

Street Tree Alternatives to Ash Trees: Commercially Available Species and Cultivars

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Santamour (1990) established guidelines for tree planting within a city:

Plant no more than 30% of a family: i.e. Aceraceae

Plant no more than 20% of a genus: i.e. *Acer* × *freemanii*, *Acer rubrum*, *Acer platanoides*, *Acer saccharum*, etc.

Plant no more than 10% of a species: i.e. *Acer platanoides*

Large to medium-sized Street/Urban Trees

* ***Acer* × *freemanii***: Freeman maple, Zone 3b-4 (depends on cultivar), native hybrid of red and silver maple, oval to rounded form, ascending branches, 40-60' tall, 35-40' wide, moderate to fast growth rate, yellow, orange to red fall color, smooth, light gray bark when young, red samaras in spring, not fall, adaptable to most soils and pH, some cultivars can get chlorotic at very high pH, tolerant to wet soils, drought and urban conditions, moderate salt tolerance, can get verticillium wilt and leaf hoppers, some cultivars prone to included bark formation and narrow branch crotch angles and will need training pruning when young, dioecious (separate male and female flowers produced on separate plants)

'Armstrong': narrow, fastigate form, 45' tall, 15' wide, yellow fall color, female, produces seeds

'Celzam' (Celebration[®]): upright to oval form, 45' tall, 25-30' wide, better branch angles and straight central leader, yellow fall color, fast grower, male, seedless, drought tolerant

'DTR 102' (Autumn Fantasy[®]): broadly oval form, upright branches, 50' tall, 40' wide, bright to dark red fall color, female, produces seeds

'Indian Summer' or 'Morgan': broadly oval to rounded form, 45' tall, 40' wide, early, bright rosy-red fall color, vigorous, female, produces seeds, very sensitive to flooded soils

'Jeffersred' (Autumn Blaze[®]): broadly oval form with upright branches, 50' tall, 40' wide, bright orange-red to red fall color that is longer lasting, male, seedless, drought tolerant, tends to develop narrow crotch angles, included bark, and multiple leaders

'Marmo': upright, oval form, 55' tall, 45' wide, early, fair, mottled blend of deep red and green fall color starts at leaf tips and gradually works its way down leaf, good branching with straight central leader, male, seedless, slower grower

'Scarsen' (Scarlet Sentinel[®]): upright form becoming oval, 40' tall, 20' wide, yellow-orange to orange-red fall color, fast grower, male, seedless

'Sienna' (Sienna Glen[®]): pyramidal form, 50' tall, 35' wide, rusty orange to burgundy fall color, male, seedless, wider branch angles, from northern seed source, less susceptible to frost crack, hardy to zone 3

Acer miyabei: Miyabe maple, Zone 4a, native to Japan

'Morton' (State Street[®]), 40' tall, 25' wide, upright, oval form, dark green foliage, late, yellow fall color, corky-looking bark, faster grower, grafted higher up than straight species for street tree clearance, very adaptable to soils and pH, urban tolerant, moderate salt tolerance, not invasive, no pests

† ***Acer platanoides***: Norway maple, Zone 4b, native to Europe, wide-spreading, rounded, dense form, 40-50' tall, 35-40' wide, dark green, large leaves, late, yellow fall color, adaptable to most soils and pH, easy to transplant, will not tolerate wet soils, salt and urban tolerant, susceptible to verticillium wilt, girdling roots, basal rot, leaf scorch, frost crack, very invasive, do not use near any natural area, shallow roots

'Cleveland': upright, oval, dense form, fast grower, 40' tall, 30' wide, older cultivar

'Columnarobroad' (Parkway[®]): oval form with straight central leader, broader and faster growing than 'Columnare', 40' tall, 25' wide

'Columnare': upright, narrow-columnar form, ascending branches, 40' tall, 15' wide
 'Conzam' (Conquest™): narrow oval form, 40' tall, 20' wide, maroon-red leaves in spring turn bronzish
 'Crimson King': older cultivar, oval becoming rounded, dark purple leaves all season, 40' tall, 35' wide, slower growing, hardy only to zone 5a
 'Crimson Sentry': but sport off of 'Crimson King', dense, compact, pyramidal to oval form, deep purple leaves all season, 35' tall, 15' wide
 'Deborah': common, broadly oval to rounded, reddish-purple leaves in spring turn dark green, 40-60' tall, 40' wide, straight leader
 'Drummondii': variegated leaves with white margins, reverts readily to all green leaves, rounded to broadly oval form, 30-40' tall, 25' wide, slow grower, tends to scorch in hot sun and drought
 'Ezestre' (Easy Street™): pyramidal to narrow oval form, 40' tall, 20' wide, faster grower
 'Fairview': narrow, upright-oval form, reddish purple leaves in spring turn bronzish, 45' tall, 35' wide
 'Globosum': dense, globular form, 15-20' tall, 18' wide, slow grower, formal looking
 'Jade Glen': broad, rounded, open form, 45' tall, 40' wide, faster growing, says it is verticillium wilt resistant but it is not
 'McGill No. 42' (Emerald Queen®): dense, oval to rounded form with upright, spreading branches, deep green, glossy leaves, 50' tall, 40' wide, good branch pattern, straight trunk
 'National 2000' (Champtree™): upright spreading to broadly oval form, 50-60' tall, 40' wide
 'Pond' (Emerald Lustre®): upright, spreading to rounded form, 45' tall, 40' wide, faster grower, good branching
 'Princeton Gold': oval form, bright yellow leaves in spring that turn bright green, bright yellow fall color, 35' tall, 30' wide
 'Royal Red': more cold hardy version of 'Crimson King', deep maroon leaves during growing season, oval to rounded form, 40' tall, 30' wide
 'Schwedleri': bronzy-purple leaves in spring fade to dark green, broad-rounded form, 40' tall, 30' wide, older cultivar, not recommended, has multiple leaders and twisted look to trunk, prone to frost crack
 'Summershade': broad, rounded form, lighter green leaves, 40-50' tall, 40' wide, fast grower, heat tolerant, leathery leaves are scorch resistant
 'Superform': broadly oval to rounded form, 45' tall, 40' wide, fast grower, uniform habit

* **Acer rubrum**: red maple (in acidic soils (pH below 7) only or else very chlorotic), hardy to zone 3b-5b (depends on cultivar), native to eastern and central U.S., Canada, and Wisconsin, oval to rounded to irregular form, 40-60' tall, 25-35' wide, moderate to fast grower, yellow, orange to bright red fall color, smooth, light gray bark when young, reddish flowers in early spring, red samaras in spring, not fall, dioecious (separate male and female flowers produced on separate plants), adaptable to most soils, requires acid pH or else develops serious chlorosis due to lack of manganese, not iron, easy to transplant, tolerant to wet soils (some cultivars), sensitive to salt and air pollution and drought, susceptible to verticillium wilt, leaf hoppers, frost crack, girdling roots, prone to included bark formation and narrow, branch crotch angles, shallow roots

Autumn Flame®: dense, rounded with spreading branches, 40' tall, 35' wide, early, bright red fall color, male, seedless, slower grower
 Autumn Radiance®: rounded, open, symmetrical form, 60' tall, 40' wide, early red-orange fall color
 'Autumn Spire': narrow to oval form, 40-50' tall, 30' wide, bright red fall color, male, seedless, from a northern seed source, newer cultivar, Zone 3
 'Bailcraig' (Scarlet Jewel™): upright form, 60' tall, 30' wide, early, deep crimson-red fall color, from a northern seed source, Zone 3, new cultivar
 'Bowhall': upright, very narrow form, 40-50' tall, 15' wide, yellowish-orange to reddish fall color, female, produces seed, prone to included bark formation
 'Brandywine': oval form 40' tall, 30' wide, deep red fall color for a longer period, male, seedless, newer cultivar
 Fairview Flame™: good branching, 45' tall, fast growing, later, orange-red fall color
 'Frank Jr.' (Redpointe™): broadly pyramidal form, 45' tall, 30' wide, bright red fall color, faster growing, straight central leader, better branch crotch angles, new cultivar
 'Franksred' (Red Sunset®): upright, dense, oval form, symmetrical form, bright red to orange fall color, fast grower, 45-50' tall, 35' wide, female, produces seeds, dark green, glossy leaves, older cultivar

Karpick[®]: narrow, oval, dense form, 40' tall, 20' wide, yellow to orange fall color, male, seedless, prone to included bark formation

'Magnificent Magenta' (Burgundy Belle[®]): oval to rounded form, 45' tall, 40' wide, bright red fall color that changes to burgundy, symmetrical form, heat tolerant, prone to leafhoppers and witches' broom

'New World': upright, narrow-oval form, 40' tall, 20' wide, orange-yellow to orange-red fall color, male, seedless

'Northwood': symmetrical, broadly oval to rounded form, ascending branches, 40' tall, 35' wide, early orange to reddish fall color, male, seedless, from a northern seed source, Zone 3

'Olson' (Northfire[®]): oval form, 50' tall, 35' wide, early, bright red fall color, northern seed source, Zone 3

'PNI 0268' (October Glory[®]): not hardy, zone 5b-6a, broadly oval to rounded form, 40' tall, 35' wide, red fall color for a longer period, female, produces seeds, old cultivar

'Polara' (Ruby Frost[™]): upright, dense, broad oval form, 45' tall, 40' wide, ruby-red fall color, selected in NW Wisconsin, Zone 3

'Red Rocket': narrow, columnar form, 35' tall, 8' wide, red fall color, northern seed source, tolerant to leaf hopper

'Schlesinger': broadly vase-shaped to rounded, 45' tall, 35' wide, very early orange to purplish-red fall color, female, produced seed

'Somerset': broadly oval to rounded form, 45' tall, 35' wide, red fall color, leaf hopper resistant newer cultivar

Summer Red[®]: dense, broad oval form, 20' tall, 10' wide, burgundy red new leaves that turn purplish-green, yellow to orange to purple fall color, leaf hopper resistant, Zone 5

'Sun Valley': oval, symmetrical form, densely branched, 40' tall, 35' wide, bright red fall color

Acer 'Warrenred': Pacific Sunset[®]: zone 4b, hybrid of Norway and Shantung maples, upright, oval to spreading form, good branching, 30-40' tall, 20-25' wide, glossy leaves, late yellow to bright orange-red fall color, heat, drought, and urban tolerant

***Celtis occidentalis**: common hackberry, zone 3b, native to eastern and central U.S., Canada, and Wisconsin, vase-shaped when young becoming rounded with drooping branches, moderate to fast growth rate, 50-70' tall, 40-60' wide, corky, warty looking bark, small, pea-sized, purplish-black fruit in fall, adaptable to most soils and pH, tolerates dry, sandy, rocky, and compact, heavy clay soils, slow to establish, plant in spring, drought, urban, wind, and wet soils tolerant, but sensitive to salt, susceptible to hackberry nipple gall on leaves, witches' brooming of twigs, resistant to DED, sensitive to Dicamba herbicides used near tree, branches tend to break in storms, prone to included bark formation, need to train to develop good branch structure

'Chicagoland': broad pyramidal form with upright branches, 55' tall, 40' wide, forms a straight central leader, rich green leaves, yellow fall color, warty bark

'Windy City': upright, spreading form, straight, central leader, fast grower

Corylus colurna: Turkish filbert, hardy to zone 4b, native to southeastern Europe and western Asia, broad, pyramidal form, formal looking even with age, dense, coarse texture, 40-50' tall, 20-25' wide, no fall color, scaly to corky, gray-brown bark, long, pendulous catkins in early spring are showy, may produce nuts, difficult to transplant, heat, urban, and drought tolerant, once established, sensitive to salt

Ginkgo biloba: ginkgo, maidenhair tree, hardy to zone 4b, native to eastern China, living fossil, found in fossil records dating back 150 million years ago, deciduous gymnosperm, pyramidal when young, becoming wide-spreading with age to upright, slow grower, 50-80' tall, 30-60' wide, very interesting, fan-shaped leaves, golden-yellow fall color, dioecious (separate male and female flowers produced on separate plants), female trees produce smelly, messy fruit, but not until 20 years old, so plant male cultivars only, tolerant to most soils and pH, prefers a sandy, deep soil, difficult to transplant, plant in spring, heat, salt, urban, and drought tolerant, no pests; will grow faster if you apply water and fertilizer at certain time of year (late spring?)

'Autumn Gold': broadly pyramidal, symmetrical form, 45' tall, 35' wide, golden yellow fall color, male, no fruit, good, uniform branching

'Fairmount': dense, upright, pyramidal form, straight central leader, male, no fruit

'Halka': broadly pyramidal becoming oval, 45' tall, 40' wide, bright yellow fall color, male, no fruit
 'Golden Globe': broad, rounded form, 60' tall, 40' wide, slightly faster growth rate, male, no fruit, dense form, golden yellow fall color, Zone 5
 'Magyar': upright form, 50' tall, 30' wide, bright yellow fall color, male, no fruit
 'PNI 22720' (Princeton Sentry[®]): narrow pyramidal, upright form, 50' tall, 20-30' wide, bright yellow fall color, male, no fruit
 'Saratoga': compact, dense, rounded form, with straight central leader, 20-30' tall, 15-20' wide, pendulous leaves, soft yellow fall color, slower and smaller than other ginkgos, male, no fruit
 'Shangri-La[®]': moderately pyramidal form, 45' tall, 25' wide, slightly faster growth rate, bright yellow fall color, male, no fruit
 'Windover Gold[®]': upright, oval form, 40-60' tall, 30-40' wide, golden yellow fall color, strong grower, male, no fruit
 'Woodstock' (Emperor[™]): uniform, oval form, strong, central leader, good branching, male, no fruit

* ***Gleditsia triacanthos var. inermis***: thornless honeylocust, hardy to zone 4a, native to central U.S. and southern Wisconsin (thorny type native, not var. *inermis*), fine texture, fast growing, vase-shaped form becoming flat-topped, spreading branches, open, 50-70' tall, 40-50' wide, early, bright golden-yellow fall color, no thorns, dioecious (separate male and female flowers produced on separate plants), female plants produce long, twisted, black pods that make a slippery, litter mess, tolerant to most soils and pH, tolerant to compacted, heavy clay soil, drought, salt, and urban tolerant, tolerant to periodic flooding, susceptible to leaf hoppers, plant bug, cankers, sunscald on trunk, high maintenance pruning, tends to develop co-dominant branches, can break in storms

'Christie' (Halka[™]): broad, oval to rounded form, 40' tall, 40' wide, horizontal branches, some pods, fast growing, yellowish fall color
 'Emerald Cascade': irregular, weeping form with pendulous branches, grafted, 16' tall, male, no pods
 'Harve' (Northern Acclaim[®]): symmetrical, upright, spreading form, 45' tall, 35' wide, yellow fall color, male, no pods, developed in North Dakota, hardy to zone 3b
 'Impcole' (Imperial[®]): rounded form, symmetrical, wide-spreading, with good branching, 35' tall, 35' wide, seedless but can throw a few pods, susceptible to leaf hoppers and plant bug
 'Moraine': uniform, rounded crown with vase-shaped branching, male, no pods, older cultivar
 'PNI 2835' (Shademaster[®]): vase-shaped to rounded, irregular form, 45' tall, 35' wide, uniform, ascending branches, occasionally, some trees may produce pods
 'Skycole' (Skyline[®]): broadly pyramidal form, ascending branches with wider crotch angles, 45' tall, 35' wide, develops a strong, central leader better than any other cultivar, male, no pods, bright golden yellow fall color
 'Suncole' (Sunburst[®]): irregular, oval form, 40' tall, 35' wide, 8" of new leaves are bright yellow then fades to green, yellowish fall color, susceptible to leaf hoppers, plant bug, and canker, male, no pods
 'True Shade[®]': broadly oval form, 40' tall, 35' wide, wider branch angles, yellow fall color, faster grower, male, no pods
 'Wandell' (Perfection[™]): develops a good crown at a younger age, 35' tall, 30' wide, dark green leaves, male, no pods

* ***Gymnocladus dioica***: Kentucky coffeetree, hardy to zone 4a, native to central U.S., southern Ontario, and Wisconsin (scattered distribution), vase-shaped form with upright branches becoming irregular and open, 50-75' tall, 40-50' wide, slow to moderate grower, coarse texture in winter with sparse branching when young, lacy texture when in leaf, yellow fall color, large, bluish-green leaves, ashy-gray, deeply furrowed bark with exfoliating plates, dioecious (separate male and female flowers produced on separate plants), females produce thick, sausage-like, pendulous pods, that can be a litter problem along with the leaf rachis in fall, adaptable to most soils and pH, slow to establish, tolerates compacted, heavy clay soil, salt, drought, periodic flooding, and urban conditions, no pests, can look a bit "gauntly" when young due to sparse branching; nurseries say the tree is hard to ship as it is very brittle when shipping and forms no central leader

'Espresso': oval to vase-shaped form with arching branches, 50' tall, 35' wide, large, blue-green leaves, yellowish fall color, male, no pods, newer cultivar
'J.C. McDaniel' (Prairie Titan™): oval to vase-shaped form, 50' tall, 35' wide, large, blue-green leaves, yellowish fall color, male, no pods, newer cultivar

***Phellodendron amurense* 'Macho'**: Macho Amur corktree, hardy to zone 3b, native to northern China and Japan, broadly vase-shape, upright form, 40' tall, 30' wide, ascending branches, thick, dark green leaves, yellowish-green fall color, male, no fruit, corky bark when older, adaptable to most soils and pH, slow to establish, urban tolerant, moderate salt tolerance, no pests, shallow roots, low branching, avoid female trees as they produce invasive seeds

***Phellodendron lavalleyi* 'Longenecker'**: Eyestopper™ Lavalley corktree, hardy to zone 4b, native to Japan, upright, wide spreading form, 40' tall, 35' wide, bright yellow fall color, male, no fruit, corky bark when older, same culture as Amur corktree

***Phellodendron sachalinense* 'His Majesty'**: His Majesty Sakhalin corktree, hardy to zone 3b, native to Korea, northern Japan, and western China, broadly vase-shaped to rounded, open form, 35-40' tall, 35' wide, yellow fall color, male, no fruit, same culture as Amur corktree

***Sweating**: Most bare root oaks require sweating before planting to break bud. This involves dormant tree liners laid down and covered with wet packing material such as straw, shingle tow, and covered with a sheet of plastic. This should be done indoors, if possible, or in the shade. Temperatures should be between 45-70°F with high humidity (under plastic). Once the buds have begun to swell, usually within a few days, but usually not more than a week, the trees are ready to be lined out. The key to success is after the sweating process. Delay planting of oaks until the weather is warmer and humid (May) for better success after the sweating process. This is critical for success of sweated oak liners. Oaks are best transplanted in spring, rather than fall. It is best to move oaks at 2-2 1/2" caliper or lower, rather than bigger caliper as transplant shock reduces chances for survival. Other species that benefit from the sweating process include: birch, especially river birch, hawthorns, hackberry, ironwood (*Ostrya*), redbud, ash, lindens, musclewood, pagoda dogwood, pears, weeping willow, honeylocust, serviceberry, Japanese barberry, potentilla, roses, variegated dogwood, spreading cotoneaster

****Quercus bicolor***: swamp white oak, hardy to zone 4a, native to eastern U.S. and Wisconsin, pyramidal when young, becoming broad, rounded, wide-spreading with age, 50-60' tall, 50-60' wide, slow to moderate growth rate, easier to transplant than bur oak, prefers acidic to neutral pH, but will tolerate a bit higher, but at very high pH, it will get chlorotic, adaptable to most soils including heavy clay, tolerant to wet soil, drought, and urban conditions

***Quercus × bimundorum* 'Crimschmidt'**: Crimson Spire™ oak, hardy to zone 4b, hybrid of *Q. alba* × *Q. robur*, columnar to tightly fastigiate form, 45' tall, 15' wide, dark green to blue green leaves, rusty-reddish fall color, supposed to be mildew resistant

Quercus imbricaria: shingle oak, hardy to zone 4b, native to eastern and central U.S., pyramidal when young becoming oval to rounded with age, wide-spreading, 50-60' tall, 40-60' wide, slow to moderate growth rate, late, russet-brown fall color, leaves hold late into winter, requires acidic soil, gets chlorotic at high pH, tolerates dry soil, urban tolerant, susceptible to oak wilt

****Quercus macrocarpa***: bur oak, hardy to zone 3a, native to eastern and midwestern U.S. and Wisconsin, pyramidal when young, becoming very wide-spreading, rounded, 70-80' tall, 60-80' wide, slow growing, coarse texture, deeply furrowed bark, no fall color, adaptable to most soils and pH, drought and urban tolerant, difficult to transplant

***Quercus × macdenielli* 'Clemon's'**: Heritage® oak, hardy to zone 4, hybrid of *Q. robur* × *Q. macrocarpa*, broadly pyramidal becoming oval form, 60-80' tall, 40-50' wide, dark green, glossy leaves, no fall color, mildew resistant, vigorous

* ***Quercus muehlenbergii***: chinkapin oak, hardy to zone 4b, native to eastern and midwestern U.S. and Wisconsin, wide-spreading, rounded, open form, 40-60' tall, 50-60' wide, yellow to orangish-brown fall color, ashy-gray, flaky bark, adaptable to most soils and pH, difficult to transplant, drought and urban tolerant

Quercus palustris: pin oak, hardy to zone 4b, native to eastern U.S. to Midwestern U.S., nice pyramidal form with tight branching, 70-80' tall, 40-50' wide, fast growth rate, late, russet to orange-red fall color, prefers a rich, loamy soil, requires acidic soil only, tolerates wet soil, urban tolerant, susceptible to oak wilt

Quercus robur: English oak, hardy to zone 5a, native to Europe, northern Africa, and western Asia, oval to rounded form, short trunk, slow to moderate growth rate, 40-60' tall, 40-50' wide, no fall color, smaller leaves than other oaks, deeply furrowed bark, adaptable to most soils and pH, does not like compacted soils, urban tolerant, susceptible to powdery mildew, especially fastigiata forms, two-lined chestnut borer, scale, basal canker

'Fastigiata' (Skyrocket[®]): narrow, fastigiata form, 45' tall, 15' wide, tight branching, susceptible to mildew

'Pyramich' (Skymaster[®]): hardy to zone 5, narrow when young becoming pyramidal, 50' tall, 25' wide, straight central leader, good branch crotch angles, fast grower, may be a hybrid as it is vigorous

'Wandell' (Attention[®]): narrow, pyramidal to columnar form, 50' tall, 15' wide, resistant to powdery mildew, smaller leaves

Quercus Rosehill[®]: Rosehill oak, hybrid of *Q. robur* x *Q. bicolor* 'Asjes', zone 4b, fastigiata to narrow-oval form, 40' tall, 20' wide, mildew resistant

* ***Quercus* x *schuettei***: swamp bur oak, hybrid of *Q. bicolor* x *Q. macrocarpa*, zone 3b, broad, rounded form, 75' tall, 70' wide, faster growing, better tolerance to high pH and easier to transplant, may be susceptible to leaf/twig galls

***Quercus* x *warei* 'Long'**: Regal Prince[®] oak, zone 4b, broad columnar becoming upright oval form, 40-60' tall, 20-25' wide, hybrid of *Q. robur* 'Fastigiata' x *Q. bicolor*, dark green leaves with silvery undersides, holds leaves late, no fall color or mildew

Taxodium distichum: baldcypress, northern provenance is critical, hardy to zone 4b, pyramidal form with straight terminal leader, 50-70' tall, 25-35' wide, fine texture, native to southeastern and southcentral U.S. into southern IL, mainly in swamps, needs training in nursery or it grows like a large bush, deciduous gymnosperm, feathery, soft, bright green leaves, with rusty-brown to orangish-bronze fall color, reddish-brown to grayish, fibrous, shreddy bark, does not form "knees" in urban conditions, only if grown near water, adaptable to most soils, prefers slightly acidic to neutral soils, can get chlorotic at very high pH, easy to transplant, heat, drought, salt, wet soil, and urban tolerant, few, if any pests

'Mickelson' (Shawnee Brave[®]): narrowly pyramidal form, 55' tall, 20' wide, richer green leaves, more upright form

*+ ***Tilia americana***: American linden, basswood, hardy to zone 3a, native to northeast and central U.S., Canada, and Wisconsin, pyramidal when young becoming upright-oval with age, 60-80' tall, 40-50' wide, fragrant, pale yellow flowers in early summer, small nutlet fruit attached to bract, large, heart-shaped leaves, prefers a deep, fertile soil, pH adaptable, easy to transplant, tolerant to wetter soils, sensitive to salt and air pollution, susceptible to Japanese beetle, linden borer, gypsy moth, basal and stem rots, sunscald on bark, tends to sucker at base, can break in storms, prone to included bark formation and narrow, branch crotch angles, girdling roots

'Bailyard' (Front Yard[®]): broadly pyramidal when young becoming rounded and dense, symmetrical form, 60-75' tall, 40' wide

'Boulevard': narrowly pyramidal form, 50' tall, 25' wide, ascending branches, yellow fall color

'DTR 123' (Legend[®]): broadly pyramidal form, 40' tall, 30' wide, well-spaced branches, thicker leaves, single leader, yellow fall color

'Lincoln': pyramidal, compact, dense form, 40' tall, 25' wide, upright branches, dark green leaves, yellow fall color

'Mcksentry' (American Sentry[™]): symmetrical, pyramidal form with straight central leader, 45' tall, 30' wide, better branch angles, lighter gray bark, yellow fall color

+ ***Tilia cordata***: littleleaf linden, hardy to zone 3b, native to Europe, pyramidal when young becoming oval to round with age, formal, dense habit, 50-70' tall, 35-50' wide, fragrant, pale yellow flowers in early summer, small nutlet fruit attached to bract, small, heart-shaped leaves, prefers a fertile soil, but is adaptable, pH adaptable, easy to transplant, sensitive to poorly-drained, compacted soils and road salt, urban and air pollution tolerant, same pests as American linden

'Bailey' (Shamrock[®]): symmetrical, pyramidal form, 40' tall, 30' wide, stouter branches, more open canopy, uniform branching no fall color

'Chancole' (Chancellor[®]): upright, narrow, pyramidal form, 40' tall, 20' wide, good branching, faster growing, wider branch crotch angles, yellowish fall color

'Corzam' (Corinthian[®]): narrowly pyramidal form, 45' tall, 15' wide, dense branching, evenly spaced branches, thick, glossy leaves, yellowish fall color

'Halka' (Summer Sprite[®]): dense, narrow, pyramidal form, dwarf, 16' tall, 8' wide, yellowish fall color

'Norbert' (Prestige[®]): broad, pyramidal form, good branching, wider branch crotch angles, shiny leaves, fewer seeds produced, harder to find, but much better form than 'Greenspire'

'PNI 6025' (Greenspire[®]): pyramidal, symmetrical form becomes rounded with age, 40' tall, 30' wide, yellowish fall color, very prone to narrow crotch angles and included bark formation, tight branching, needs a lot of training pruning, old cultivar

'Ronald' (Norlin[™]): broad, pyramidal form, 40-45' tall, 30' wide, faster grower, resistant to sunscald, more cold hardy

+ ***Tilia × euchlora***: Crimean linden, hardy to zone 4b, hybrid of *T. cordata* × *T. dasystyla*, broadly pyramidal form to oval, 40-60' tall, 35' wide, can sucker from base of tree, yellowish fall color

+ ***Tilia × flavescens*** 'Glenleven': Glenleven linden, hardy to zone 4, hybrid of *T. americana* × *T. cordata*, pyramidal form, 50' tall, 30' wide, yellowish fall color, better branching, more open, larger leaves, faster growing, straight trunk and leader

+ ***Tilia*** 'Harvest Gold': Harvest Gold linden, hardy to zone 3, hybrid of *T. cordata* × *T. mongolica*, more cold hardy, upright, oval form, 30-40' tall, 20-25' wide, leaves are deeply lobed, resistant to sunscald, exfoliating bark, golden buds and fall color

+ ***Tilia*** 'Redmond': Redmond linden, hardy to zone 4, hybrid of *T. americana* × *T. × euchlora*, pyramidal to oval form, upright branches with terminal leader above the foliage, reddish stems and buds, can sucker at base, 50-70' tall, 30-40' wide, fragrant, pale yellow flowers in early summer, small nutlet fruit attached to bract, large, heart-shaped leaves

+ ***Tilia tomentosa***: silver linden, hardy to zone 4b, native to southeastern Europe and western Asia, broad-pyramidal form becoming upright-oval, formal looking, dark green leaves with silvery-white undersides, pale yellow flowers in summer, small nutlet fruit attached to a bract, no fall color, prefers a deep, fertile soil, but is adaptable, pH adaptable, easy to transplant, more heat, drought, and urban tolerant than other lindens, does not tolerate poorly-drained, compacted soils, same pests as American linden

'PNI 6051' (Green Mountain[®]): broadly pyramidal to oval form, 50' tall, 35' wide, dark green leaves with silvery undersides, yellowish fall color, prone to included bark formation

'Wandell' (Sterling[®]): broadly pyramidal form, 45' tall, 35' wide, green leaves with silvery undersides, yellowish fall color, prone to included bark formation

+* ***Ulmus americana***: American elm (DED resistant cultivars), hardy to zone 3a, native to eastern and central U.S., Canada and Wisconsin, all have vase-shaped form with pendulous branches, 70-80' tall, 60-70' wide,

yellow fall color, adaptable to most soils and pH, tolerant to compacted, heavy clay soils, easy to transplant, tolerant to periodic flooding, salt, urban, air pollution, and drought tolerant, pest prone

'New Harmony' (from U.S. National Arboretum): broad, vase-shaped form, arching branches, good form, easier to grow

'Princeton': (from Princeton Nursery) large, leathery leaves, vase-shaped form, more resistant to elm leaf beetle

'Valley Forge' (from U.S. National Arboretum): broad, vase-shaped form with arching branches, 70' tall, 70' wide, wild looking form and branching, vigorous, needs training

+ ***Ulmus hybrids***: hybrid elms, most are hardy to zone 4-5, all Dutch elm disease resistant, needs pruning in nursery to develop good form, adaptable to most soils and pH, tolerant to compacted, heavy clay soils, moderate salt tolerance, drought, urban, and air pollution tolerant, * are ones that I think are the best

'Cathedral' (UW-Madison intro): hybrid of *U. japonica* × *U. pumila*, broadly vase-shaped, spreading form, 40-50' tall, 40-60' wide, prone to elm leaf beetle, zone 4

*'Frontier' (from U.S. National Arboretum): hybrid of *U. carpinifolia* × *U. parvifolia*, broadly oval form, 35' tall, 25' wide, ascending branches, glossy, small, dark green, glossy leaves, late, burgundy fall color, can get elm leaf beetle, Zone 5

'Homestead' (from U.S. National Arboretum): hybrid of *U. pumila* × (*U. × hollandica* × *U. carpinifolia*), upright, narrow to oval form, 55' tall, 35' wide, upright, arching branches, prone to elm leaf beetle, fast growing, Zone 4b

*'Morton' (Accolade[®]) (from Morton Arboretum): hybrid of *U. japonica* × *U. wilsoniana*, vase-shaped form with arching branches, 70' tall, 60' wide, resistant to elm leaf beetle, vigorous, resistant to elm leaf beetle, dark green, glossy leaves, zone 4

*'Morton Glossy' (Triumph[™]) (from Morton Arboretum): hybrid of *U. 'Morton Plainsman'* × *U. 'Morton'*, upright oval to vase-shape, 55' tall, 45' wide, very glossy, dark green leaves, good form, some elm leaf beetle, excellent drought tolerance, zone 4

'Morton Plainsman' (Vanguard[™]) (from Morton Arboretum): hybrid of *U. japonica* × *U. pumila*, rounded, vase-shaped form, 45' tall, 40' wide, glossy, dark green leaves, prone to elm leaf beetle, zone 4

'Morton Red Tip' (Danada Charm[™]) (from Morton Arboretum): complex hybrid of (*U. japonica* × *U. wilsoniana*) × *U. pumila* vase-shape form with arching branches, 70' tall, 60' wide, reddish new leaves, new leaves, prone to elm leaf beetle, zone 4

'Morton Stalwart' (Commendation[™]) (from Morton Arboretum): complex hybrid of *U. 'Morton'* × (*U. pumila* × *U. carpinifolia*), upright, oval form, 60' tall, 50' wide, zone 5

'New Horizon' (UW-Madison intro): hybrid of *U. japonica* × *U. pumila*, upright, compact form, 50' tall, 25' wide, dark green leaves, wide crotch angles, susceptible to verticillium wilt, zone 3b

'Patriot' (from U.S. National Arboretum): complex hybrid of *U. wilsoniana* × *U. pumila* × *U. carpinifolia* × *U. glabra*, stiffly upright branches, narrow, vase-shape form, 50' tall, 40' wide, dark green leaves, straight central leader, zone 5

'Pioneer' (from U.S. National Arboretum): hybrid of *U. glabra* × *U. carpinifolia*, rounded form, 50' tall, 50' wide, dark green, glossy leaves, prone to elm leaf beetle, zone 5

'Regal' (UW-Madison intro): complex hybrid of *U. carpinifolia* × (*U. pumila* × *U. × hollandica*), upright, pyramidal form, 50-60' tall, 30' wide, prone to double leaders and narrow crotches, stiff branches, zone 4

+ ***Ulmus japonica 'Discovery'***: Discovery Japanese elm, hardy to zone 3, native to Japan and Asia, upright, vase-shape, compact form, 35-40' tall, 35-40' wide, resistant to DED and elm leaf beetle, yellow fall color

+ ***Ulmus parvifolia***: lacebark elm, Zone 5b, native to China, Korea, and Japan, semi-exfoliating bark with mottled colors of gray, green, orange, and brown inner bark and orange lenticels, adaptable to most soils and pH, easy to transplant, tolerant to compacted, clay soils, urban, air pollution, tolerant, DED resistant

'Dynasty' (from U.S. National Arboretum), more cold hardy, zone 5a, upright, vase-shaped to rounded form, 40-45' tall, 40' wide, orange-yellow to red fall color, bark not as exfoliating as other cultivars

+ ***Ulmus wilsoniana*** 'Prospector' Prospector elm (from U.S. National Arboretum): hardy to zone 4, dense, broad, vase-shaped form, slightly pendulous branches, 40' tall, 30' wide, resistant to elm leaf beetle, DED, and phloem necrosis, deep green, glossy leaves, yellow fall color

Small Urban Area or Street Trees

Acer tataricum: Tatarian maple, Zone 3a, native to southeastern Europe and central Asia, invasive, do not plant near any natural areas, single or multi-stemmed, upright form, 25' tall, 20' wide, yellow to reddish-brown fall color, pinkish-red samaras in summer changing to brown in fall, adaptable to most soils and pH, easy to transplant, drought, salt, and urban tolerant, very susceptible to verticillium wilt

'GarAnn' (Hot Wings™): upright, spreading form, 20-25' tall, 15-20' wide, bright red samaras, yellow to red fall color, drought tolerant

'Patdell' (Pattern Perfect™): upright form, 20' tall, 15-20' wide, bright red samaras, red stems, red-orange fall color

'Summer Splendor': upright, spreading form, 15-20' tall, 15' wide, bright red fruit in summer

Acer tataricum* subsp. *ginnala: Amur maple, Zone 3a, native to China, Manchuria, and Japan, very invasive, do not plant near any natural areas, multi-stemmed, rounded form, low branches, 15-18' tall and wide (smaller cultivars are available), dagger-shaped leaves, orange to bright red fall color, red samaras in summer turn brown in fall, adaptable to most soils and pH, easy to transplant, drought, salt, and urban tolerant, very susceptible to verticillium wilt

'Compactum' or 'Bailey Compact': dense, compact, rounded, shrubby form, 6-8' tall, 6-8' wide, slower grower, orange to scarlet fall color

'Embers': rounded form, 15-20' tall, 15' wide, bright red samaras, scarlet fall color

'Emerald Elf': compact, rounded, dense, shrubby form, 5-6' tall and wide, scarlet to purple fall color

'Flame': multi-stemmed, spreading, irregular form, 15-20' tall, 20-25' wide, bright orange-red to deep red fall color

'JFS-UGA' (Red November™): multi-stemmed, low, rounded form, 18' tall, 24' wide, later, bright red fall color, heat tolerant, Zone 5

Acer truncatum: Shantung maple, Zone 3b, use a northern provenance (seed source), native to northern China, Russia, Korea, and Japan, broad-rounded, dense, symmetrical form, 20-30' tall, 20-30' wide, yellowish-orange to purple fall color, star-shaped leaves, adaptable to most soils and pH, drought, salt, heat and urban tolerant, no pest problems, harder to find, but worth trying

* ***Crataegus crus-galli* var. *inermis***: thornless cockspur hawthorn, hardy to zone 4a, native to eastern and central U.S., Canada, and Wisconsin, multi-stemmed tree, broad, spreading, horizontal, low branches, flat-topped crown, 20-30' tall, 20-35' wide, adaptable to most soils and pH, difficult to transplant, plant in spring, drought, salt, and urban tolerant, susceptible to cedar quince rust (on fruit) or cedar hawthorn rust (leaves), this variety has no thorns, white flowers in late spring, deep red fruit in early to mid fall that drops creating a litter problem, bronzy-orange to reddish fall color, dark green, leathery, spoon-shaped leaves

'Cruzam' (Crusader®): rounded form, 15' tall, 15' wide, thornless, bright red fruit, orange fall color

Crataegus phaenopyrum: Washington hawthorn, hardy to zone 4b, native to eastern U.S. and Canada, multi-stemmed tree, vase-shaped to broadly oval form, horizontal, low branches, 20-30' tall, 20-25' wide, adaptable to most soils and pH, difficult to transplant, plant in spring, tolerant to poor, sandy soils, drought and urban tolerant, moderate salt tolerance, susceptible to cedar quince rust (on fruit) or cedar hawthorn rust (leaves), has long, sharp thorns, white flowers in late spring to early summer, showy, persistent, glossy, bright-orange-red fruit fall to winter

'Westwood I' (Washington Lustre[®]): rounded, upright form, 20-25' tall, 20-25' wide, has fewer thorns than species, vigorous

Crataegus viridis '**Winter King**': Winter King hawthorn, hardy to 4b, native to eastern U.S., vase-shaped to rounded, wide-spreading form, horizontal, low branches, adaptable to most soils and pH, difficult to transplant, plant in spring, drought and urban tolerant, moderate salt tolerance, less susceptible to cedar hawthorn rust but can get cedar quince rust on fruit, white flowers in late spring, very showy, bright orange-red, persistent fruit from mid fall to winter, silvery-gray bark that exfoliates on the trunk revealing orange inner bark, has few if any thorns, yellowish-purple fall color

Maackia amurensis: Amur maackia, hardy to zone 4a, native to Manchuria, vase-shaped to rounded form, upright, arching branches, 20-30' tall, 20-30' wide, slow grower, silvery and fuzzy leaves in spring turn olive-green and smooth, coppery-green to bronzish-brown, slightly exfoliating bark, off-white flowers in summer, small pods in fall, tolerant to most soils and pH, roots fix atmospheric N, tolerant to poor, infertile soils, urban and salt tolerant, prone to included bark formation, needs pruning when young, no pests, not invasive

'Starburst': upright, vase-shaped form with rounded crown, 25-30' tall, 20' wide, dark green leaves
'Summertime[®]': upright, rounded form, 18-20' tall, 12-15' wide, white flowers in summer

⁺ ***Malus spp.***: flowering crabapple, most are hardy to zone 4a and are hybrids with parents originating from Asia, Europe and U.S., size and form are quite variable, adaptable to most soils and pH, prefers low nitrogen to decrease disease susceptibility, drought and urban tolerant, apple scab resistant species and cultivars listed below and have smaller fruit, some cultivars prone to suckering and watersprouts on branches

White Flowers/Red Fruit

'Adirondack': narrow, upright form, 18' tall, 10' wide, persistent fruit

'Guinzam' (Guinevere[®]): rounded form, 8-10' tall, 10' wide, persistent fruit

'Jewelcole' (Red Jewel[®]): upright, pyramidal form, 15' tall, 12' wide, persistent fruit, can get fireblight

'Kinarzam' (King Arthur[®]): upright, rounded form, 12' tall, 10' wide, can sucker from base

'Sutyzam' (Sugar Tyme[®]): upright, spreading, oval form, 18' tall, 15' wide, persistent fruit

Malus baccata 'Jackii': Jackii crabapple, hardy to zone 3, rounded form, 20' tall, 20' wide, glossy leaves, zone 3

Malus sargentii: Sargent crabapple, low, spreading form, 8' tall, 12' wide, alternate bearing, persistent fruit

'Select A' (Firebird[®]): rounded, spreading form, 7' tall, 9' wide, persistent fruit, bears annually, persistent fruit

'Tina': small, rounded, dwarf form, 5' tall, 6' wide, slow growing

Malus x zumi var. *calocarpa*: redbud crabapple, rounded, spreading form, 20' tall, 24' wide, persistent fruit

White Flowers/Yellow Fruit

'Bob White': dense, rounded form, 20' tall, 20' wide, persistent fruit, but is a watersprouter

'Cinzam' (Cinderella[®]): dwarf, rounded to upright form, 8' tall, 5' wide, persistent fruit

'Excazam' (Excalibur[™]): upright form, 10' tall, 8-10' wide, good form

'Lanzam' (Lancelot[®]): compact, upright, dense form, 8-10' tall, 8' wide, persistent fruit

'Ormiston Roy': broad, rounded form, 20-25' tall, 25' wide, furrowed, orangish bark, yellow fruit with a rosy blush turn orange-brown after a hard frost

Pink or Reddish Flowers/Red to Purplish-Red Fruit

'Camzam' (Camelot[™]): rounded form, 10' tall, 8' wide, pinkish-white flowers, burgundy-green leaves, persistent fruit

Malus sargentii 'Candymint': low, spreading, horizontal form, 10' tall, 15' wide, purple tinted foliage becoming bronze-green

'Canterzam' (Canterbury[™]): rounded, compact form 10' tall, 8-10' wide, light, pinkish-white flowers
 'Cardinal': irregular, spreading form, 16' tall, 22' wide, dark purplish-red, glossy leaves
 'JFS-KW5' (Royal Raindrops[®]): upright, spreading form, 20' tall, 15' wide, cutleaf, purple leaves, orange-red fall color, persistent fruit
 'Orange Crush': spreading form, 12-15' tall, 12-15' wide, bronze to purplish-green leaves
 'Parsi' (Pink Princess[®]): low, spreading form, 8' tall, 12' wide, purple leaves become bronze-green
 'Prairifire': upright, spreading to rounded form, 20' tall, 20' wide, slower growing, purple leaves become reddish-green
 'Prairie Maid': rounded to spreading form, 20' tall, 25' wide, burgundy tinged leaves in spring, but is a watersprouter
 'Purple Prince': rounded form, 20' tall, 20' wide, purple leaves become bronzish-green, persistent fruit

Weeping Form

'Coral Cascade': semi-weeping form, 15' tall, 20' wide, white flowers, coral fruit, persistent fruit
 'Louisa': graceful weeper, 15' tall, 15' wide, pink flowers, fruit are yellow turning orange-brown, not showy or persistent
 'Luwick': graceful, low weeper, 7' tall, 14' wide, deep pink buds open to light pink to whitish flowers, bright red fruit
 'Manbeck Weeper' (Anne E.[®]): wide spreading, horizontal weeper, 10-12' tall, 10-12' wide, white flowers, cherry-red fruit, persistent fruit, is difficult to find, but is one of the nicest crabs
 'Molazam' (Molten Lava[®]): broadly weeping form, 14' tall, 20' wide, white flowers, bright red fruit

⁺***Prunus sargentii***: Sargent cherry, hardy to zone 4b, native to Japan, oval to vase-shaped form, 25-35' tall, 20-30' wide, showy, single, pink flowers in clusters in early spring, small, purplish-black fruit in summer, bronze to orange-red fall color, reddish-gray to chestnut-brown, polished bark, adaptable to most soils and pH, does not tolerate compacted, heavy-clay soils, plant in spring, likes roots kept cool, must have good drainage, resistant to black knot, may form included bark

'Columnaris': narrow, columnar to narrow, vase-shape form, 25-35' tall, 15' wide, orange to orange-red fall color
 'JFS-KW58' (Pink Flair[®]): upright, narrow, vase-shape form, 25' tall, 15' wide, orange-red fall color

⁺***Prunus 'Accolade'***: Accolade cherry (hybrid with *P. sargentii* and *P. subhirtella*), hardy to zone 4b, 20-25' tall, 20-25' wide, horizontal branching with vase-shaped form, semi-double, early, pink flowers in drooping clusters before the leaves in early spring, no fruit, golden to orange fall color

Pyrus calleryana: callery pear, hardy to zone 4b, native to China and Korea, upright, pyramidal to oval form, 25-35' tall, 20-30' wide, adaptable to most soils and pH, drought, urban, and salt tolerant, can get fireblight, fast grower, dark green, glossy, leathery leaves, late, reddish-orange to purple fall color, white flowers in mid spring, small, brown, rounded fruit

Aristocrat[®]: pyramidal form with open branching, 35' tall, 25' wide, yellow to red fall color but is inconsistent for fall color, wider branch crotch angles
 *'Autumn Blaze': rounded form, 30' tall, 25' wide, earlier, bright red to purplish fall color, wide crotch angles, less prone to included bark formation
 'Cambridge': upright, narrowly pyramidal form, 35' tall, 15' wide, bright orange fall color
 'Capital': narrow, columnar form, 30' tall, 12' wide, reddish-purple fall color, susceptible to limb breakage in storms, susceptible to fireblight, zone 5
 'Cleveland Select' or 'Glenn's Form' (Chanticleer[®]): formal, upright, narrowly pyramidal form, 25-30' tall, 15' wide, late orangish to reddish fall color, not as good as other cultivars for fall color
 'Redspire': pyramidal, dense, symmetrical form, 35' tall, 25' wide, yellow to reddish fall color or none at all, susceptible to fireblight, slower grower
 'XP-005' (Trinity[®]): broadly oval to rounded form, 30' tall, 25' wide, glossy, lighter green leaves, orange-red fall color

Syringa pekinensis: Peking lilac, Pekin lilac, hardy to zone 4a, native to northern China, loose, rounded form, 20-25' tall, 15-20' wide, moderate to fast grower, no fall color, reddish-brown, shiny bark, creamy-white, large flowers in early summer that do not smell like lilacs but rather like a privet, tends to flower heavily every other year, adaptable to most soils and pH, easy to transplant, salt and urban tolerant, susceptible to bacterial blight and verticillium wilt, resistant to mildew

'DTR 124' (Summer Charm[®]): upright, spreading, better form, 20' tall, 15' wide, single-stemmed

'Morton' (China Snow[®]): upright, spreading, wild form, big crown, 25' tall, 20' wide, vigorous, showy, showy, exfoliating, coppery to orangish-brown bark, single-stemmed

'Zhang Zhimming' (Beijing Gold[™]): upright, rounded form, 25' tall, 20' wide, vigorous, single or multi-stemmed, yellow flowers instead of white

Syringa reticulata: Japanese tree lilac, hardy to zone 3a, native to Japan and Manchuria, upright with a rounded to oval form, 20-25' tall, 15-20' wide, no fall color to yellowish, reddish-brown, shiny bark, creamy-white, large flowers in early summer that do not smell like lilacs but rather like a privet, tends to flower heavily every other year, adaptable to most soils and pH, easy to transplant, salt and urban tolerant, susceptible to bacterial blight and verticillium wilt, resistant to mildew

'Elliott' (Snowcap[™]): upright, more compact form, 15-20' tall 10-12' wide, uniform branching, thick, dark green leaves, good form

'Golden Eclipse': upright, compact form, 18-24' tall, 8-14' wide, new leaves in spring emerge green with a darker center, the edge of the leaf gradually turns bright gold with the dark green center remaining

'Ivory Silk': over used, upright, spreading becoming oval to rounded, 20' tall, 15' wide, susceptible to bacterial blight

'Summer Snow': broad, rounded, compact form, 20' tall, 15' wide, good form, glossy, dark green leaves

'Williamette' (Ivory Pillar[™]): upright, pyramidal, narrower form, 20-25' tall, 10-15' wide

*Native to Wisconsin

†Susceptible to adult Japanese beetle foliar feeding

Wholesale nursery sources used in this guide (does not imply endorsement by me of nurseries named, nor criticism of similar nurseries not mentioned)

Bailey Nurseries: St. Paul, Minnesota, www.baileynurseries.com, (800) 829-8898

Beaver Creek Nursery: Poplar Grove, Illinois, www.beavercreeknursery.com, (815) 737-8758

Carlton Plants: Dayton, Oregon, www.carltonplants.com, (800) 398-8733

Femrite Nursery: Aurora, Oregon, www.femrite.com (800) 547-2161

Heritage Seedlings: Salem, Oregon, www.heritageseedlings.com (503) 371-9688

J. Frank Schmidt and Son: Boring, Oregon, www.jfschmidt.com, (800) 825-8202

Johnson's Nursery: Menomonee Falls, Wisconsin, www.johnsonsnursery.com, (262) 252-4980

Mariani Nurseries: Kenosha, Wisconsin, (866) 627-4264

McKay Nursery: Waterloo, Wisconsin, www.mckaynursery.com, (920) 478-2121

Silver Creek Nurseries: Manitowoc, Wisconsin, (920) 684-6267

U.S.D.A. Cold Hardiness Zones

Zone 3a (cold hardy to -35 to -40°F): northwestern Wisconsin

Zone 3b (cold hardy to -30 to -35°F): most of northern Wisconsin

Zone 4a (cold hardy to -25 to -30°F): northern central and extreme northwestern Wisconsin

Zone 4b (cold hardy to -20 to -25°F): southwestern and central Wisconsin and along shore of Lake Superior

Zone 5a (cold hardy to -15 to -20°F): southeastern and eastern Wisconsin up to Door County and Madison near the lakes

Zone 5b (cold hardy to -10 to -15°F): Milwaukee, Racine, and Kenosha areas near Lake Michigan