

Siberian Elm



SIBERIAN ELM

Ulmus pumila L.

Plant Symbol = ULPU

Contributed by: USDA NRCS National Plant Data Center



Herman, D.E. et al. 1996
North Dakota Tree Handbook

Caution: This plant may become invasive.

Alternate names

Chinese elm, dwarf elm, Asiatic elm

Uses

Ethnobotanic: The inner bark of Siberian elm was dried and ground into a powder for thickening soups or adding to cereal flours in bread making. Immature fruit was used to produce sauce and wine (Facciola, 1990) and the wood was used for agricultural implements and boat making (Vines, 1987).

Agroforestry: Siberian elm is planted and managed in tree strips as windbreaks to protect livestock, enhance crop production, and control soil erosion. Windbreaks also function to shelter home buildings against harsh weather conditions and help reduce home heating and cooling costs.

Landscape: Siberian elm has limited ornamental value (Dirr, 1990), although it has been used in the Midwest for shade along boulevards and in parks.

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.

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

General: Elm Family (Ulmaceae). Siberian elm is an introduced, fast-growing tree, from 50 to 70 feet in height. Its leaves are alternate, oblong in shape, 1 to 3 inches long, and usually have serrate (saw-toothed) margins. The flowers are greenish and clustered with short pedicels, and appear with or before the leaves from March through April (Vines, 1960). The bark is a light gray-brown with irregular furrows and is often streaked with stains caused by bacterial wetwood. The fruit, a samara, ripens from April to May, and consists of a dry, compressed nutlet surrounded by a thin, membranous wing (Ibid.).

Adaptation and Distribution

Siberian elm, an extremely hardy tree, is native to northern China, eastern Siberia, Manchuria, and Korea. It was introduced to the United States in the 1860s and can be found on dry sites as well as along moist stream banks, in pastures and on grasslands. This species prefers well-drained, fertile soil and full sun, however, it is highly adaptable and easily tolerates, even thrives in, a variety of conditions such as poor, dry soils, cold winters and long periods of summer drought. Siberian elm has invaded mesic, dry, and sand prairies.

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

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/>>

Establishment

Propagation by seed: Siberian elm seeds do not need pretreatment and should be sown as soon as ripe in the spring. Excessive drying and dewing will reduce viability, though the seeds may be stored at 36-40° F for up to 8 years if moisture content is kept at 3-8% (Dirr and Heuser, 1987). Seeds are sown in a cold frame, 12 to 20 per linear foot, in rows ten inches apart, and covered with ¼ inch of firmed soil. The seedbeds should be kept moist and not overly shaded. When the seedlings are large enough to handle, they are transplanted to individual pots and grown in a greenhouse for the first winter. Siberian elm seedlings are outplanted into their permanent positions in late spring or early summer the following year. Seedlings should not be held in a nursery bed for more than two years because they will develop a taproot that makes lifting difficult and reduces outplanting survival rates.

Management

Rosendahl, 1955, noted that some Siberian elm plantings in the Upper Midwest were unsuccessful because seed was collected in climatically different geographical areas of the species range and had varying levels of winter hardiness. Siberian elm may become weedy and require removal.

Pests and Potential Problems

Siberian elm is resistant to Dutch elm disease and phloem necrosis and has been used to breed resistance into elm hybrids (Dirr, 1990). Leaf damage from elm leaf beetle has been noted in the south. (Ibid.)

Environmental Concerns

This species has been declared invasive in New Mexico.

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

Siberian elm plant materials are readily available through commercial sources.

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 the 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.

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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>>

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Siberian elm

Ulmus pumila



Growth Form: irregular
Crown Density: moderate
Size: to 40 feet high
30-40 foot spread
Drought Resistance: excellent
Cold Hardiness: excellent
Growth Rate: rapid
Life Span: moderate
Elevational Range: to 8,000 feet
Soil Conditions: tolerates alkaline well
Possible Insect Problems: elm leaf beetle
Possible Disease Problems: bacterial wetwood
Wildlife Value: moderate: song and game birds (seeds and buds)
Seasonal Color: not conspicuous
Miscellany: hardiest of all elms; can be weedy



Taken from: Trees for Conservation, a buyer's guide, Colorado State Forest Service

Siberian Elm

(*Ulmus pumila*)

General Description

A very hardy, fast growing tree with brittle wood which is subject to breakage. Extremely susceptible to insect, disease, and herbicide damage, which makes it an undesirable tree. Often confused with Chinese elm (*Ulmus parvifolia*) which is not hardy in North Dakota. The largest tree in North Dakota is 60 feet tall with a canopy spread of 55 feet.

Leaves and Buds

Bud Arrangement - Alternate.

Bud Color - Blackish-brown with ciliate hairs along the edge of bud scales.

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

Leaf Type and Shape - Simple, unequal at base, elliptic to elliptic-lanceolate.

Leaf Margins - Nearly simply-serrate.

Leaf Surface - Smooth above, glabrous beneath or slightly pubescent when young.

Leaf Length - 3/4 to 3 inches.

Leaf Width - 1/3 to 1 inch.

Leaf Color - Dark green.

Flowers and Fruits

Flower Type - Polygamo-monoecious.

Flower Color - Greenish-red to brown.

Fruit Type - Round winged samara, with the seed in the center of the samara.

Fruit Color - Brownish-tan.

Form

Growth Habit - The habit is rather open, with several large ascending branches with flexible, brittle, pendulous branchlets.

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

Crown Height - 25 to 50 feet.

Crown Width - 20 to 40 feet.

Bark Color - Light gray to gray-brown.

Root System - Spreading.

Environmental Requirements

Soils

Soil Texture - Adapted to almost any soil texture.

Soil pH - 5.5 to 8.0. Exhibits alkaline and saline tolerance.

Windbreak Suitability Group - 1, 1K, 3, 4, 4C, 5, 6D, 6G, 8, 9C, 9L.

Cold Hardiness

USDA Zone 3.

Water

Drought tolerant. Does not withstand ponding.

Light

Full sun to partial shade.

Uses

Conservation/Windbreaks

Medium to tall tree for farmstead and field windbreaks.

Wildlife

Mostly used for nesting sites in windbreaks.

Agroforestry Products

Wood - Firewood, but difficult to harvest.

Medicinal - Some *Ulmus* species were used for inflammations, burns, cold sores, and wound treatments.

Urban/Recreational

A less desirable tree species due to dieback and short life, especially when exposed to phenoxy herbicides.

Cultivated Varieties

Ulmus pumila 'Dropmore' - A cultivar named in Manitoba of Harbin, Manchuria seed source.

Related Species

Chinese Elm (*Ulmus parvifolia*) and numerous cultivars - Not hardy in North Dakota.

Promising Dutch elm disease resistant hybrid elms from crosses of Siberian Elm (*U. pumila*) and Japanese Elm (*U. davidiana* var. *japonica*) e.g. Sapporo Autumn Gold Elm (*U. x* 'Sapporo Autumn Gold'), Cathedral Elm (*U. x* 'Cathedral'), New Horizon Elm (*U. x* 'New Horizon') and Vanguard Elm (*U. x* 'Vanguard').

Hybrid elms from crosses of Siberian Elm (*U. pumila*) and Slippery Elm (*U. rubra*), e.g. Green King Hybrid Elm (*U. x* 'Green King') also have good to excellent Dutch Elm disease resistance.

Pests

Common diseases include Tubercularia canker, Botryodiplodia canker and wetwood. Common insect pests include cankerworm. Very sensitive to phenoxy herbicides.