UF IFAS Extension UNIVERSITY of FLORIDA

ENH-809

Ulmus parvifolia: Chinese Elm[1]

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Introduction

An excellent tree that is surprisingly under-used, Chinese elm possesses many traits which make it ideal for a multitude of landscape uses. A fast-growing, deciduous or evergreen tree, Chinese elm forms a graceful, upright, rounded canopy of long, arching, and somewhat weeping branches which are clothed with one to two and a half-inch-long, shiny, dark green leaves. Some specimens grow in the typical vase-shaped elm form. In colder regions of the country in fall, leaves are transformed into various shades of red, purple, or yellow. The tree is evergreen in the southern extent of its range. The showy, exfoliating bark reveals random, mottled patterns of grey, green, orange, and brown, adding great textural and visual interest, especially to its winter silhouette. Chinese elm can reach 80 feet in height but is more often seen at 40 to 50 feet, making it an ideal shade, specimen, street, or parking lot tree. They look very nice planted in a grove or along a street.

General Information

Scientific name: *Ulmus parvifolia*
Pronunciation: UL-mus par-vih-FOLE-ee-uh
Common name(s): Chinese elm, lacebark elm
Family: *Ulmaceae*
USDA hardiness zones: 5B through 10A (Figure 2)
Origin: native to Japan, Korea, Taiwan, and north and central China
UF/IFAS Invasive Assessment Status: not considered a problem species at this time, may be recommended
Uses: sidewalk cutout (tree pit); reclamation; street without sidewalk; shade; specimen; parking lot island < 100 sq ft; parking lot island 100–200 sq ft; parking lot island > 200 sq ft; tree lawn 3–4 feet wide; tree lawn 4–6 feet wide; tree lawn > 6 ft wide; urban tolerant; highway median; bonsai

Figure 1. Full Form—*Ulmus parvifolia*: Chinese elm
Credits: Gitta Hasing

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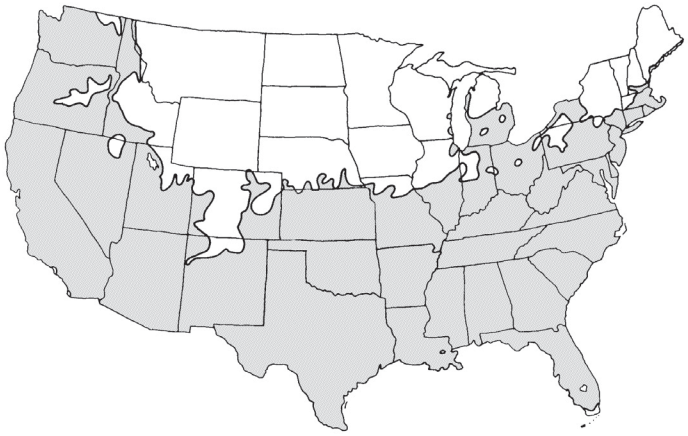

Figure 2. Range

Description

Height: 40 to 50 feet
Spread: 35 to 50 feet
Crown uniformity: irregular
Crown shape: vase, round
Crown density: moderate
Growth rate: moderate
Texture: fine

Foliage

Leaf arrangement: alternate
Leaf type: simple
Leaf margin: serrate, serrulate
Leaf shape: elliptic (oval), obovate, ovate
Leaf venation: pinnate
Leaf type and persistence: deciduous
Leaf blade length: 1 to 2½ inches
Leaf color: dark green and shiny on top, paler green underneath
Fall color: yellow, red, purple
Fall characteristic: showy

Figure 3. Leaf—*Ulmus parvifolia*: Chinese elm
Credits: Gitta Hasing

Flower

Flower color: light green
Flower characteristics: not showy; emerges in tight axillary clusters
Flowering: late spring

Fruit

Fruit shape: oblong, flattened, papery winged-samara
Fruit length: ½ inch
Fruit covering: dry or hard
Fruit color: light brown
Fruit characteristics: does not attract wildlife; not showy; fruit/leaves not a litter problem
Fruiting: fall

Figure 4. Fruit—*Ulmus parvifolia*: Chinese elm
Credits: Gary Kling

Trunk and Branches

Trunk/branches: branches droop; showy; typically multi-trunked; no thorns
Bark: mottled with olive green, brown, and tan, thinly flaking plates
Pruning requirement: needed for strong structure
Breakage: resistant
Current year twig color: gray, brown
Current year twig thickness: thin
Wood specific gravity: unknown

Culture

Light requirement: full sun to partial shade
Soil tolerances: sand; loam; clay; acidic; alkaline; well-drained to occasionally wet
Drought tolerance: high
Aerosol salt tolerance: moderate

Figure 5. Bark—*Ulmus parvifolia*: Chinese elm
Credits: Gitta Hasing

Other

Roots: not a problem
Winter interest: yes
Outstanding tree: yes
Ozone sensitivity: sensitive
Verticillium wilt susceptibility: susceptible
Pest resistance: resistant to pests/diseases

Use and Management

Select trees with branches spaced along one trunk. It is not essential that this trunk be straight. Buy from nurseries who understand how to train and prune this tree for street and parking lot use, otherwise you may be trimming and pruning low drooping branches on a regular basis.

Trees which have a trunk less than about two inches in diameter often require staking and some early pruning to prevent leaning and blow over due to a heavy crown and unstable root system. Nursery operators often train trees to a single, straight trunk by staking at an early age. Leave branches on the lower trunk during this training period to encourage caliper development on the lower trunk. Older trees look nice with an occasional light thinning to show off the wonderful trunk and branch structure.

Please do not confuse it with *Ulmus pumila*, the Siberian elm. Siberian elm is far inferior to Chinese elm and should not be planted, except perhaps in extreme climates such as the drier parts of the Midwest where the limits of most other trees are tested.

Chinese elm is sometimes topped in the nursery to create a full head of foliage, and branches originate from one point on the trunk. There is not enough room on the trunk to support this type of branch structure, and some may split out from the tree as it ages. This tree may take more effort to properly train and prune when young than some other species but it is well worth the effort. It will have a long service life in urban areas with proper training early on.

The root system is comprised of several very large-diameter roots which can grow to great distances from the trunk. These are usually located fairly close to the surface of the soil and can occasionally lift sidewalks. They can get into sewer lines causing damage. But they are usually not a problem and should not be cause to eliminate this tree from your urban tree planting program. This is among the top urban trees on most recommended tree lists in the South and Midwest. Occasionally, root suckers emerge from beneath the canopy and will require pruning.

Chinese elm will grow in full sun on a wide range of soils, adapting easily to extremes in pH (including alkaline) or moisture, and tolerates urban heat, and wind. Trees will look their best, though, when grown in moist, well-drained, fertile soil but they adapt to drought and the extremes of urban sites. Very suitable for street tree pits, parking lot islands, and other confined soil spaces.

Many cultivars are available for size and form: 'Catlin' is dwarf; 'Drake', USDA hardiness zones 7 to 9, has small, dark green leaves, sweeping, upright branches forming a rounded crown, and greater leaf retention being almost evergreen in California and Florida; 'Dynasty' has smooth, dark grey bark, smaller leaves and is vase-shaped, with red fall color in the north; 'Frosty' has a small (0.75-inch-long), white-margined leaf which may revert back to green; 'Emer I' has a dark green, fine-textured uniform crown comprised of ascending branches with bright orange, grey and brown exfoliating bark. It is a brand-new introduction and the parent tree is reportedly 50 years, 32 feet tall and 54 feet wide. 'Golden Rey' is reportedly hardy to USDA hardiness zone 6, is a moderate grower and may be denser and more compact than the species. This cultivar was selected for its yellow new foliage color which deepens to golden yellow in autumn. 'Pathfinder' has been extensively tested in Ohio for 30 years (USDA hardiness zone 5a). It has a single trunk with broad, upright branches and grows at a moderate height. Bark is nicely exfoliating, fall color is a rich red and this National Arboretum/Ohio Research Site introduction

tolerates wet and dry soil. A good tree for tough sites; 'Sempervirens (Pendens)' is more round-headed, weeping and spreading with persistent foliage, almost evergreen in USDA hardiness zones 8b through 10; and 'True Green' has glossy, deep green leaves, a graceful, round-headed outline, and tends to be evergreen.

Propagation is by seed, summer cuttings, or grafts.

Pests

This elm's pests are borers and chewing insects. It shows considerable resistance to elm leaf beetle and Japanese beetle.

Diseases

It is usually resistant to Dutch elm disease and phloem necrosis. Cankers may develop on young trunks where soil is excessively wet. These occur on nursery and landscape trees. The causal agent has not been identified but theories abound. Twig blight can be an occasional problem.

Reference

Koeser, A. K., Hasing, G., Friedman, M. H., and Irving, R. B. 2015. Trees: North & Central Florida. Gainesville: University of Florida Institute of Food and Agricultural Sciences.