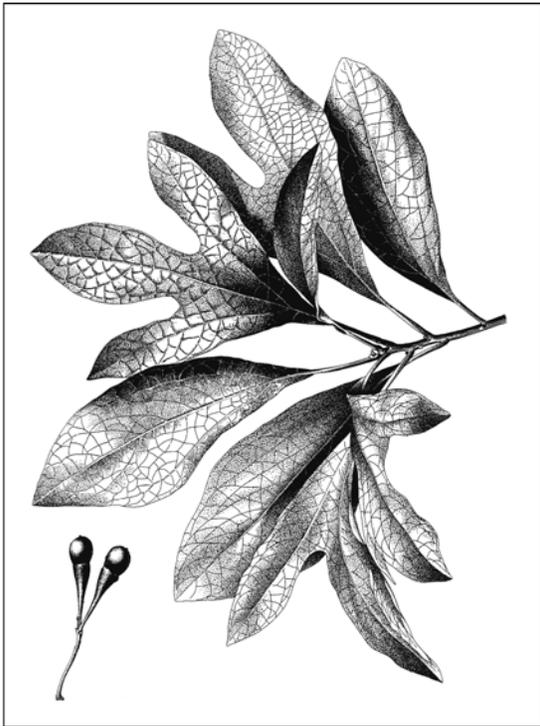


***Sassafras albidum* (Nutt.) Nees**
LAURACEAE

sassafras

Synonyms: *Sassafras sassafras* (L.) Karst.
Laurus albidus Nutt.
Laurus sassafras L.
Sassafras officinale Nees & Eberm.
Sassafras variifolium (Salsb.) Kuntze
Sassafras albidum (Nutt.) Nees var. *molle* (Raf.) Fern.



General Description.—Sassafras is also known as white sassafras, common sassafras, ague tree, cinnamon wood, saloop, smelling stick, gumbo file, and mitten tree. It is a shrub or small tree up to 15 m in height and 35 cm in diameter. The species grows as a medium to large shrub in Florida, in the northern part of its range, and on sand or poor, rocky sites. It may have single or multiple stems. Older stems have deeply furrowed, red-brown bark. Slender, brittle, twigs with thick, white, mucilaginous pith are covered by green bark. The species depends primarily on a shallow, lateral root system. Long lateral roots develop suckers that in turn develop their own root system. The alternate dark green leaves occur in three forms: ovate or elliptical leaves, leaves with one side lobe (“mitten”), and trilobate leaves with the center lobe being symmetrical and somewhat

larger than the side lobes. Leaves are 8 to 15 cm long. Small yellowish-green flowers grow in axillary racemes. The fruit is a fleshy, oblong, dark blue or black drupe partially set in a red or orange thickened base (pedicel and calyx). The seeds are oblong, pointed, and brown (Griggs 1990, Sargent 1923, Vines 1982).

Range.—Sassafras is native to all of the States east of a line running between Lake Superior and western Texas, and in extreme southern Ontario (Natural Resources Conservation Service 2003, Sullivan 1993). It is planted as an ornamental in at least the United Kingdom, Germany, and Spain (Oberle 2003, Plants for a Future 2003, Sanchez de Lorenzo 2003). There are no reports of it naturalizing outside its native range. The genus contains two other species, natives of China and Taiwan (Center for Wood Anatomy Research 2003)

Ecology.—Sassafras is intolerant of shade, and reproduction from seed is rare under closed-canopy forest. However, it is a pioneer in old fields and an invader of disturbed and early secondary forests. It grows as scattered individual plants or as dense thickets, often of sucker origin. Removal of the forest overstory by almost any means (i.e. gypsy moth, logging, fire) results in increased density of the species. On the other hand, as competition increases and forest canopies close, sassafras decreases in importance. Although uncommon, it persists in old-growth stands. The species grows from a few meters above sea level to 1,220 m (Sullivan 1993). Mean annual precipitation ranges from 760 to 1400 mm/year and the average frost-free period ranges from 160 to 300 days. Average January temperatures range from -7 to 13 °C and average July temperatures range from 21 to 27 °C. (Griggs 1990). Sassafras grows in a wide variety of soil types and grows best on well-drained sandy loams with a pH between 6.0 and 7.0 (Griggs 1990). Seedlings and

saplings are easily top-killed by fire but readily sprout. Thick-barked trees are injured by fire (Sullivan 1993). Sassafras is sometimes attacked by leaf blight caused by *Actinopelte dryina*, by leaf spots caused by *Mycosphaerella sassafras*, and by a *Nectria* canker. A number of insects also attack the species (Griggs 1990).

Reproduction.—Flowers open in early spring with the first leaves. Male and female flowers usually occur on different plants (Sargent 1923). Fruits mature in August or September. Seed production begins when plants are about 10 years old (Griggs 1990). There are about 12,800 seeds/kg (Bonner and Maisenhelder 1974) or according to Griggs (1990), 8,800 to 13,200 seeds/kg. About 35 percent of the seeds are sound. Birds are the principal dispersers of seeds, with gravity, water, and mammals playing minor roles. Germination, which occurs in the spring, is hypogeal. Seeds may remain viable in the soil seed bank for up to 6 years (Griggs 1990). Sassafras sprouts prolifically from stumps and suckers from lateral roots.

Growth and Management.—Growth of sassafras is moderately fast. Sprouts can reach 1.2 m in the first year and 4.5 m in 4 years (Floridata 2003). Rare individual trees reaching the forest canopy may live as long as 300 years (TreeGuide 2003). Fruits are ripe and can be harvested when they turn from green to dark blue and can be picked by hand or by flailing them from the trees or shrubs onto a tarp. The seeds can be cleaned of fruit tissue by rubbing against hardware cloth and washing away the pulp. One kg of fruits will yield about 310 g of seeds. Seeds should be placed in sealed containers and stored at 2 to 5 °C. Before planting, seeds should be moistened and held at the above temperatures for 120 days. Drilling in nursery beds in 20- to 30-cm-wide rows and covering with 6 to 12 mm of soil is recommended (Bonner and Maisenhelder 1974). Sassafras can also be reproduced from root cuttings but not from stem cuttings (Griggs 1990). Wildlings are difficult to transplant. Sassafras shrubs and trees can be killed by injecting 2,4-D, picloram, or glyphosate (Sullivan 1993).

Benefits.—Sassafras adds beauty in both summer and winter to forest lands where it grows. It has been used to help restore depleted soils of old fields and is considered superior to black locust (*Robinia pseudoacacia* L.) and pines in this application (Griggs 1990). Sassafras is browsed year-round by white tailed deer. The plants are

also utilized to some extent by woodchucks, rabbits, beavers, and bears. Many species of birds and some small mammals consume the fruits. Crude protein ranges from 21.0 percent (leaves in April) to 6.1 percent (twigs in January). The fruits have a high lipid and energy value (Sullivan 1993). Sassafras makes an attractive ornamental small tree and is widely, although not heavily used. The fall foliage colors of yellow, orange, and red are particularly beautiful. Sassafras heartwood is pale brown to orange brown; sapwood is yellowish-white. The wood is ring-porous, coarse-but straight-grained, brittle, soft, and has a spicy aromatic odor. It is resistant to decay making it useful for fence posts and other items exposed to moisture. It is also useful for lumber, millwork, furniture, and small boats. Technical details of the wood have been published (Center for Wood Anatomy Research 2003). The use of sassafras in herbal medicine has a long history beginning with Native Americans who used it to treat colds, high blood pressure, heart troubles, swelling, as a tonic, to treat for worms, and to control fever (Moerman 1986). Sassafras tea is still widely drunk both for pleasure and as a tonic. Extracts and infusions of the plant are used to treat a wide range of physical complaints. Dry, powdered leaves, called file, are used to thicken gumbo and other Cajun dishes (Katzer 1999). Oil of sassafras, extracted from the root bark, was the original flavoring for root beer and was used to flavor candy, chewing gum, and medicines. Because it contains safrole, a carcinogen, it is no longer permitted in food, but may be used to add scent to cosmetics and soap (TreeGuide 2003).

References

- Bonner, F.T. and L.C. Maisenhelder. 1974. *Sassafras albidum* (Nutt.) Nees sassafras. In: C.S. Schopmeyer, tech. coord. Seeds of woody plants in the United States. Agriculture Handbook 450. U.S. Department of Agriculture, Forest Service, Washington, DC. p. 761-762.
- Center for Wood Anatomy Research. 2003. *Sassafras albidum*. Technical Transfer Fact Sheet. U.S. Department of Agriculture, Forest Service, Forest Products Laboratory, Madison, Wisconsin. <http://www2fpl.fs.fed.us/TechSheets/HardwoodNA/htmlDocs/sassafrasalbi.html>. 3 p.
- Floridata. 2003. *Sassafras albidum*. http://www.floridata.com/ref/s/sass_alb.cfm. 4 p.

Griggs, M.M. 1990. *Sassafras albidum* (Nutt.) Nees, sassafras. In: R.M. Burns, and B.H. Honkala. Silvics of North America. Vol. 2., Hardwoods. Ag. Handb. 654. U.S. Department of Agriculture, Forest Service, Washington, DC. p. 773-777.

Katzer, G. 1999. Sassafras [*Sassafras albidum* (Nutt.) Nees]. http://www-ang.kfunigraz.ac.at/~katzer/engl/Sass_alb.html. 4 p.

Moerman, D.E. 1986. Medicinal plants of Native America. Technical Reports 19. University of Michigan Museum of Anthropology, Ann Arbor, MI. 534 p.

Natural Resources Conservation Service. 2003. Plants profile: *Sassafras albidum* (Nutt.) Nees. http://plants.usda.gov/cgi_bin/plant_profile.cgi?symbol=SAAL5. 6 p.

Oberle, R. 2003. *Sassafras albidum* (Nutt.) Nees. <http://www.biologie.uni-ulm.de/systax/dendrologie/sasalblv.htm>. 1 p.

Plants For a Future. 2003. Plant portrait-*Sassafras albidum*. <http://www.scs.leeds.ac.uk/pfaf/sassafr.html>. 3 p.

Sanchez de Lorenzo-C., J.M. 2003. Árboles ornamentales: *Sassafras albidum* (Nutt.) Nees. http://www.arbolesornamentales.com/Sassafrasa_lbidum.htm. 1 p.

Sargent, C.S. 1923. Manual of the trees of North America (exclusive of Mexico). Houghton Mifflin, Boston, MA. 910 p.

Sullivan, J. 1993. *Sassafras albidum*. In: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory, Fire Effects Information System. <http://www.fs.fed.us/database/feis/plants/tree/sasalb/all.html>. 17 p.

TreeGuide. 2003. Sassafras. <http://www.treeguide.com/Species.asp?SpeciesID=953>. 3 p.

Vines, R.A. 1982. Trees of North Texas. University of Texas Press, Austin, TX. 466 p.

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