

LOW MAINTENANCE, HIGH TOLERANCES MAKE LINDENS GOOD CHOICE IN CITIES

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The lindens (*Tilia*)—American, Little-Leaf, Silver, and Mongolian—are exciting as street, park, large area, or home landscape trees with each being outstanding when grown in optimal situations.

The native **American Linden (Basswood)** (*Tilia americana*) has a range from Alaska through the Great Plains of Canada, southward to North Carolina. It is found growing in many sites but prefers deep, rich, fertile soils with a relatively high percentage (35) of silt and clay. Basswood thrives in full sun but will tolerate partial shade. It is resistant to drought and tolerates salt spray and chloride applications to the soil. The fast-growing tree reaches 70 to 90 feet in the landscape but can be found native over 100 feet in height. Its habit is pyramidal when young but becomes drooping and irregular with maturity. The 4 to 8 inch long coarsely serrated, somewhat heartshaped leaves are bright green during the summer, usually turning brown in the fall with little or no effective fall color. Its pale yellow, fragrant flowers of mid-June can be quite effective visually and they have a sweet aroma.

Basswood (*T. americana*) propagates easily by seed when acid scarified for 15 minutes and stratified for three months. Further, we find this tree propagates quite easily by cuttage (softwood).

American Linden is a large-area (park or golf course) specimen tree. It is a good companion when used with grass or pachysandra. Junipers, which are too aggressive for the American and Little-Leaf Linden, often lead to premature defoliation and/or death of these lindens.

Their diseases are minimal but anthracnose caused by *Gnomonia tiliae* often causes defoliation in late season under a moist condition. Lawn mower disease (basal hits) is most significant and heartwood rot is common. This tree is a poor compartmentalizer; thus, only small branches can be pruned off because large-branch pruning results in heartwood decay. Insects that top the pest list include aphids and mites. These sucking insects can become numerous during late summer, secreting a honeydew that produces a black, sooty mold on the foliage. Control is appropriate only when defoliation seems to be a problem.

The only cultivar of American Linden is 'Redmond' (*T. americana* 'Redmond'). Although often listed as a cultivar of Crimean Linden, C. Lewis has suggested it would more appropriately be listed as a cultivar of American Linden. I feel that the habit of growth is more characteristic of American Linden. It is a good street tree and grows extremely well in the largest cities of Michigan. 'Redmond' Linden grows aggressively and tolerates chlorides (sodium and calcium chloride), compacted soils, and urban stresses, making it outstanding as a street tree in areas with a large out-lawn. Longevity of this tree — more than 40 years — presently seems acceptable.

Little-Leaf Linden (*T. cordata*), a European native, is effective when used on golf courses, parks, or home landscapes, and is outstanding as a street tree. Its leaves are 1½ to 2 inches long and finely serrated with a dark green summer color. This gives a much finer texture to the plant than is displayed by American Linden. Fall color can be an attractive yellow, although it doesn't develop every year. Its habit is densely pyramidal when young and becomes a dense, upright oval, reaching 50 to 60 feet in height and maturity. Little-Leaf Linden transplants readily into rich, moist, somewhat compacted soil and thrives in many cities. It tolerates salt (chlorides) and has been reported to tolerate most air pollutants, which makes Little-Leaf Linden the outstanding Linden for large cities. Of its several cultivars, 'Greenspire,' 'Chancellor,' and 'Rancho' are most desirable and available. 'Greenspire' (*T. cordata* 'Chancellor') is fastigate when young, becoming pyramidal at maturity. It

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A fine cultivar of Little-Leaf Linden, *Tilia Cordata* 'Greenspire' tapers neatly to a point when young and becomes pyramidal at maturity. Photo at left shows leaf of the Silver Linden (*Tilia tomentosa*), whose habit is similar to the Little-Leaf.



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has been reported fast growing with good wide angle crotches. It seems to be the outstanding urban cultivar of Little-Leaf Linden in central and northern Michigan.

'Rancho' (*T. cordata* 'Rancho') is a small, upright oval in habit with small, glossy leaves but often doesn't develop fall color. It displays the finest texture of the Little-Leaf Linden cultivars.

Presently, Little-Leaf Linden cultivars are propagated by graftage or budding, but we have shown they can easily be propagated by cuttage (softwoods). I believe propagation by cuttage is the way many cultivars will be grown in the future. In fact, this should eliminate the graft incompatibility which has been showing up with increased frequency.

Silver Linden (*T. tomentosa*) should be used more often. Its habit is similar to Little-Leaf Linden, becoming an upright oval 70 feet high at maturity. The leaves are 2 to 4 inches long and doubly serrated. The upper leaf surface is a dark green and the lower surface is a silver-green. When the wind blows, this tree gives one the feeling of Quaking Aspen. Because of the large leaf size, Silver Linden is coarser in texture than Little-Leaf Linden but exciting as a change of pace in the landscape. It is a good street or specimen park tree. It is reported by Dirr and Lewis to be drought tolerant. Silver Linden is perfectly hardy in Chicago, central and southern Michigan, throughout much of Ohio, and the East Coast, but for latitudes north of Gaylord, MI, it should not be considered. Silver Linden makes a good companion with grass as well as many ground covers, preferring full sun and tolerating only partial shade. As it becomes more widely known and available in the trade, it should play an increasingly important role in our urban landscapes.

Mongolian Linden (*T. mongolica*) is a small tree which is somewhat pyramidal when young, almost pendulous at maturity, and rarely reaches over 30 feet in height. Its 1 to 3 inch deeply-cut, almost lobed leaf makes it unique among the lindens. It has a relatively fine texture, shows good tolerance to most urban conditions, and should be considered for small area-home landscapes. With its unique leaf character and habit, it should become one of our major new small trees.

The lindens are certainly an outstanding addition to our urban landscapes. American Linden and its cultivar distinguish themselves as large area or park trees; Little-Leaf Linden is outstanding as a street tree; Silver Linden fills in well as a street or park tree; and Mongolian Linden is ideal as a home or small area landscape tree. These trees fit a unique niche in poorly-drained, heavy-silty soils. They thrive even under droughty conditions, and tolerate salt, air pollutants, and compaction. They will become more widely used due to their tolerances and relative freedom from catastrophic diseases. Considering the low maintenance requirements, linden's place of importance will increase. The one main precaution with linden is that they are poor compartmentalizers and lawn mower damage can easily result in heartwood or butt rot, but this is the main detractor of an otherwise outstanding group of urban trees.

WTT