required.
This plant has low flammability.National champion is 136 x 66 feet in North Carolina.

Culture Notes

Although it grows at a moderate pace, Sweetgum is rarely attacked by pests (except for a trunk canker), and tolerates wet soils, but chlorosis is often seen in alkaline soils. Trees grow well in deep soil, poorly in shallow, droughty soil.

Sweet Gum is difficult to transplant and is often planted from containers or transplanted in the spring when young. It is native to bottomlands and moist soils and tolerates only some (if any) drought. Existing trees often die-back near the top of the crown, apparently due to extreme sensitivity to construction injury to the root system, or drought injury. The tree leafs out early in the spring and is occasionally damaged by frost.

Be careful when locating Sweetgum as a street tree since its large, aggressive roots may lift curbs and sidewalks, especially if soil is compacted. Plant trees 8 to 10 feet or more from curbs and walks. Some communities have large numbers of Sweetgum planted as street trees, especially in California. They perform well there in that role. Much of the root system is shallow (particularly in its native, moist habitat), but there are deep vertical roots directly beneath the trunk in well-drained and in some other soils. Trees tend to have a low failure rate meaning that branches break from these trees less often than from some other trees.

The cultivar `Rotundiloba' is fruitless and might be a good choice for urban landscapes where the dropping fruit of the species would be a nuisance. 'Emerald Sentinal' is a new cultivar maturing at about 30 feet with a narrow canopy, perhaps only 12 feet wide. The tree should be planted only in soil with a pH of 7 or less. The seeds of the species provide good food for wildlife including cardinals, morning doves, and blue jays. Seeds readily germinate in shrub and groundcover beds, requiring their removal to maintain a neat landscape appearance. Tree thickets form in this manner, creating dense monocultures of Sweetgum.

Wood weighs about 52 pounds per cubic foot. Allergy from pollen is mild for many, more severe for others.

Tree establishment specifications

Choose good quality trees for planting. The most common cause of young tree failure is planting too deep. In most instances, the point where the top-most root in the root ball originates from the trunk (referred to as the root flare zone or root collar) should be located just above the soil surface. You may have to dig into the root ball to find the root flare. If there is nursery soil over this area, scrape it off. Never place ANY soil over the root ball. The planting hole should be at least twice the width of the root ball, preferably wider because roots grow best in loose soil. In all but exceptional circumstances where the soil is very poor, extensive research clearly shows that there is no need to incorporate any amendments into the backfill soil. Simply use the loosened soil that came out of the planting hole. Simply planting with the topmost portion of the root ball slightly higher than the surrounding soil might still install the tree too deep - be sure to locate the root flare.

Weed suppression during establishment is essential. Apply a 3-inch thick layer of mulch to at least a six-foot diameter circle around the tree. This area should be at least two feet in diameter for each inch of tree trunk diameter and maintained during the establishment period. Apply a thinner layer of mulch directly over the root ball but keep it at least 10 inches from the trunk. This allows rainwater, irrigation and air to easily enter the root ball and keeps the trunk dry. Placing mulch against the trunk and applying too thick a layer above the root ball can kill the plant by oxygen starvation, death of bark, stem and root diseases, prevention of hardening off for winter, vole and other rodent damage to the trunk, keeping soil too wet, or repelling water.

Regular irrigation after planting encourages rapid root growth that is essential for tree establishment. Trees provided with regular irrigation through the first growing season after transplanting require about 3 months (hardiness zones 9-11), 6 months (hardiness zones 7-8), or one year or more (hardiness zones 2-6) per inch of trunk diameter to fully establish roots in the landscape soil. Trees in desert climates may take longer to establish. Trees that are under-irrigated during this establishment period (and most trees are) often require additional time to establish because roots grow more slowly. Be prepared to irrigate through the entire establishment period, especially during periods of drought.

Irrigation also helps maintain and encourage the desirable dominant leader in the tree canopy on large-maturing trees. Instead of a dominant leader, trees that are under-irrigated during the establishment period often develop undesirable, low, co-dominant stems and double leaders that can split from the tree later.

Unlike established plants, which do best with deep, infrequent irrigation, research clearly shows that recently transplanted trees and shrubs establish quickest with light, frequent irrigation. For trees planted in spring or summer, provide one (cooler hardiness zones) to three irrigations (warmer hardiness zones) each week during the first few months after planting. Daily irrigation in the warmest hardiness zones provides the quickest establishment. Following the initial few months of frequent irrigation, provide weekly irrigation until plants are fully established. With every irrigation, apply one (cool climates) to two (warm climates) gallons of water per inch trunk diameter (e.g. 2 to 4 gallons for a 2-inch tree) over the root ball only. In most landscapes that receive more than 30 inches of rain or irrigation annually, if the mulch area is maintained weed-free, irrigation does not need to be applied

outside of the root ball. Never add water if the root ball is saturated.

In cooler hardiness zones, in all but the driest years, irrigation of spring- and summer-planted trees usually can be discontinued once fall color has begun. Irrigation of fall planted trees, however, should be continued until foliage has dropped from the deciduous trees in the region. In warmer climates, irrigate fall-and winter-planted trees as described for the spring- and summer-planted trees.

In drier, desert climates there is benefit to be gained from applying additional irrigation outside of the root ball area. This is best done by making a large diameter berm four to six inches high, then filling it with water so it percolates into the soil. For the first two years, irrigate twice each week through the spring, once per week in summer provided monsoons arrive, and twice each week again in fall if it remains warm. Taper off watering to once or twice each month in winter and resume twice weekly next spring. For years three to five, water twice per month in spring, summer, and fall and once or twice per month in winter. During years five through seven, water once every three weeks in warm weather and once every six weeks in winter. After this, the drought-tolerant desert trees should be able to survive on natural rainfall.

Trees with good, strong structure need no pruning at planting, except to remove broken twigs. Do not remove branches to compensate for root loss - research has shown that this can be detrimental to establishment.

<<spring transplant best>>

Pests, Diseases and Damaging Agents

Pests: Bagworm, fall webworm, leaf miner, cottony-cushion scale, and tent caterpillars. Ambrosia beetle can attack even healthy trees; they tend to attack as trees emerge from dormancy. Calico scale can be a big problem.

Diseases: Sweetgum may be attacked by trunk canker diseases which can be quite serious. There is no cure for this. Considered a minor host for this disease, bacterial leaf scorch causes leaf scorch, premature browning, and gradual decline of trees. There is often a yellow line or hallow separating the scorched tissue from green tissue. Infection probably spreads by root grafts and certainly by leafhoppers, spittlebugs and sharpshooters. Pruning tools are not likely spread the disease. Neither fertilization nor pruning have any effect on treatment of the disease. There may be chemical treatment that can reduce symptoms but nothing will cure an infected tree. Bacterial leaf scorch can kill trees in several years.

This plant is sensitive to damage from ozone air pollution. Damage can occur in urban or rural areas because ozone can travel long distances away from where it is formed. Typical symptoms on deciduous trees are a flecking or stippling only on the upper side of the foliage between large veins. The small spots or flecks are white, tan or orange-red. Spots or flecks from one-eighth to one-quarter inch long appear on needles of sensitive conifers. Yellow bands that girdle the needle may form, eventually causing the tips of the needles to die and/or needles to drop from the plant. If you suspect ozone is causing damage on this plant, locate White Pines (*Pinus strobus*) in the area to see if they are damaged. White Pines are very sensitive to ozone damage and can serve as indicators of the presence of ozone in concentrations high enough to cause plant damage.

Special Notes

This plant could invade natural areas.
This plant has aggressive roots.


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