

Sea-buckthorn



Sea-buckthorn (*Hippophae rhamnoides*)

General Description

A shrub or small tree, native from Europe to the Altai mountains in western and northern China and the Himalayan mountains. Sea-buckthorn was introduced into North America in 1923. A very hardy plant with foliar and fruit interest, but sometimes short-lived.

Leaves and Buds

Bud and Leaf Arrangement - Alternate.

Bud Color - Silvery to pale brown.

Bud Size - 1/8 to 1/4 inches long.

Leaf Type and Shape - Simple, linear to linear-lanceolate.

Leaf Margins - Entire with no serrations.

Leaf Surface - Silver-white scales, becoming glabrescent at maturity.

Leaf Length - 1 to 3 inches.

Leaf Width - 1/8 to 1/4 inch.

Leaf Color - Silvery-green in summer, grayish-green in fall.

Flowers and Fruits

Flower Type - Borne in axillary racemes on old wood.

Flower color - Yellow, before leafing out.

Fruit Type - Drupe-like, globose 1/4 to 1/3 inch long.

Fruit Color - Bright orange, persisting from September through the winter.

Form

Growth Habit - Large shrub or small tree, spreading and irregularly-rounded, loose and open.

Texture - Fine, summer; medium, winter.

Crown Height - 10 to 15 feet.

Crown Width - 8 to 10 feet.

Bark Color - Grayish-brown.

Root System - Fibrous spreading.

Environmental Requirements

Soils

Soil Texture - Performs best on coarse-textured soils.

Soil pH - 6.0 to 8.5. Adaptable to high pH and saline soils.

Windbreak Suitability Groups - 1, 1K, 3, 4, 4C, 5, 8, 9C, 9L.

Cold Hardiness

USDA Zone 3.

Water

Prefers subsoil moisture as opposed to water-logged or ponded sites.

Light

Full sun or light shade.

Uses

Conservation/Windbreaks

Medium shrub to small tree for farmstead and field windbreaks, roadside bank stabilization, living snow fences and riparian plantings.

Wildlife

Dense shrubby form provides cover for many wildlife species.

Agroforestry Products

Food - Astringent fruits, highly acidic, used as a juice in Asia with high Vitamin C content.

Medicinal - Used as curative skin ointments and in cancer research.

Urban/Recreational

Very attractive silvery-green foliage and orange persisting fruit throughout the winter. A variety of uses in the landscape, especially on droughty and saline sites. Thorns may limit use in some sites. Sometimes short-lived.

Cultivated Varieties

None.

Related Species

Russet Buffaloberry (*Shepherdia canadensis*)

Russian-olive (*Elaeagnus angustifolia*)

Silverberry (*E. commutata*)

Silver Buffaloberry (*S. argentea*)

Pests

No major pest problems.

Fragrant Sumac



Fragrant Sumac (*Rhus aromatica*)

General Description

Spreading shrub with branches turning up at the tip. Tends to form a dense mass of stems and leaves. Good for bank stabilization. Fragrant aromatic leaves, particularly when crushed. Yellow catkin-like flowers.

Leaves and Buds

Bud Arrangement - Alternate.

Bud Color - Yellow, pubescent, covered by leaf scar.

Bud Size - Small.

Leaf Type and Shape - Trifoliate.

Leaf Margins - Acute to acuminate, crenate-serrate.

Leaf Surface - Hairy, pubescent.

Leaf Length - 1½ to 3 inches; leaflets 1 to 2 inches.

Leaf Width - 1½ to 3 inches; leaflets 1/2 to 1 inch.

Leaf Color - Soft green as leaflets unfold, then turning semi-glossy, deep green in summer, and yellow to red in autumn.

Flowers and Fruits

Flower Type - Polygamous or dioecious, male buds are 1 inch catkins, female are short panicles at the ends of branches.

Flower Color - Yellowish.

Fruit Type - Hairy-clustered drupes, 1/4 inch in diameter, females only.

Fruit Color - Red.

Form

Growth Habit - Ascending, branchlets pubescent, rounded mounds.

Texture - Medium, summer; medium, winter.

Crown Height - 3 to 9 feet.

Crown Width - 6 to 10 feet.

Bark Color - Gray-brown, aromatically fragrant when bruised, leaf scars circular, distinctly raised.

Root System - Fibrous, spreading.

Environmental Requirements

Soils

Soil Texture - Adapted to a variety of soils.

Soil pH - 5.0 to 7.5. Prefers acidic soils.

Windbreak Suitability Group - 1, 1K, 3, 4, 4C, 5, 6D, 6G.

Cold Hardiness

USDA Zone 4.

Water

Moderately drought tolerant.

Light

Full sun, to partial (1/2 to 3/4) shade.

Uses

Conservation/Windbreaks

Small to medium shrub for farmstead windbreaks and riparian plantings.

Wildlife

Excellent escape and nesting ground cover.

Agroforestry Products

Wood - Bark used in tanning leather and basket making.

Medicinal - Used in treating diabetes, kidney and bladder discharge, and as a diuretic and mouthwash.

Urban/Recreational

Massing, naturalizing. Fast cover for bank stabilization.

Cultivated Varieties

Green Globe Sumac (*Rhus aromatica* 'Green Globe') - Rounded, 5 to 5½ feet tall.

Gro-low Sumac (*R. aromatica* 'Gro-low') - 2 to 3½ foot ground cover, much lower growing.

Related Species

Skunkbush or Lemonade Sumac (*Rhus trilobata*)

Pest

No major pest problems.

FRAGRANT SUMAC

Rhus aromatica Ait. var.
aromatica

Plant Symbol = RHARA2

Contributed by: USDA NRCS National Plant Data Center & the Biota of North America Program



Oklahoma Biological Survey

Alternate common names

Aromatic sumac, lemon sumac, polecat bush

Uses

Wildlife: The fruit is an important winter food for birds, including turkey, ruffed grouse, robins, and flickers, and for various small mammals (e.g., raccoon, opossum, chipmunk). The foliage is relatively unpalatable to most species of wildlife and domestic livestock. Thickets of fragrant sumac provide cover for many species of birds and small mammals.

Conservation: Fragrant sumac is not widely used for landscape plantings, probably because of its relatively small size, but it is used as a ground cover, especially on banks. The plants are hardy and can grow in sun or partial shade. The main ornamental feature is the orange to red fall foliage color. Several cultivars have been selected – mostly for variation in growth form. Fragrant sumac also has been used for rehabilitating disturbed sites such as banks, cuts, and fills.

Ethnobotanic: American Indians made a tart drink (“Indian lemonade”) from the ripe fruits of fragrant sumac (larger-fruited *Rhus* species provide a larger quantity of the same substance). The bark of all sumacs has been used as an astringent, and leaves

and bark can be used for tanning leather because of the high tannin content. Various Indian tribes have used fragrant sumac in treatment for various illnesses and health problems. The leaves, mixed with tobacco, were used as a smoking mixture.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant’s current status, such as, state noxious status and wetland indicator values.

Description

General: Sumac family (Anacardiaceae). Straggling to upright native shrubs 0.5-2(-2.5) meters tall (rarely tree-like), forming colonial thickets of up to 10 feet spread, suckering from the roots, the branches slender ascending, puberulent, glabrate, or densely pilose; buds naked, tiny, yellow, hairy, surrounded by a raised, circular leaf scar. Leaves: deciduous, alternate, compound with 3 leaflets, variable in shape, lobing, and margin, the leaflets unstalked, ovate to rhomboid, more or less wedge-shaped at the base, coarsely-toothed, usually shiny-glabrous above, the terminal leaflet 3-6.5 cm long; summer foliage green to glossy blue-green, turning orange to red or purple in the fall. Flowers: yellow, in small, dense inflorescences on short lateral shoots, opening before the leaves, bisexual and unisexual, both types borne on the same plant (the species polygamodioecious); male (staminate) flowers in yellowish catkins, female (pistillate) flowers in bright yellow, short panicles at the ends of branches. Fruits: 5-7 mm in diameter, bright red at maturity and densely hairy, containing a single nutlet 3.8-4.5 mm long, in terminal clusters. The common name “sumac” is from the Middle English for related tree. The leaves are fragrant or at least odorous.

Variation within the species: three varieties are currently recognized, based on differences in geography, leaf shape, and pubescence of stems, leaves, and fruits. Var. *aromatica* occurs over nearly the whole range of the species.

Rhus aromatica var. *arenaria* (Greene) Fern. – restricted to Ohio, Indiana, and Illinois.

Rhus aromatica var. *serotina* (Greene) Rehd. – the western segment, occurring from South Dakota to Texas and eastward to Arkansas, Missouri, Iowa, and Illinois. It apparently intergrades with forms of *Rhus*

trilobata where their ranges meet in the Great Plains (mainly from Texas to South Dakota).

Distribution: Fragrant sumac is native to most of the US east of the Rocky Mountains, from Ontario and western Quebec, Massachusetts and New Hampshire to Florida and west to the Great Plains in Texas to South Dakota. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

Fragrant sumac is common along the forested eastern margins of the Great Plains and in open or otherwise disturbed sites on the margins of the Gulf Coast prairie. It grows at a range of sites including open rocky woodlands, valley bottoms, lower rocky slopes, and roadsides. Flowering: March-May, usually before the leaves expand; fruiting: June-August.

Establishment

Fragrant sumac reproduces from seed or clonally via root suckers. It is a pioneer species, establishing rapidly from seed after heavy disturbance, particularly fire. Browsing by deer may be responsible for rapid early removal of mature fruits; birds are the primary dispersal later. Individual plants may live about 20-30 years; clones can live substantially longer. Fragrant sumac sprouts vigorously after fire and can be propagated from root cuttings.

Seed dormancy results from the presence of a hard, impermeable seed coat. Fire scarifies seeds, promoting germination; various artificial methods of pretreatment have been tested, including sulfuric acid, and hot water soaks, mechanical scarification, and cold treatment. Pretreated sumac seeds generally begin germination within 10-20 days. The resistant seed coats probably allow the seeds to remain viable for several years in the humus layer, as do those in seeds of some other *Rhus* species, allowing re-establishment through seed progeny when conditions are favorable for germination and growth.

Management

Fragrant sumac reportedly sprouts vigorously after fire in the southern Great Plains, and the primary mode of colonization after disturbance is through sprouting from the adventitious-bud root crown.

Cultivars, Improved and Selected Materials (and area of origin)

These plant materials are readily available from commercial sources. Contact your local Natural Resources Conservation Service (formerly Soil

Conservation Service) office for more information. Look in the phone book under "United States Government." The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

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Rhus aromatica 'Gro-low' (Fragrant sumac)



Hardiness Zones: 1 2 3 4 5 6 7 8 9 10 11

Botanical Name: *Rhus aromatica* 'Gro-low' rus air-oh-MAT-ih-kah **Common Name:** Fragrant sumac **Genus:** *Rhus*

This vigorous shrub hugs the ground (to 2 feet tall) and spreads out to 8 feet, making it an excellent choice for stabilizing a bank or smothering weeds. It has small yellow flowers, hairy red fruits, and glossy leaves that change to gorgeous orange-red in autumn.

Noteworthy characteristics: Beautiful fall color; fast, compact growth.

Care: Grow in average, moist but well-drained soil in full sun (for best fall color).

Propagation: Divide suckers when dormant or sow seed in autumn. Take semi-ripe cuttings in summer or root cuttings in winter.

Problems: Powdery mildew, wood rot, Verticillium wilt, leaf spot, blister, canker, dieback, caterpillars, scale.

Height	1 ft. to 3 ft.
Spread	6 ft. to 10 ft.
Growth Habit	Spreads
Growth Pace	Fast Grower
Light	Full Sun to Part Shade
Moisture	Dry to Medium
Maintenance	Low
Tolerance	Deer Tolerant;Drought Tolerant;Frost Tolerant
Characteristics	Attracts Birds; Attracts Butterflies; Native; Showy Fall Foliage; Showy Fruit; Showy Seed Heads
Bloom Time	Spring
Flower Color	Yellow Flower
Uses	Ground Covers, Naturalizing, Roadside, Waterside
Seasonal Interest	Winter Interest, Spring Interest, Fall Interest
Type	Shrubs

Taken from:
www.finegardening.com

'Konza' Aromatic Sumac

Rhus aromatica Aiton var. *serotina*
(Greene) Rehder

A Conservation Plant Release by USDA NRCS Manhattan Plant Materials Center, Manhattan, Kansas



Figure 1. Leaves and fruit cluster of aromatic sumac in the summer around mid July. Photo courtesy of Google images.

'Konza' aromatic sumac (*Rhus aromatic* var. *serotina*) (Greene (Rehd.)) is a cultivar released in 1980 in cooperation with the Kansas and Nebraska Agricultural Experiment Stations.

Description

Konza aromatic sumac is a deciduous, native, perennial shrub which grows to a height of 10 feet. The plant is usually wider than it is tall, but growth form will vary depending on the soils and site location of the planting. The leaves of Konza are compound, consisting of three leaflets, and are attached to the plants stem in an alternate fashion. The trifoliate leaves are 1 to 3 inches long, petiolate, with pubescence below. Leaves are fragrant or at least odorous. It has orange to red fall foliage color. This shrub occurs singly or in dense thickets that may be connected by rhizomes. Root systems are deep and extensively branched. Stems are numerous, spreading and highly branched, and brown and pubescent when young, but develop a gray bloom with age. Plants of aromatic sumac are functionally dioecious, having male and female flowers on different plants. However, there are some plants that have some perfect flowers on an otherwise staminate (male) or pistillate (female) plant. Flowers are yellow in small dense inflorescences on short lateral shoots, staminate flowers in yellowish catkins, pistillate flowers in bright yellow, short panicles at the branch ends. Fruits are orange red, sticky, berry-like drupe containing a single bony seed.

Source

The original germplasm for the release Konza was collected in 1958 on a limestone break south of Manhattan, KS. Initial evaluation at Manhattan consisted of 20 accessions representing native collections from Wyoming, Nebraska, Missouri, Kansas and Oklahoma. The Konza germplasm exhibited the least amount of leaf rust and insect damage to the foliage. The germplasm was tested as PMK-32 and compared to commercial sources in 64 field plantings made in Nebraska, 24 in Kansas and 5 in Oklahoma in the 1970's. Konza proved superior in growth, establishment and form to the other materials tested.

Conservation Uses

The fruit is an important winter food for birds, including turkeys, ruffed grouse, robins and flickers, and for various small mammals. It is useful for windbreaks, cover on areas subject to critical erosion, screening unsightly areas and noise abatement. Although not selected for landscape use, Konza does have potential for use in highway rest areas, recreation areas, and for trapping blowing snow. Because it is a native species it requires little maintenance and will tolerate some drought when fully established.

Area of Adaptation and Use

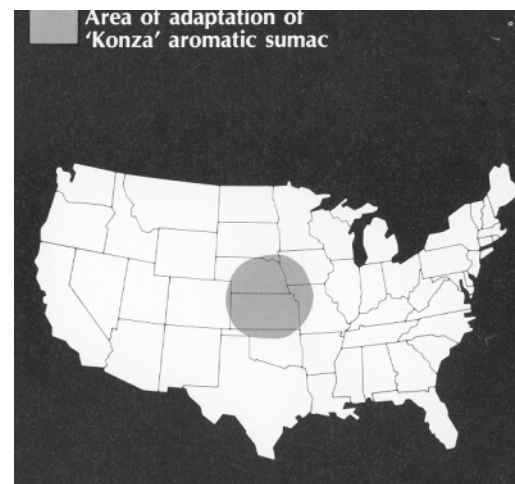


Figure 2. Area of adaptation of 'Konza' aromatic sumac.

Establishment and Management for Conservation Plantings

Seed should be planted at a ½ inch depth in a dry, coarse textured soil. Seeding rates of 2 to 4 pounds per acre are recommended depending on row spacing. It may be broadcast on rough surfaces or in pits. If drilled the seed

should be planted with other slow growing shrub species. The seedlings grow moderately well, but young plants are not highly competitive with fast growing herbaceous species. In the bare root nursery trade seed should be planted at ½ inch depth with 25 viable seed units per linear foot of row. Beds should be mulched to prevent excessive drying. Plants may be lifted as 1-0 or 2-0 stock, depending on growth rate. Field transplanted seedlings should be 8 to 12 inches tall. Once they are established seedlings are hardy and resilient.

Ecological Considerations

Konza can produce large thickets in grazed areas due to its vegetative reproduction. It is relatively unpalatable to livestock and wildlife due to the high tannin content of its leaves and stems. The plants are hardy and can grow in full sun or partial shade. This species is susceptible to vascular wilt caused by *Fusarium oxysporum*. A sumac feeding psyllid (*Calophya trioziomiwa*) has been collected on fragrant sumac in many locations.

Seed and Plant Production

Fruits can be harvested in late summer or early fall. Fruit of *Rhus aromatic* is synchronous and does not support a typical staggered fruit ripening pattern. Fruits are collected by hand or by flailing the branches after leaf drop in the fall. Harvested fruits are macerated and flushed with water to remove the pulp, skin and debris from the lot. The remaining materials, including the seeds, are dried and fanned to remove loose debris. There are approximately 20,000 cleaned seed per pound. The recommended standards for purchasing seeds are 40 percent germination and 95 percent purity. Cleaned seed can remain viable in a dry, cool storage unit for up to five years. Seed germination is inhibited by a hard impervious seed coat and embryo dormancy. Both forms of dormancy vary widely among seed lots. Seed coat permeability may be increased by a 20 minute to 2 hour concentrated sulfuric acid scarification process. A cool, wet stratification period of 30 to 120 days is required to release embryo dormancy. Embryo dormancy can also be broken in fragrant sumac by a gibberellic acid (GA3) treatment at 500 to 1000 parts per million (ppm) concentrations.

Availability

For conservation use: Konza aromatic sumac seedlings are available from conservation nurseries.

For seed or plant increase: The Manhattan PMC maintains breeder and foundation seed stocks. There is no Registered Class of seed for Konza.

For more information, contact:
Manhattan Plant Materials Center
3800 South 20th Street
Manhattan, Kansas 66502
(785) 539-8761 FAX (785) 539-2034
<http://www.plant-materials.usda.nrcs.gov>

Release Brochure for Konza Aromatic Sumac (*Rhus aromatica*). USDA-Natural Resources Conservation Service, Manhattan PMC. Manhattan, Kansas 66502. Published: [February 2012]

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Smooth Sumac



Smooth Sumac (*Rhus glabra*)

General Description

A large, loose, open-spreading shrub with a flattish crown. Usually grows in masses and suckers profusely. Outstanding red fall color. Similar to Staghorn sumac but shorter.

Leaves and Buds

Bud Arrangement - Alternate.

Bud Color - Gray-brown.

Bud Size - Small, round-ovoid with leaf scar almost completely encircling the bud, pubescent.

Leaf Type and Shape - Pinnately-compound, 11 to 31 leaflets per leaf.

Leaf Margins - Leaflets are acuminate, serrate.

Leaf Surface - Smooth, glaucous beneath.

Leaf Length - 12 to 16 inches; leaflets 2 to 5 inches.

Leaf Width - 4 to 8 inches; leaflets 1/2 to 1 inch.

Leaf Color - Dark green in summer, showy red leaves in autumn.

Flowers and Fruits

Flower Type - Dioecious, borne in dense 6 to 9 inch panicles.

Flower Color - Greenish.

Fruit Type - Hairy drupe in clusters.

Fruit Color - Red or scarlet.

Special Features - Red to rusty-red fruit cluster in autumn.

Form

Growth Habit - Upright, stout, branching, forms thicket, umbrella-like canopy.

Texture - Medium-coarse, summer; medium-coarse, winter.

Crown Height - 5 to 15 feet.

Crown Width - 10 to 15 feet.

Bark Color - Branches glabrous, glaucous, brownish.

Root System - Fibrous, spreading root system, suckering habit.

Environmental Requirements

Soils

Soil Texture - Adapted to a variety of soil types.

Soil pH - 5.0 to 8.0.

Windbreak Suitability Group - 1, 1K, 3, 4, 4C, 5, 6D, 6G.

Cold Hardiness

USDA Zone 3.

Water

Moderately drought tolerant. Available water determines mature plant height.

Light

Full sun, to partial shade.

Uses

Conservation/Windbreaks

Small to medium shrub for farmstead windbreaks and riparian plantings.

Wildlife

Excellent escape and nesting ground cover.

Agroforestry Products

Wood - Leaves and roots used in dyeing and tanning leather.

Food - Drupes eaten fresh or processed into a lemonade drink.

Medicinal - Extracts used as a tonic, astringent, and antiseptic; drupes as refrigerant and diuretic, and root bark as a tea to stop hemorrhaging.

Urban/Recreational

Massing, naturalizing. Fast cover for bank stabilization. Lends a tropical effect in landscape. Outstanding reddish fall color.

Cultivated Varieties

Cutleaf Smooth Sumac (*Rhus glabra* 'Laciniata')

Related Species

Staghorn Sumac (*Rhus typhina*)

Pests

No major pest problems. A stem wilt sometimes occurs.

SMOOTH SUMAC

Rhus glabra L.

Plant Symbol = RHGL

Contributed by: USDA NRCS Northeast Plant Materials Program



Joseph Ruffner
USDA NRCS National Plant Materials Center
Beltsville, Maryland

Uses

Sumac serves primarily as a winter emergency food for wildlife. Ring-necked pheasant, bobwhite quail, wild turkey, and about 300 species of songbirds include sumac fruit in their diet. It is also known to be important only in the winter diets of ruffed grouse and the sharp-tailed grouse. Fox squirrels and cottontail rabbits eat the sumac bark. White-tail deer like the fruit and stems.

Sumac also makes good ornamental plantings and hedges because of the brilliant red fall foliage. It is best used on drastically disturbed sites where pioneer species are desirable.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Weediness

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, or state natural resource or agriculture department regarding its status and use.

Weed information is also available from the PLANTS Web site at plants.usda.gov.

Description

Anacardiaceae Family. Smooth sumac is a U.S. native, deciduous, large shrub to small tree, seldom over 10-15 feet tall. It has alternate, compound leaves, 16-24 inches long. The leaflets are narrowed or rounded at the base and sharply pointed at the tip with finely toothed edges. The leaflets are dark green and smooth above, and pale beneath, except along the midrib. Compact clusters of greenish-yellow flowers bloom from June to July, and fruits mature from August to September. The fruiting head is a compact cluster of round, red, hairy fruits called drupes. Each drupe measures ¼ inch in diameter and contains one seed. Each cluster of drupes may contain 100 to 700 seeds. Fruit is produced on plants 3 to 4 years old. Because most populations of sumac have male and female flowers on separate plants, only the female plants produce seed. Occasionally, plants are found which have both male and female flowers. The germination of sumac seeds is enhanced by their passage through the digestive system of rabbits, ring-necked pheasants, and quail. The presence of fire also encourages increased germination. There are about 75,000 seeds per pound.

Adaptation and Distribution

Smooth sumac is widely distributed throughout the United States. It is extremely drought resistant and is commonly found in open fields and roadsides, fence rows, railroad rights-of-way, and burned areas, on sandy or gravelly soil. All sumacs are tolerant of slightly acid soil conditions and textures ranging from coarse to fine. Sumacs are not highly shade tolerant and are considered early successional species.

For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Web site.

Establishment

One year old nursery grown seedlings are normally used for planting large areas. Once established, stands will spread from the root sprouts. The lateral root system is extensive and spread outward 3 or more feet a year. This sprouting is encouraged by cutting or fire injury. The colonies appear to lose vigor in about 15 years.

Plant Materials <<http://plant-materials.nrcs.usda.gov/>>

Plant Fact Sheet/Guide Coordination Page <<http://plant-materials.nrcs.usda.gov/intranet/pfs.html>>

National Plant Data Center <<http://npdc.usda.gov>>

Management

Sumac stands can best be maintained by eliminating competing vegetation by mowing, chemicals, or fire. Sumacs fail to compete with invading tree species and are seldom found growing under a closed canopy.

Cultivars, Improved, and Selected Materials (and area of origin)

No known cultivars of this species are known to exist. Rooted plants may be available from specialty nurseries.

Control

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Trade names and control measures appear in this document only to provide specific information. USDA, NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

Prepared By & Species Coordinator:

USDA NRCS Northeast Plant Materials Program

Edited: 05Feb2002 JLK; 060816.jsp

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Staghorn Sumac



Staghorn Sumac (*Rhus typhina*)

General Description

A large, loose, open-spreading shrub with a flattish crown and rather picturesque branches resembling the velvety antlers of a deer, hence the name Staghorn. Borderline hardiness, may regularly freeze back in winter.

Leaves and Buds

Bud Arrangement - Alternate.

Bud Color - Gray-brown.

Bud Size - Small, hairy, leaf scars not elevated and somewhat "C" shaped.

Leaf Type and Shape - Pinnately-compound, 11 to 27 leaflets per leaf.

Leaf Margins - Leaflets are acuminate, serrate.

Leaf Surface - Very pubescent or velvet-like when young, including petiole and rachis, glaucous beneath.

Leaf Length - 1 to 1½ feet; leaflets 2 to 4½ inches long.

Leaf Width - 4 to 9 inches; leaflets 1 to 1½ inches.

Leaf Color - Medium green, orange to red autumn color.

Flowers and Fruits

Flower Type - Dioecious, borne in dense, hairy 6 to 12 inch panicles.

Flower Color - Greenish-yellow.

Fruit Type - Densely hairy drupes packed in a pyramidal cluster.

Fruit Color - Red or crimson.

Form

Growth Habit - Upright, stout, branching, umbrella-like canopy.

Texture - Coarse, summer; coarse, winter.

Crown Height - 10 to 15 feet.

Crown Width - 10 to 20 feet.

Bark Color - Branches velvety and hairy concealing the lenticels, larger stems develop rough darkened bark.

Root System - Fibrous, spreading.

Environmental Requirements

Soils

Soil Texture - Adapted to a variety of soil types.

Soil pH - 4.5 to 7.5, but prefers acidic soils.

Windbreak Suitability Group - 1, 3, 4, 4C, 5.

Cold Hardiness

USDA Zone 3. However, stem dieback often occurs.

Water

Slightly less drought tolerant than Smooth Sumac.

Light

Full sun, to partial shade.

Uses

Conservation/Windbreaks

Medium or large shrub for farmstead windbreaks and riparian plantings.

Wildlife

Excellent escape and nesting ground cover.

Agroforestry Products

Wood - Roots and inner bark used as a dye.

Food - Sumac lemonade made from berries.

Medicinal - Some *Rhus* species are used as tea for internal disorders, mouthwash, and constipation.

Urban/Recreational

Massing, naturalizing. Fast cover for bank stabilization.

Cutleaf cultivars are most ornamental for landscaping.

Cultivated Varieties

Shredleaf Staghorn Sumac (*Rhus typhina* 'Dissecta') - Finer-textured, lacy, fern-like leaves.

Cutleaf Staghorn Sumac (*R. typhina* 'Laciniata') - Similar to above.

Related Species

Smooth Sumac (*Rhus glabra*)

Pests

No major pest problems.

STAGHORN SUMAC

Rhus hirta (L.) Sudworth

Plant Symbol = RHHI2

Contributed by: USDA NRCS Northeast Plant
Materials Program



Britton & Brown 1913
Courtesy of Kentucky Native Plant Society
© PLANTS

Alternate Names

Rhus typhina L.

Uses

Sumac serves primarily as a winter emergency food for wildlife. Ring-necked pheasant, bobwhite quail, wild turkey, and about 300 species of songbirds include sumac fruit in their diet. It is also known to be important only in the winter diets of ruffed grouse and the sharp-tailed grouse. Fox squirrels and cottontail rabbits eat sumac bark. White-tail deer like the fruit and stems.

Sumac also makes good ornamental plantings and hedges because of the brilliant red fall foliage. It is best used on drastically disturbed sites where pioneer species are desirable.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Weediness

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, or state natural resource or agriculture department regarding its status and use. Weed information is also available from the PLANTS Web site at plants.usda.gov.

Description

Anacardiaceae Family: Staghorn sumac is a U.S. native, deciduous, large shrub to small tree that can attain a height of 30-35 feet. It has alternate, compound leaves, 16 to 24 inches long. The leaflets are narrowed or rounded at the base and sharply pointed at the tip with finely serrated edges. The leaflets are dark green and smooth above, and pale beneath, except along the midrib. Compact clusters of greenish-yellow flowers bloom from June to July. Fruits mature from August to September. The fruiting head is a compact cluster of round, red, hairy fruits called drupes. Each drupe measures ¼ inch in diameter and contains one seed. Each cluster of drupes may contain 100 to 700 seeds. Fruit is produced on plants 3 to 4 years old. Because most populations of sumac have male and female flowers on separate plants, only the female plants produce seed. Occasionally, plants are found which have both male and female flowers. The germination of sumac seeds is enhanced by their passage through the digestive system of rabbits, ring-necked pheasants, and quail. The presence of fire also encourages increased germination. There are about 60,000 seeds per pound.

Adaptation and Distribution

Staghorn sumac is found throughout the eastern half of the United States. It generally prefers fertile, upland sites but tolerates a wide variety of conditions. Sumac is tolerant of slightly acid soil conditions and textures ranging from coarse to fine. Typical growing sites include open fields and roadsides, fence rows, railroad rights-of-way, and burned areas.

Sumac is not highly shade tolerate and are considered early successional species.

For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment

One year old nursery grown seedlings are normally used for planting large areas. Once established, stands will spread from the root sprouts. The lateral root system is extensive and spread outward three or more feet a year. This sprouting is encouraged by cutting or fire injury. The colonies appear to lose vigor in about 15 years.

Management

Sumac stands can best be maintained by eliminating competing vegetation by mowing, chemicals, or fire. Sumacs fail to compete with invading tree species and are seldom found growing under a closed canopy.

Cultivars, Improved, and Selected Materials (and area of origin)

No known varieties of these plants exist. Rooted plants may be available from specialty nurseries.

Control

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Trade names and control measures appear in this document only to provide specific information. USDA, NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

Prepared By & Species Coordinator:

USDA NRCS Northeast Plant Materials Program

Edited: 05Feb2002 JLK; 060816.jsp

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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Rhus typhina 'Tigereye Baittiger' (Tiger eyes sumac, Staghorn sumac, Velvet sumac)



Hardiness Zones: 1 2 3 4 5 6 7 8 9 10 11

Botanical Name: *Rhus typhina* 'Tigereye Baittiger' rus ty-FEE-nah **Common Name:** Tiger eyes sumac, Staghorn sumac, Velvet sumac **Genus:** *Rhus*

Lemon-lime foliage, fuzzy stems, and intense fall color make this sumac cultivar a standout. It grows into an upright, rounded form about 6 feet tall and as wide. New growth emerges chartreuse. Fall brings leaves of yellow, scarlet, and orange. Flowers are yellowish green and followed, on female plants, by hairy, dark red fruit. This plant spreads by suckers and can be invasive. The species is native to North America.

Noteworthy characteristics: Eye-catching foliage in spring, summer, and fall.

Care: Pick a site in full sun for best autumn color. Grow in moist but well-drained, moderately fertile soil. May be invasive.

Propagation: Sow seed in autumn in a seedbed. Take semi-ripe cuttings in summer, or root cuttings in winter. Separate suckers when plant is dormant.

Problems: Powdery mildew, Verticillium wilt, wood rot, leaf spot, blister, canker, dieback, caterpillars, scale insects.

Height	10 ft. to 15 ft.
Spread	15 ft. to 30 ft.
Growth Pace	Invasive/Aggressive Grower; Moderate Grower
Light	Full Sun to Part Shade
Moisture	Medium Moisture
Maintenance	Moderate
Characteristics	Attracts Birds; Native; Showy Fall Foliage; Showy Foliage; Showy Fruit
Bloom Time	Early Summer; Late Summer; Summer
Foliage Color	Colorful/Burgundy Foliage
Flower Color	Green Flower; Yellow Flower
Uses	Beds and Borders, Naturalizing
Style	Woodland Garden
Seasonal Interest	Summer Interest, Fall Interest
Type	Shrubs, Trees

Taken from: www.finegardening.com

AMERICAN SYCAMORE

Platanus occidentalis L.

Plant Symbol = PLOC

Contributed by: USDA NRCS National Plant Data Center & the Biota of North America Program



Oklahoma Biological Survey

Alternate common names

Planetree, American planetree, buttonball tree

Uses

Industry: American sycamore is grown in short-rotation plantations primarily for pulp and it also is used for rough lumber. The heavy, close-grained wood is difficult to split and work because of interlocking fibers. It has been used for butcher's blocks, furniture, veneer and interior trim, boxes and crates, flooring, and particle and fiberboard.

Conservation: American sycamore is a good planting where a large, fast-growing tree is desired. Negative features are the relatively weak limbs (susceptible to wind and ice damage) and the large leaves that decay slowly after falling. The huge size quickly attained by these trees is often underestimated. The London planetree, *Platanus hybrida* Brot. (= *Platanus acerifolia* (Ait.) Willd.), is widely planted as a street tree, probably due to its disease resistance and tolerance of air pollution (American sycamore is susceptible to ozone damage). The London plane is a

hybrid between American sycamore and oriental plane (*P. orientalis*) and perhaps includes a number of backcrosses.

American sycamore is recommended for planting on all types of strip-mined land, and it is useful in rehabilitation of various sites with saturated soils. It is often a natural early colonizer of disturbed sites such as old fields, spoil banks, streambanks degraded by channelization, and waterway disposal sites.

Ethnobotanic: Native Americans used sycamore for a variety of medicinal purposes, including cold and cough remedies, as well as dietary, dermatological, gynecological, respiratory, and gastrointestinal aids.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

General: Planetree family (Platanaceae). Monoecious, native, deciduous trees with an open crown, among the largest of Eastern deciduous forests, reaching heights of 18-37 meters, and the greatest diameter of any temperate hardwood tree -- the largest known range 3-4 meters d.b.h.; twigs zig-zag, with only lateral buds, these completely covered by a single scale within the petiole base and not visible until after the petiole detachment; bark of upper trunk exfoliating in patches, leaving areas of inner bark exposed, a patchwork of browns, yellows, and greens against a background of white, the darker bark with age falling away in thin brittle sheets, exposing younger and lighter-colored bark. Leaves are deciduous, alternate, 10-35 cm long, palmate-veined and roughly star-shaped, with 3-5 sharp lobes, the blades often as broad or broader than they are long, truncate to cordate at the base, on petioles to 12 cm long; a leaf-like stipule at the petiole base is persistent during early growth. Staminate and pistillate flowers in separate, tightly compacted, ball-shaped clusters. Fruit is single-seeded and indehiscent (an achene), 8-9 mm long, with a ring of bristles at the base, numerous achenes in a pendulous, ball-shaped fruiting head 2-5 cm in diameter, the individual achenes drifting in the wind if the head breaks up on the tree. Common name apparently borrowed from the European sycamore maple (*Acer pseudoplatanus* L.), which has similar leaves. That

name in turn comes from the Middle Eastern sycamore fig, *Ficus sycomorus* L., its specific epithet from the Greek "sykomoros," mulberry.

Variation within the species: geographic variation in sycamore is extensive, but variants are not currently formally recognized. *Platanus occidentalis* var. *glabrata* and *P. occidentalis* var. *attenuata* are treated as synonyms of the typical expression.

The similar London planetree (below) distinguished by the lobes of its larger leaves being somewhat longer and narrower (often longer than wide), the fruiting heads 1-2 on each stalk, and the bark often somewhat greener.

Distribution

American sycamore is widespread in the eastern United States, from Texas to Nebraska, Iowa, and Wisconsin and into southern Ontario, Canada; apparently extirpated in Maine. It also occurs in the mountains of northeastern Mexico. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

It often is a pioneer on upland sites in the central part of its range, but it is primarily a species of bottomland and alluvial soils, also occurring on creek banks, mesic coves and lower slopes, on a wide range of soil types. It is a major pioneer species in the floodplains of large rivers and occurs on a variety of wet sites, including shallow swamps, sloughs, and wet river bottoms where soil is saturated 2-4 months during the growing season. Water dispersal often results in seed deposition on muddy flats highly conducive to germination because seed dispersal occurs when water is receding after spring floods. American sycamore is most commonly found in mixture with sweetgum, boxelder, silver and red maple, cottonwood, and willows. It is found at 0-300 (-750) meter elevation.

American sycamore can tolerate weeks of flooding, even complete submersion of seedlings, provided that the water is aerated. A significant portion of young sycamores can survive almost 2 months of continuously waterlogged soils during dormancy, but sycamore of various stages will die if the entire tree is inundated for more than two weeks during the growing season. Saplings top-killed by flooding may resprout from the root crown.

Flowers appear with the leaves in April-May or as early as late March in the South. Fruits ripen September-October (-November), usually breaking

up and falling from the tree through the winter and into spring.

Establishment

Open-grown American sycamores usually begin flowering in 6-7 years. Natural stands of sycamore usually produce appreciable numbers of seed at approximately 25 years; optimum seed production occurs from 50-200 years of age. Good seed crops are produced every 1-2 years. Sycamore seeds do not require any pretreatment for good germination. They do not germinate well in heavy litter or in deep shade or in temperatures outside of 59-86 ° Fahrenheit (15-30 ° C.).

Sycamore seedlings require direct sunlight for good growth and establishment, except perhaps on clay soil. One-year-old seedlings may reach 10 feet, and sprouts may reach 25 feet. The potentially great size of mature trees is correlated with exceptionally rapid growth, and maximum age probably does not exceed 250 years, although Smith (1952) notes that 500-600 may be the upper range.

Management

American sycamore can be regenerated from natural seed sources, by planting, or by stump and root sprouting. On "silvicultural biomass farms" aimed at maximum fiber production, fertilization is usually necessary, especially with rotations shorter than 5 years. Sycamores in managed plantations interplanted with legumes or other nitrogen-fixing species were larger than control plants 6 years after establishment of the nitrogen fixers. Sycamore has good coppice regeneration potential, although it has been reported that trees died after two successive harvests. A high percentage of stumps sprout, regardless of stump size or time of harvest, although larger and heavier sprouts are produced from dormant season cuts (vs. growing season).

Significant diseases and insect problems occur in managed plantations and landscaping trees of American sycamore but are largely absent from natural stands. Important problems include anthracnose and eastern mistletoe (*Phoradendron* spp.).

Prescribed fire is not recommended for bottomland forests in which sycamore occurs. Bottomland fires usually move rapidly along the surface, consuming shrubs and herbs and usually killing saplings and seedlings of all species. Larger trees suffer bark wounds that create points of entry for rots, stains, and insects. Under extreme conditions, large trees may

be killed outright. Fire also reduces soil organic layers, leading to site degradation.

Cultivars, Improved and Selected Materials (and area of origin)

These plant materials are readily available from commercial sources. Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government." The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

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