

Liquidambar styraciflua 'Moraine': 'Moraine' Sweetgum¹

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Introduction

This cultivar of Sweetgum grows in a narrow pyramid to a height of 60 feet when young and may eventually spread to 40 feet as it grows older. It is the most cold hardy cultivar known today. The beautifully glossy, star-shaped leaves turn bright red, purple, yellow or orange in the fall (USDA hardiness zones 5 and 7) and early winter (USDA hardiness zones 8 and 9). On some trees, particularly in the northern



Figure 1. Young *Liquidambar styraciflua* 'Moraine': 'Moraine' Sweetgum
Credits: Ed Gilman

part of its range, branches are covered with characteristic corky projections. The trunk is normally straight and does not divide into double or multiple leaders and side branches are small in diameter on young trees, creating a pyramidal form. This gives way to a more open canopy in middle age as several branches become dominant and grow in diameter. The bark becomes deeply ridged at about 25-years-old. Sweetgum makes a nice conical park, campus or residential shade tree for large properties when it is young, developing a more oval canopy as it grows older.

General Information

Scientific name: *Liquidambar styraciflua*

Pronunciation: lick-wid-AM-bar sty-rass-ih-FLOO-uh

Common name(s): 'Moraine' Sweetgum

Family: *Hamamelidaceae*

USDA hardiness zones: 5A through 8B (Fig. 2)

Origin: native to North America

Invasive potential: weedy native

Uses: tree lawn > 6 ft wide; shade; street without sidewalk; specimen; reclamation; highway median; parking lot island > 200 sq ft

Availability: somewhat available, may have to go out of the region to find the tree

1. This document is one of a series of the Environmental Horticulture Department, UF/IFAS Extension. Original publication date November 1993. Revised December 2006. Reviewed February 2014. Visit the EDIS website at <http://edis.ifas.ufl.edu>.

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Figure 2. Range

Description

Height: 40 to 60 feet
Spread: 35 to 40 feet
Crown uniformity: symmetrical
Crown shape: pyramidal, oval
Crown density: dense
Growth rate: moderate
Texture: coarse

Foliage

Leaf arrangement: alternate (Fig. 3)
Leaf type: simple
Leaf margin: serrate
Leaf shape: star-shaped
Leaf venation: palmate
Leaf type and persistence: deciduous
Leaf blade length: 4 to 8 inches
Leaf color: green
Fall color: red, yellow
Fall characteristic: showy



Figure 3. Foliage

Flower

Flower color: yellow, green
Flower characteristics: not showy

Fruit

Fruit shape: round
Fruit length: 1 to 3 inches
Fruit covering: dry or hard
Fruit color: brown
Fruit characteristics: attracts birds; showy; fruit/leaves a litter problem

Trunk and Branches

Trunk/bark/branches: branches droop; not showy; typically one trunk; thorns
Pruning requirement: little required
Breakage: resistant
Current year twig color: reddish, brown
Current year twig thickness: medium
Wood specific gravity: 0.52

Culture

Light requirement: full sun, partial sun or partial shade
Soil tolerances: sand; loam; clay; acidic; slightly alkaline; well-drained; extended flooding
Drought tolerance: moderate
Aerosol salt tolerance: moderate

Other

Roots: can form large surface roots
Winter interest: yes
Outstanding tree: no
Ozone sensitivity: unknown
Verticillium wilt susceptibility: resistant
Pest resistance: resistant to pests/diseases

Use and Management

Be careful when locating Sweetgum as a street tree since its large, aggressive roots may lift curbs and sidewalks. Plant trees 8 to 10 feet or more from curbs. Some communities have large numbers of Sweetgum planted as street trees. 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. The fruit may be a litter nuisance to some in the fall, but this is usually only noticeable on hard surfaces, such as roads, patios, and sidewalks, where people could slip and fall on the fruit. The cultivar 'Rotundiloba' is fruitless. The tree should be planted only in soil with a pH of 7 or less. The seeds provide food for wildlife and will often readily germinate in shrub and groundcover beds, requiring their removal to maintain a neat landscape appearance.

Although it grows at a moderate pace, Sweetgum is rarely attacked by pests, and tolerates wet soils, but chlorosis is often seen in alkaline soils. Trees grow well in deep soil, poorly in shallow, droughty soil. It is difficult to transplant and should be planted from containers or transplanted in the spring when young since it develops deep roots on well-drained soil. 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 sometimes damaged by frost.

Cultivars have been selected for their fall color, leaf shape, or growth habit: 'Burgundy' - beautiful, glossy green leaves, burgundy red fall color, holds leaves late into fall, narrow pyramid, less cold hardy, more adapted to the southern part of its range; 'Festival' - narrow upright growth habit, peach-colored fall foliage, less cold hardy, more adapted to the southern part of the range; 'Moraine' is reputed to be the most cold hardy; 'Palo Alto' - pyramidal, symmetrical growth, bright orange fall color; 'Rotundiloba' - round leaf tips, no fruit production, narrow pyramidal form. *Liquidambar formosana* has a broader spreading crown.

Pests

Bagworm makes sacks by webbing together pieces of leaves. The insects live in the sacks while they feed. Small numbers of insects may be picked off by hand.

Fall webworm webs over portions of large branches or may completely cover small branches. The insects feed on leaves inside the nest. If practical, nests can be pruned out while small and when the insects are inside. A few nests in large trees are not serious.

Leaf miner causes brown blotches on leaves. If injury is caused by leaf miner the browned upper and lower leaf surfaces will be completely separate when the leaf is torn in two.

Cottony-cushion scale, Sweetgum scale, and walnut scale can infest the branches. Use horticultural oil for some control.

Tent caterpillars make nests to live in but leave the nests to feed. Prune out nests at the tips of small branches. Do not burn the nest while it is still in the tree because you will injure the tree.

Diseases

Sweetgum may be attacked by canker diseases. These diseases cause sunken areas on the trunk and some cause profuse "bleeding". Infected bark and sapwood will be brown and dead. There is no chemical control for canker diseases. Severely infected trees will die. Prune cankers out of lightly infected trees. Maintain tree health by watering and fertilizing.

Leaf spots of various types may attack Sweetgum, causing premature defoliation, but are not serious. Rake up and destroy infected leaves to help control if there are no adjacent Sweetgum to add inoculum.