

Cercidiphyllum: A New Look at the Species®

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INTRODUCTION

The katsuratree, *Cercidiphyllum* Sieb. & Zucc., introduced from Eastern Asia in 1865 is native to regions of Japan and China (The Garden Club of America, 1984). It has been debated that the genus includes two separate species. Krüssman (1984) identifies two species, *C. japonicum* and *C. magnificum* Nakai. In the U.S.A., you typically only find *C. japonicum* being sold in the nursery trade whereas *C. magnificum* is available as a variety of the genus. The Hillier Manual of Trees and Shrubs (Hillier Nurseries, 1996) list two individual varieties with their respective author citations for *Cercidiphyllum*. Hillier includes *C. japonicum* var. *magnificum* Nakai (see *C. magnificum*) that is native to Japan and differs from *C. japonicum* in leaf size and shape as well as having a smoother bark. The other noted variety, *C. japonicum* var. *sinense* Rehd. & Wils., is an introduction from China by E. H. Wilson in 1907 and has a more “tree-like” growth habit with a single leader rather than multiple trunks. *Cercidiphyllum* selections, origins, and descriptions can be found in Table 1.

The tree, *Cercidiphyllum*, got its name because it has a similar shaped leaf to those of the genus *Cercis* or redbud (Coombes, 1995). There is another plant with *Cercis*-like leaves, known as *Disanthus cercidifolius*. Both *Cercis* and *Disanthus* differ from the *Cercidiphyllum* in leaf arrangement on the stem. The katsuratree has leaves that are opposite or sub-opposite as opposed to the alternate arrangement found with the foliage of *Cercis* and *Disanthus*. Additionally, the latter two species have an entire or smooth leaf margin unlike the rounded serrations along the edge of the leaves growing on the katsuratree (Dirr, 1998).

The katsuratree came into the United States in the late 1870s. It became a popular tree planted as a lawn specimen on large private estates and properties during last century. There are a number of these majestic giants presently growing between 60 and 70 ft, up to 100 ft, tall on properties in Berkshire County. The Berkshires are located in the western part of Massachusetts that borders New York, Connecticut, and Vermont. A few notable specimens include: a mature female growing in Pittsfield, Massachusetts, on the Miss Hall’s School campus; a large male with a single leader in Lee, Massachusetts; growing behind Saint Mary’s Church, a mature female in Stockbridge, Massachusetts, on the Deely estate; and four mature female trees on the former Searles Castle property in Great Barrington, Massachusetts. The katsuratree has been used as a street tree in the Berkshires; however, this application is not recommended by the author. The cultural conditions of planting strips along sidewalks are not ideal for *Cercidiphyllum*, which prefer deep, organic, moist but well drained soils. Katsuratrees that have been planted as street trees in the Berkshires have shown drought stress during the typical hot, dry conditions associated with the summer months in the area. The katsuratree is suggested for larger growing areas where it can grow to maturity without competition from other trees or man-made amenities such as buildings or streets.

In 2003 a fellow horticulturist showed me of a stand of *Cercidiphyllum* that had evidently self-seeded along the main access road of a housing development, Colebrook South, in Lenox, Massachusetts. I became intrigued with this stand of Katsuratrees, estimated at approximately $\frac{1}{2}$ acre in size. The largest trees in the population were about 12–14 inches in diameter. I have been unsuccessful in finding a larger Katsuratree in the area but there were a number of trees planted in the housing development of equal size growing on the property. The majority of the Katsuratrees growing in this area along the access road were 1–6 inches in diameter and the concentration of trees is heaviest at the edge of the woodland. There are individual Katsuratrees growing throughout the woodlands of Colebrook South but not in the concentration of the stand found growing along the main access road.

After a conversation with another horticultural colleague I found out there was another seedling population in Berkshire County. This Katsuratree population is located in the northeast corner of the Searles Castle property that borders Memorial Field in Great Barrington, Massachusetts. My colleague would collect smaller trees, up to 1-inch caliper, in the area to use on landscape jobs. This population is less concentrated compare to the stand in Lenox, Massachusetts. A group of four mature trees, approximately 70 to 80 ft tall, planted within 20 ft of each other, were the largest growing in the area. The property is bordered by the western bank of the Housatonic River. After spying a katsuratree on the other side of the river I went to further investigate. The property across the river on the east bank is owned by the Town of Great Barrington's Waste Water Treatment Plant. I found a number of *Cercidiphyllum* growing sporadically around the woodland edges near the treatment plant. These trees were approximately 200 yards from the larger specimens growing across the river.

The Great Mountain Forest Corporation in Norfolk, Connecticut is a privately owned forest in Litchfield County. The Forest practices silvicultural management and planted a timber stand of *C. japonicum* in 1951. I visited the Forest in summer 2008 to search for seedling populations in the immediate area. The trees have been managed as a woodlot and thinned periodically. These trees have tall straight trunks estimated at about 70 to 75 ft tall. The majority of these trees growing in the area were about 16–18 inches in diameter with little branching below the main canopy. Scouting for seedlings on the opposite side of the road was unsuccessful and I found no evidence of other Katsuratrees across the road from the planted stand. However, many seedlings were emerging while I was visiting in August. These seedlings were found growing on the edge of the road in the sandy soil. A group of seedlings were found approximately 100 yards up the road above the planted stand. The forester I interviewed believes the seeds are being swept up in the annual spring street sweeping and dispersed further above the planted stand when the sweeper transfers its load into a waiting dump truck.

In late August of 2008, I spotted a *Cercidiphyllum* growing on the north side of Route 44 between Canaan and Salisbury, Connecticut. The tree was estimated at approximately 60 to 65 ft tall and about 16 inches in diameter. A number of smaller trees, between 10 and 20 ft tall, were growing near the tree. Additionally, there were four to five other larger trees about 50 ft tall growing in the same area off the road with smaller trees around them as well. This population was covering a little more than a $\frac{1}{2}$ acre on a woodland edge. Additionally, I saw a number of smaller Katsuratrees growing on the opposite side of the road. These trees were approxi-

mately 15 ft tall. This area along Route 44 is directly below a local garden center and nursery. The population is still under investigation to locate the largest trees in the population.

In Sharon, Connecticut, I manage the landscape and gardens on a large private estate. I have found katsuratree seedlings growing throughout the property in the garden beds and on the edges of the hedgerows. Additionally, this past August I found three katsuratree seedlings had emerged from a pad of ½-inch stone that supported a generator unit for the residence. These seedlings had sprouted in the shady corner between the generator and house. The neighboring property has a number of large katsuratrees, between 40 and 45 ft tall, growing along the drive. Additionally, there are a number of trees that have seeded into a small brook edge running through the neighboring property. There are small number of medium-sized *Cercidiphyllum*, approximately 30 to 40 ft tall, growing in the hedgerow along the property line between the two estates grounds.

OBSERVATIONS

The flowering of *Cercidiphyllum* occurs in Berkshire County during the first 2 weeks of April. These flowers are sometimes subject to late frost in this area of the country. The fruit will form on female katsuratrees in early to mid September and are ready to be collected in early October. These winged seeds appear to germinate in close proximity to the parent tree. However, I surmise that some seeds are carried to other locations via small mammals or birds. This hypothesis may be evident from the wide distance between individuals and self-seeded populations observed in Massachusetts and Connecticut. Additionally, the fact seedlings were found growing in areas a distance away, as much as 200 yards, from mature fruiting female katsuratrees could help support this as well. The seeds may also be transported by mechanical means, such as a street sweeper, short distances from the parent trees. The density of *Cercidiphyllum* in the observed populations was visually greatest at the perimeter of the group. katsuratrees tolerate competition but will not thrive when subjected to deep shade from climax forest species such as *Acer saccharum* commonly known as sugar maple. The trees also show visual signs of stress when planted as street trees. Katsuratrees become stressed when in competition with man-made amenities such as buildings, sidewalks, and streets as well as under summer drought conditions. The selections of *Cercidiphyllum* that have been observed and identified by the author as male clones include *C. japonicum* 'f. *pendulum*' and 'Heronswood Globe' (Table 2).

SUMMARY

Cercidiphyllum species, commonly known as the katsuratree, is self-seeding around woodland hedgerows in Massachusetts and Connecticut. These self-seeded populations are not overly invasive because of the Katsuratrees intolerance to competition from itself and climax species, such as *Acer saccharum*. Katsuratrees will populate lightly wooded areas when given the opportunity to grow. The known male clones available include *C. japonicum* f. *pendulum* and 'Heronswood Globe'. Selections, introductions and use of male clones for the nursery industry would help to lessen the chances of seedling populations in the native woodlands of Massachusetts and Connecticut.

Table 1. *Cercidiphyllum* selections, origins, and descriptions.

Nonweeping Forms		
Cultivar	Origin	Description
'Aureum'	Piroche Plants Pitt Meadows, B.C., Canada	New leaves go from purplish to light green and finally bright yellow
'Boyd's Dwarf'	Unavailable	Dwarf form?
'Chameleon'	Unavailable	Unavailable
'Herkenrode Dwarf'	Unavailable	Dwarf form?
'Heronswood Globe'	Heronswood Nursery, Kingston, Washington	Dwarf, rounded form, grows to 15–20 ft tall
'Kreukenberg Dwarf'	Raulson Arboretum, Raleigh, North Carolina	Smaller leaves, shorter internodes, slower growing than species
'Peach'	Unavailable	Leaves have a peach scent in fall
'Raspberry'	Unavailable	Fall color is raspberry colored, raspberry fragrance from leaves
'Rotfuchs' (syn. 'Red Fox')	Europe	Dark burgundy leaves in spring, turn pink than yellow in fall
'Ruby'	Unavailable	Dwarf form, up to 30 ft, leaves have bluish-purple hue, attractive fall color
'Strawberry'	Holland	Leaves have strawberry-pink tint during growing season year, pink-yellow fall color with strawberry aroma
'Titania'	Unavailable	Vigorous, upright, and narrow habit
'Westonbirt'	Unavailable	Unavailable
Weeping forms		
'Amazing Grace'	Theodore Klein Yew Dew Nursery, Crestwood, Kentucky	Fast-growing, weeping form, grows 30 ft or more
'Graceful Grace'	Mike Heyman Louisville, Kentucky	Larger growing weeping form, 30–40 ft
'Morioka Weeping'	Japan	Larger and taller than other weeping clones, wide spreading
<i>C. japonicum</i> f. <i>pendulum</i> (syn. 'Pendula')	Japan	Large growing, mounding form with weeping branches, more upright with central leader
<i>C. magnificum</i> 'Pendulum'	Japan	Larger leaves and growth habit than <i>C. japonicum</i> f. <i>pendulum</i>
'Tidal Wave'	Bill Barnes Lorax Farms, Warrington, Pennsylvania	Strong weeping habit, healthy blue-green foliage throughout growing season

Table 2. *Cercidiphyllum* selections and their sex.Known sex of *Cercidiphyllum* selections.

Cultivar	Sex
<i>C. japonicum</i> f. <i>pendulum</i>	Male
<i>C. japonicum</i> 'Heronswood Globe'	Male

Unknown sex of *Cercidiphyllum* selections.

Cultivar	Sex
<i>Non-Weeping selections</i>	
'Aureum'	unknown
'Boyd's Dwarf'	unknown
'Chameleon'	unknown
'Herkenrode Dwarf'	unknown
'Kreukenberg Dwarf'	unknown
'Peach'	unknown
'Raspberry'	unknown
'Rotfuchs' (Red Fox)	unknown
'Ruby'	unknown
'Strawberry'	unknown
'Titania'	unknown
'Westonbirt'	unknown
<i>Weeping selections</i>	
'Amazing Grace'	unknown
'Graceful Grace'	unknown
'Morioka Weeping'	unknown
<i>C. magnificum</i> 'Pendulum'	unknown
'Tidal Wave'	unknown

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ADDITIONAL READING

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- The Arnold Arboretum, updated 3/2009. <<http://www.arboretum.harvard.edu>>
- Broken Arrow Nursery, updated 2008. <<http://www.brokenarrownursery.com>>
- Plantentium Esveld, updated 5/2009. <<http://www.esveld.com>>
- H. Kolster-boomkwekerij, updated 6/2009. <<http://www.hkolster.com>>