Amur Maple

Amur Maple (*Acer ginnala*)

General Description

A tall shrub or small tree native to northern Asia. Subject to chlorosis on heavy alkaline soils, and susceptible to 2,4-D injury. Popular as a small, multi-stemmed specimen tree. Outstanding bright reddish fall colors are influenced by soil conditions and the cultivar grown. The largest tree in North Dakota is 22 feet tall with a canopy spread of 30 feet.

Leaves and Buds

Bud Arrangement - Opposite.

Bud Color - Reddish-brown or lighter.

Bud Size - 1/8 inch, imbricate buds.

Leaf Type and Shape - Simple, 3-lobed, center lobe longest.

Leaf Margins - Doubly-serrate.

Leaf Surface - Glabrous.

Leaf Length - 1½ to 3 inches.

Leaf Width - 3/4 to 1½ inches.

Leaf Color - Dark green above, light green beneath. Bright red fall color is typical.

Flowers and Fruits

Flower Type - Borne in small panicles.

Flower Color - Yellowish-white, fragrant.

Fruit Type - Paired samaras (schizocarp).

Fruit Color - Brown to red, variable.

Form

Growth Habit - Multi-stemmed, variably rounded in outline.

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

Crown Height - 15 to 20 feet.

Crown Width - 15 to 20 feet.

Bark Color - Grayish-brown on older branches.

Root System - Fibrous, shallow.

Environmental Requirements

Soils

Soil Texture - Adaptable to a variety of soils, except alkaline or poorly-drained soils.

Soil pH - 4.5 to 7.5. Subject to chlorosis on alkaline soils. Does not tolerate salinity.

Windbreak Suitability Group - Groups 1, 3, 5.

Cold Hardiness

USDA Zone 2.

Water

Prefers moist, well-drained soils. Moderately drought tolerant.

Light

Full sun to partial shade.

Uses

Conservation/Windbreaks

Tall shrub or small tree for farmstead windbreaks, riparian plantings, and highway beautification.

Wildlife

Browsed by deer and rabbits. Seeds eaten by squirrels. Fair cover for songbirds.

Agroforestry Products

Food - Native maples used for sugary sap.

Medicinal - Astringent properties, and some *Acer* species are used in cancer research.

Urban/Recreational

Useful in small landscapes, borders, and masses.

Cultivated Varieties

Compact Amur Maple (*Acer ginnala* 'Compactum', syn. *A. ginnala* 'Bailey Compact')

Embers Amur Maple (*A. ginnala* 'Embers') - Produce showy red samaras in addition to red fall leaf color.

Flame Amur Maple (*A. ginnala* 'Flame')

Red Wing Amur Maple (*A. ginnala* 'Red Wing') - Produce showy red samaras in addition to red fall leaf color.

Related Species

Tatarian Maple (*A. tataricum*)

Hybrid Maple (*A. ginnala* x *A. tataricum*) - See Tatarian Maple.

Pests

Sensitive to phenoxy herbicides. Iron chlorosis commonly occurs in alkaline or poorly drained soils. Leaf spot sometimes occurs. Extracts of *Acer* species have been toxic to insect pests.

AMUR MAPLE

Acer ginnala Maxim.

Plant Symbol = ACGI

Contributed By: USDA NRCS National Plant Data Center

from Conservation Trees and Shrubs for Montana
USDA NRCS Montana State Office

Alternative Name
Siberian maple

Uses
Ethnobotanic: The young leaves were used as a tea substitute (Kunkel 1984). Black, blue, and brown dyes were obtained and dried from the leaves.

Landscaping & Wildlife: The main ornamental value of Amur maple is its red fall color and fruit. This is an excellent, low growing tree for small yards. It is sometimes used for hedges or screens. It has a fair rating for wildlife.

Agroforestry: *Acer ginnala* is used in tree strips for windbreaks. They are planted and managed to protect livestock, enhance production, and control soil erosion. Windbreaks can help communities with harsh winter conditions better handle the impact of winter storms and reduce home heating costs during the winter months.

Status
Introduced into the U.S. 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. As of 2008, it was considered as potentially invasive in Connecticut.

Description
General: Maple family (Aceraceae). Amur maple is an introduced, deciduous large shrub or small tree. It can be grown as a multistemmed clump or trained into a small tree with a single trunk. It can also be sheared into a hedge. The leaves are simple, opposite; eight to ten centimeters long, and coarsely toothed. The fragrant, creamy whit flowers appear with the new foliage in April and May (Dirr 1997). The fruit samaras are 0.75 to 1 inch long, held in small panicles and are red to brown in color. The bark is smooth and gray on young branches and grayish brown on older branches.

Distribution: Amur maple is native to Manchuria, north China and Japan and is cultivated in gardens and parks (McMinn & Maino 1951). For current distribution, please consult the Plant profile page for this species on the PLANTS Web site.

Adaptation
Acer ginnala grows best in moist well-drained soil, but can tolerate a wide variety of soils, poor soil fertility, and are pH adaptable. This species displays excellent tolerance to dry and alkaline soils (Dirr 1997). It is reasonably drought tolerant. It will tolerate shade, but develops a better fall color if grown in full sun. *Acer ginnala* grows best in colder climates with cool summers. It can be grown in hotter areas if care is taken to prevent dehydration.

Establishment
Propagation from Seed: Pre-soak the stored seed for twenty-four hours and then stratify for one to four months at 1-8ºC. Seeds can be harvested when they are fully developed but before they have dried and produced any germination inhibitors. Sow immediately in a seedbed or open frame. Spring sown seeds may not germinate for another year. Transfer to a nursery bed in the first spring (Heuser 1997). If the seeds are harvested too soon they will produce very weak plants or no plants at all (McMillan 1985).

Propagation from Cuttings: Cuttings of young shoots should be done in June or July. The cuttings should consist of two to three pairs of leaves and one pair of

buds on the base. Place cuttings in plastic, bag and seal to prevent moisture loss. They must not be allowed to wilt. Trim the cuttings below the lowest node to remove the lower leaves leaving three or four at the tip. A rooting hormone may be applied to improve rooting before planting. Insert the cuttings in the rooting medium up to half their length so the leaves don't touch each other. The cuttings should root in two to three weeks, after which they can be potted (Heuser1997).

Management

Containerized trees should not be planted in their permanent position until they are twenty centimeters or taller. Amur maple should be pruned in the winter or early spring to help develop and maintain a good single trunk tree form. Amur maple is usually pest free; however, sometimes, spraying is necessary to controls aphids.

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

'Red Fruit', 'Bailey Compact', 'Flame', 'Compactum' and 'Durand Dwarf' are cultivars of *Acer ginnala*. 'Red Fruit' is a collective term for types whose fruit color is brilliant red (Dirr 1990). 'Bailey Compact' has a compact shrubby form, growing between eight to twelve feet high. 'Flame' is a dense shrub or small tree with red fruits and fiery red fall color (Dirr 1990). 'Compactum' is dense and compact and shows vigorous growth reaching between five to six feet. 'Durand Dwarf' is a shrubby type, with branches more dense than 'Compactum', will grow three to five feet high.

Consult your local nurseries to choose the right cultivar for your specific landscape.

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Prepared By

Jammie Favorite, formerly USDA, NRCS, National Plant Data Center, Baton Rouge, Louisiana

Species Coordinator

Lincoln M. Moore, formerly USDA, NRCS, National Plant Data Center, Baton Rouge, Louisiana

Edited: 10jan02 jsp; 14feb03 ahv; 24may06jsp; 080715 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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Plant Guide

SUGAR MAPLE

Acer saccharum Marsh.

Plant Symbol = ACSA3

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

A.E. Hoyle
U.S. Forest Service
@ Hunt Institute

Alternate common names
Hard maple, head maple, sugartree, bird's-eye maple

Uses
Sugar maple is the only tree today used for commercial syrup production, as its sap has twice the sugar content of other maple species. The sap, mostly collected in the spring, is concentrated by boiling or reverse osmosis, with about 35-40 liters of sap making 1 liter of syrup. A single tree may produce 5-60 liters of sap per year. Nights below freezing and days at higher than 5°C are needed to ensure good sap flow. Sugar maple was the premier source of sweetener, along with honey, to Native Americans and early European settlers. Native Americans also used sugar maple sap for sugar and candies, as a beverage, fresh or fermented into beer, and soured into vinegar and used to cook meat.

Sugar maple is widely planted as an ornamental or shade tree and many cultivars have been selected, based on variation in growth habit/crown shape, mature height, fall color, leaf shape, and temperature tolerance. The leaves go from green to brilliant yellow, orange, and red in autumn, although there is much variation in fall color within the species. Orange and reds seem to be more intense in New England types, while yellows are more pronounced further west. Interior leaves may be yellow, while outer exposed leaves turn orange-red. The species is

best suited to larger sites where soil compaction is not a concern. It also is sometimes used in shelterbelt plantings and has potential value for rehabilitation of disturbed sites.

Sugar maple is an important timber tree valued for its hard, heavy, and strong wood, commonly used to make furniture, paneling, flooring, and veneer. It is also used for gunstocks, tool handles, plywood dies, cutting blocks, woodenware, novelty products, sporting goods, bowling pins, and musical instruments.

White-tailed deer, moose, and snowshoe hare commonly browse sugar maple. Red squirrel, gray squirrel, and flying squirrels feed on the seeds, buds, twigs, and leaves. Porcupines consume the bark and can girdle the upper stem. Songbirds, woodpeckers, and cavity nesters nest in sugar maple. Although the flowers appear to be wind-pollinated, the early-produced pollen may be important to the biology of bees and other pollen-dependent insects because many insects, especially bees, visit the flowers.

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: Maple Family (Aceraceae). A native tree with a dense, spreading crown, to 25-37(-40) m in height; bark light gray to gray-brown, rough, deeply furrowed, and darker with age. The leaves are deciduous, opposite, long-petioled, blades 5-11 cm long and about as wide, with 5 shallow, blunt or short-pointed lobes, edges coarsely toothed, dark green and glabrous above, whitish and more or less hairy below, turning intensely red, orange, or yellow in fall. The flowers are small, greenish-yellow, in long-stalked, drooping clusters or racemes, each cluster with 8 to 14 flowers. Most trees are either male or female (the species is essentially dioecious), but both kinds of flowers occur on some trees (technically monoecious), sometimes segregated on different branches. The fruits are winged nutlets (samaras) in a pair, 2-2.5 cm long, clustered on long

stalks, red to red-brown. The common name refers to the use of the species for making sugar and syrup.

Variation within the species: Closely similar forms of sugar maple have been recognized at various taxonomic ranks – from varieties to subspecies and species. Three of them are now generally recognized as species, but the differences are technical and it is difficult to be sure of the correct identifications of trees sold as "sugar maple" in the southeastern US. Duncan and Duncan (1988) gives a good summary of the distribution and morphology of these species.

- Florida maple (*A. barbatum*, including *A. floridanum*): primarily a species of the Gulf and southeast Atlantic coastal plain, from Texas to North Carolina and Virginia, and up the Mississippi valley as far as Missouri and Illinois.

- chalk maple (*A. leucoderme*): similar in distribution to Florida maple, but not extending into Virginia or up the Mississippi valley.

- black maple (*A. nigrum*): similar in distribution to 'true' sugar maple, but somewhat more restricted.

Norway maple (*Acer platanoides*), an introduced European species, is often planted and looks similar to sugar maple, but Norway maple has broader leaves with drooping lobes, and sap from a broken petiole is milky.

Distribution: Sugar maple is widespread in mixed hardwood forests of the eastern United States. It grows from Nova Scotia and New Brunswick westward to Ontario and Manitoba, North Dakota and South Dakota, southward into eastern Kansas into Oklahoma, and southward in the east through New England to Georgia. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation
Sugar maple most commonly occurs in rich, mesic woods but also grows in drier upland woods. It often grows in canyons, ravines, valleys, stream terraces, and streambanks, but it is occasionally found on dry rocky hillsides, at 500-1700 meters elevation. It is a dominant or codominant in many northern hardwood and mixed mesophytic forests. Common codominants include beech (*Fagus grandifolia*), birch (*Betula* spp.), American basswood (*Tilia americana*), northern red oak (*Quercus rubra*), white oak (*Quercus alba*), and yellow poplar (*Liriodendron tulifera*), but it also grows with various other hardwood species as well as conifers such as pine, spruce, fir, and eastern hemlock.

In the absence of disturbance, forests of jack pine, eastern white pine, eastern hemlock, yellow birch, or red pine are replaced by sugar maple and American basswood. Because repeated disturbance by fire was common in eastern deciduous forests in pre-settlement times, succession to sugar maple-American basswood stands may have taken as long as 650 years in some locations. Increases in sugar maple during the past 50 years in central and Great Lakes hardwood forests have been attributed to fire suppression.

This species flowers in April-June, with fruiting occurring in June-October. Fruits ripen about 12-16 weeks after flowering and begin to fall about 2 weeks after ripening. Leaves generally drop just after seeds have fallen. At the southern edge of the species' range, dead leaves tend to remain on the trees through much of the winter.

Establishment
Minimum seed-bearing age for sugar maple is 30-40 years; maximum seed production is reached after about 60 years of age. Seed is abundantly produced each year but peaks occur mostly from 2-5 years. Seeds are dispersed in fall and germinate in spring. Germination occurs on moist mineral soil or in the litter layer, at an optimal temperature of about 1° C. Seeds can remain viable for up to 5 years but few persist in the seed bank for more than one year. Sugar maple seeds require moist stratification at temperatures slightly above freezing for 35-90 days.

Sugar maple is shade-tolerant but seedlings in dense young stands may survive for only 5 years; those in older stands commonly persist for many years. Such a bank of abundant seedlings and saplings can remain suppressed until gaps are created by windfall or other disturbances, where they typically respond vigorously and rapidly to release. Sugar maples can live for up to 500 years.

Stump sprouting and root sprouting are moderately common means of vegetative reproduction after mechanical disturbance in natural conditions, especially in the northern part of its range, and layering occasionally occurs.

Management
Sugar maples are not particularly good street trees, because they are intolerant of compacted soil, high heat, air pollution, and road salt commonly found in urban environments. They are susceptible to stem

and root injury, and verticillum wilt may occur when grown in heavy, poorly drained soils. "Maple decline," periodic die-backs of relatively large trees in the Northeast, has been attributed to acid rain and other air pollutants, particularly in the last two decades, but its exact causes are not understood.

Even light ground fires may damage the thin bark of sugar maple. Hot fires can kill an entire stand and existing regeneration. The trees sprout poorly after fire. Although communities with sugar maple are relatively resistant to ground fires, a fire hazard may occur in dry years during October, after the leaves have fallen.

Seed can propagate sugar maple; early spring plantings generally produce the best results. Nurserymen usually rely on budding or grafting or sometimes use air layering or rooting of stem cuttings. Use stem tips 35-55 centimeters long taken in mid June with fully elongated bottom leaves; rooting occurs in 4-6 weeks under mist in a 2:1:1 mixture of sandy loam, vermiculite, and peat moss.

Cultivars, Improved and Selected Materials (and area of origin)
This species is readily available through local nursuries.

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Prepared By
Guy Nesom, BONAP, North Carolina Botanical Garden, University of North Carolina, Chapel Hill, North Carolina

Species Coordinator
Lincoln Moore, USDA NRCS National Plant Data Center, Baton Rouge, Louisiana

Edited: 17jan01 jsp; 07feb03ahv; 24may06jsp

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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Plant Fact Sheet

RED MAPLE

Acer rubrum L.

Plant Symbol = ACRU

Contributed by: USDA NRCS New York State Office

Alternative Names
swamp maple

Uses
Erosion control: Red maple is available in quantity for revegetation work and landscaping. It is a valuable riparian buffer plant due mostly to it's tolerance of wetter soils.

Wildlife: Red maple seeds provide food for squirrels and some birds. The species is not preferred by deer as a browse source, so in heavy deer pressure this species is over abundant in forest regeneration.

Wood: The wood is not desirable for lumber or veneer.

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
Acer rubrum L., red maple, is a wide-ranging native tree that is very well adapted to most soil and site conditions. This species is one of the early harbingers of fall as it turns color well in advance of other eastern deciduous trees, especially when it is located in wet sites. The fiery colors of fall are typically a brilliant red. Conversely, it is also one of the earliest flowering trees in the spring. Red maple has the smallest winged seeds (samaras) of all native maples, about 5/8-3/4 inches long. Also, the samaras ripen in the spring- a trait shared only with silver maple which has much larger samaras. This maple is a medium sized tree with fairly rapid growth (2-5 ft/yr), but not as fast as the much larger growing silver maple.

Adaptation and Distribution
Red maple is adapted to wet sites where it associates with black ash, cottonwood, and black gum. Some forested wetlands are referred to as maple swamps due to their stands of red maple. However, red maple is also well adapted to well drained but moist soils of upland sites where its companions are sugar maple, beech, black cherry and the birches. This capability makes this species a common tree in home landscapes where the fall colors can be displayed. The range of red maple extends from Florida to the Maritimes and west to Texas and Minnesota. Red maple is shade tolerant.

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

Establishment
Red maple seed is easily germinated in nature or in nurseries. The seed can be direct planted with no pre-treatment. The seedlings have moderately fast growth and are usually outplanted as 1 year old or 2 year old bareroot stock.

Management
Red maple seedlings must be protected from fire and livestock, and are greatly aided where weed and grass

competition is controlled. This is particularly true in any plantings where grass sod is the cover between trees. Weed control mulch or fabric, or herbicide treatments are recommended for the first three years or longer.

Pests and Potential Problems

Few pests seriously bother red maple, although the Asian long-horned beetle is a dire threat to the species if eradication efforts fail.

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

There are many selections in the horticultural trade that have mostly been selected for a growth form oddity. These are not recommended for riparian buffer use, rather the typical growth form is preferred. Purchasing stock of known origin will aid in assuring adaptation, and nurseries should be willing to provide this information.

Prepared By & Species Coordinator:

John Dickerson, retired
USDA NRCS New York State Office
Syracuse, New York

Edited: 31Jan2002 JLK; 24may06jsp

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>

Acer rubrum (Red maple, Scarlet maple, Swamp maple)

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

Botanical Name: *Acer rubrum* AY-sir ROO-brum **Common Name:** Red maple, Scarlet maple, Swamp maple

Genus: *Acer*

This tree has lobed leaves that are green on top and gray-white beneath. It turns bright red in autumn. Its form can be round to open-headed.

Care: Grow in slightly acidic soil for best fall coloration.

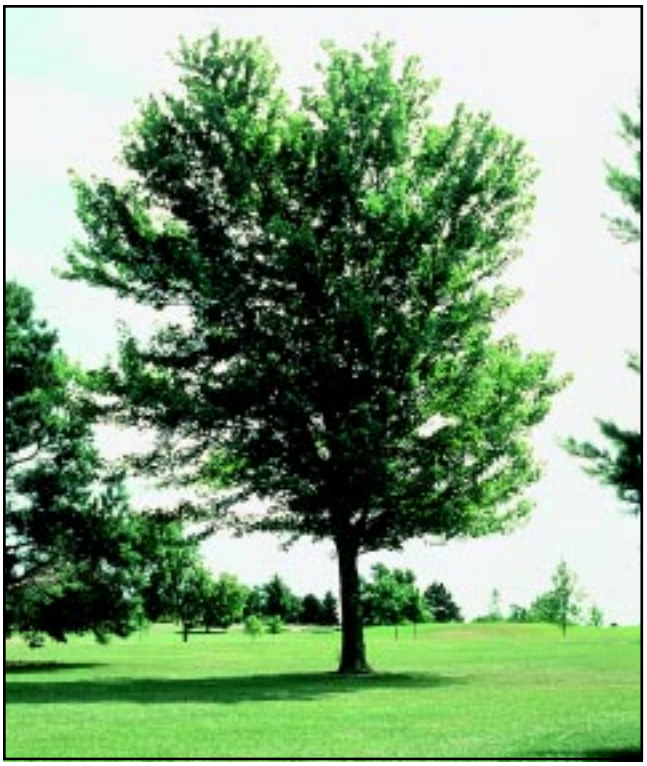
Propagation: Sow seeds in container or in situ. Graft in late winter; bud in late summer.

Problems: Aphids, scale, and caterpillars. Mites can cause leaf spot gall in several species. Fungal leaf spots and root rots are common.

Height	Over 30 ft.
Spread	Over 30 ft.
Growth Pace	Moderate Grower
Light	Full Sun to Part Shade
Moisture	Adaptable
Maintenance	Low
Characteristics	Native; Showy Foliage
Uses	Specimen Plant/ Focal Point
Style	Woodland Garden
Seasonal Interest	Summer Interest, Fall Interest
Type	Trees

Taken from: www.finegardening.com

Silver Maple



Silver Maple (*Acer saccharinum*)

General Description

A medium to large tree with spreading branches forming a variably rounded to informally spreading crown. A fast-growing tree subject to iron and manganese chlorosis on high pH soils which may cause dieback or eventual death. Often called soft maple because the wood is the softest of the maples used for lumber. The largest tree in North Dakota is 66 feet tall with a canopy spread of 72 feet.

Leaves and Buds

Bud Arrangement - Opposite.

Bud Color - Red to reddish-brown; male flattened, ovoid; female clustered.

Bud Size - 1/8 inch long.

Leaf Type and Shape - Simple, five-lobed with deep sinuses.

Leaf Margins - Ends of lobes sometimes deeply and doubly-acuminate lobed.

Leaf Surface - Smooth, glabrescent below.

Leaf Length - 3 to 6 inches.

Leaf Width - 2½ to 5 inches.

Leaf Color - Medium-green above, silver-white beneath; yellow fall color.

Flowers and Fruits

Flower Type - Borne in dense clusters.

Flower Color - Greenish-yellow to deep orangish.

Fruit Type - Double-winged samara (schizocarp).

Fruit Color - Brownish-tan.

Form

Growth Habit - Upright with strong spreading branches, with semi-pendulous branches which turn up at the ends.

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

Crown Height - 40 to 65 feet.

Crown Width - 30 to 50 feet.

Bark Color - Gray to gray-brown.

Root System - Shallow, vigorous, grass-feeding root system can cause sidewalks to heave and buckle.

Environmental Requirements

Soils

Soil Texture - Performs poorly on tight clay soils.

Soil pH - 4.5 to 7.0. Not adapted to saline/alkaline soils.

Windbreak Suitability Group - 1, 3.

Cold Hardiness

USDA Zone 3.

Water

Susceptibility to drought, winter stem dieback, sunscald injury and chlorosis affected by genetic variability and original seed source.

Light

Full sun.

Uses

Conservation/Windbreaks

Tall tree for farmstead windbreaks and riparian plantings in eastern third of North Dakota.

Wildlife

Browsed by deer and rabbits, seeds eaten by squirrels, fair cover for songbirds.

Agroforestry Products

Wood - Rough lumber, furniture and firewood. Pulpwood production. Twigs boiled to make a black dye by Native Americans.

Food - Sap may be used for maple syrup.

Medicinal - Extracts of some *Acer* species are used in cancer research.

Urban/Recreational

Useful in parks and large landscape areas with moist soils. Not recommended for streets because of high maintenance from limb breakage.

Cultivated Varieties

Beebe, Skinner and Wier's Cutleaf Maples (*Acer saccharinum* 'Beebe, 'Skinner' and 'Wieri') - Three cultivars with cutleaf foliage, slightly thinner stems and semi-pendulous branches.

Blair Maple (*A. saccharinum* 'Blair') - Reported to be stronger branched.

Northline Maple (*A. saccharinum* 'Northline') - Hardier selection introduced at the Morden Research Station, Manitoba.

Silver Cloud Maple (*A. saccharinum* 'Silver Cloud'). New hardy introduction from Manitoba; more compact and upright than 'Northline.'

Silver Queen Maple (*A. saccharinum* 'Silver Queen') - More upright in habit than the species and reported to be essentially seedless.

Related Species

Black Maple (*A. saccharum* var. *nigrum*) - Hardy, including cultivar 'Green Column'.

Boxelder (*Acer negundo*)

Norway Maple (*A. platanoides)* and cultivars - Borderline to non-hardy.

Sugar Maple (*A. saccharum*) - Hardy, but prefers neutral to acid soil pH's and adequate moisture.

Pests

Very subject to iron and manganese chlorosis in alkaline soils. Sensitive to phenoxy herbicides. Extracts of some *Acer* species exhibit toxic affects on insect pests.

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Plant Fact Sheet

SILVER MAPLE

Acer saccharinum L.

Plant Symbol = ACSA2

Contributed by: Kansas State University Forestry Research and USDA NRCS Plant Materials Center Manhattan, Kansas

Figure 1 Silver maple foliage.
Photo by Paul Wray, Iowa State University

Alternate Names
soft maple, silverleaf maple, white maple, river maple, swamp maple, water maple

Uses

Biofuels: The species is one of only a few that has the growth rate for serious consideration for biofuel production. Though shrub willow and poplar hybrids are currently receiving greater attention, silver maple has been tested for this use in the Midwest.

Forest Buffers: Silver maple is ideal for riparian forest buffer installations due to its common presence in such sites. It should be planted because of its rapid growth and early maturity. Where silver maple is present in nearby stands, it should not be planted because it produces a prolific quantity of seed. In any planting, it is preferred over box elder.

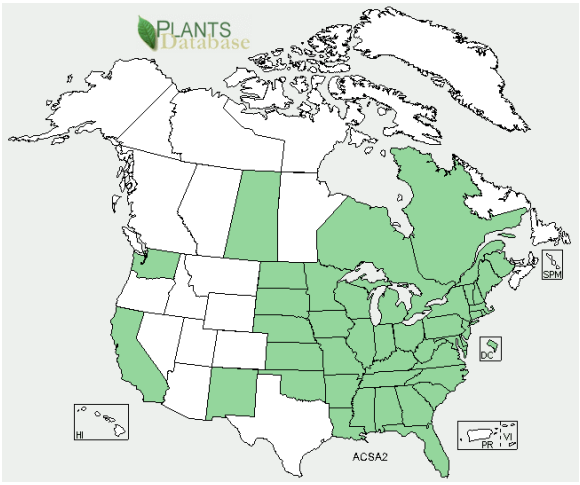
Ornamental: Its use should be limited as it becomes a liability with age.

Wildlife: Silver maple is not notable for its attractiveness to wildlife, but as a source of fast shading, large woody debris, and litter in streams the species has few rivals. It seems to be a preferred nesting species for Baltimore orioles.

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 and Adaptation
Acer saccharinum L., silver maple is one of the fastest growing deciduous trees of the eastern and mid-western forests. It can grow 3-7 feet per year. Silver maple shares many of its sites with red maple, but the two species are easily distinguished. Silver maple is typically a much larger tree with a much larger fruit (called a samara), but the two species are the only native maples with spring seed dispersal. The leaves of silver maple are often larger and more deeply fissured between lobes than those of red maple. Leaves are simple, opposite, deciduous, deeply lobed, narrow, and angled.

Silver maple is adapted wherever adequate moisture is assured, but grows best on well drained but moist river bottom soils. It cannot generally compete with other species in an upland environment (Gabriel 2009). The brittle nature of its wood limits the longevity of the species where high winds or heavy ice accumulations are common. As a pioneer species, silver maple is shade intolerant.



Silver maple distribution from USDA-NRCS-PLANTS Database.

Establishment
Silver maple is among the easiest of trees to establish from seed or transplants. Its rapid growth competes well with other plants, although grass and weed control will improve survival and allow for even

better growth. The seed germinates rapidly, and streambanks underneath mature trees are often covered with seedlings shortly after seed dispersal in the late spring, especially along the waterline. The rapid growth means that seedlings are almost always out-planted as 1-0 stock.

Management
In buffer plantings the only management needed is grass and weed control and livestock exclusion. Silver maple is not usually damaged by deer browsing, and is not a preferred target of gypsy moth caterpillars.

On sites where natural regeneration produces too many saplings thinning should be carried out to allow other species to survive.

Pests and Potential Problems
Like other maples, silver maple is susceptible to a wide range of insect and disease problems. Gray mold spot is a foliage disease. A host of root and trunk rots attack silver maple. Because of its brittle wood properties, it is highly susceptible to ice damage.

Cultivars, Improved, and Selected Materials (and area of origin)
There are 58 cultivars names listed on the U.S. National Cultivated Plants list.
A few horticultural selections may exist in the market, but for conservation plantings seedlings from regional wild sources should be utilized.

Prepared By:
Wayne A. Geyer, Professor
Forestry Division, Kansas State University
Manhattan, KS 66506

John Dickerson, retired
USDA NRCS, Plant Materials Specialist

John M. Row, Plant Materials Specialist
NRCS Plant Materials Center,
Manhattan, Kansas 66502

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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>

Tatarian Maple

Tatarian Maple *(Acer tataricum)*

General Description

A very tall shrub to small tree native to western Asia. Slightly larger in stature than Amur maple, but with slightly duller foliage and yellowish fall color. Attractive rosy-red seeds. The largest tree in North Dakota is 24 feet tall with a canopy spread of 27 feet.

Leaves and Buds

Bud Arrangement - Opposite.

Bud Color - Black-brown, imbricate.

Bud Size - Small, 1/8 to 1/4 inch.

Leaf Type and Shape - Simple, broadly-ovate, no prominent lobes as on Amur Maple.

Leaf Margins - Irregularly doubly-serrate.

Leaf Surface - Slightly crinkled leaves, glabrous above, glabrescent beneath.

Leaf Length - 2 to 4 inches.

Leaf Width - 2 to 3 inches.

Leaf Color - Leaves dull to dark green; yellow in autumn.

Flowers and Fruits

Flower Type - Borne in 2 to 3 inch long panicles.

Flower Color - Greenish-white.

Fruit Type - Paired samaras (schizocarp).

Fruit Color - Rosy-red, variable in intensity, showy.

Form

Growth Habit - Multi-stemmed, rounded in outline.

Texture - Medium, summer; medium, winter.

Crown Height - 18 to 30 feet.

Crown Width - 15 to 25 feet.

Bark Color - Brown, glabrous, lenticeled.

Root System - Somewhat shallow.

Environmental Requirements

Soils

Soil Texture - Adaptable to a variety of soils.

Soil pH - 4.5 to 7.5. Reported to have better alkaline tolerance than Amur Maple.

Windbreak Suitability Group - 1, 3, 5.

Cold Hardiness

USDA Zone 2.

Water

Prefers moist well-drained soils. Moderately drought tolerant.

Light

Full sun to partial shade.

Uses

Conservation/Windbreaks

Large shrub or small tree for farmstead windbreaks, and riparian plantings.

Wildlife

Browsed by deer and rabbits. Seeds eaten by squirrels. Fair cover for songbirds.

Agroforestry Products

Wood - Hobby uses and/or firewood.

Medicinal - Extracts of some *Acer* species are used in cancer research and as an astringent.

Urban/Recreational

Useful in home landscapes, borders, and parks.

Cultivated Varieties

Red Tatarian Maple (*Acer tataricum* 'Rubrum') - Red fall color.

Related Species

Amur Maple (*Acer ginnala*)

Hybrid Maple - (*A. ginnala* x *A. tataricum*) - Many Amur Maple plants sold commercially exhibit intermediate characteristics and appear to be hybrids between these two species.

Pests

No major pest problems. Extracts of various *Acer* species have been toxic to insect pests.