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Landscape

Tree Performance

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Although Oregon is the leading state in the nursery production of shade and flowering trees, little research data have been available on the performance of these trees in a garden situation in the state. Since many people change their places of residence frequently, they are interested in landscape performance within a short period following planting. This study helps to identify some of the trees that will quickly produce the shade and beauty which make the house and yard a pleasant place to live.

To provide factual information on the growth characteristics of ornamental trees, a trial was established at Oregon State University's North Willamette Experiment Station near Aurora in April 1965. This station is located 20 miles south of Portland at an elevation of 150 feet. The average frost-free season is 202 days, considerably shorter than the 263 days listed for Portland, because of occasional late spring and early fall frosts. This difference is of greater importance to tender vegetable crops than to most trees, which are somewhat frost tolerant. Average rainfall for the station is 42.7 inches, but this occurs primarily during fall, winter, and spring. The average rainfall during July and August is 1.3 inches. The soil is a Willamette sandy loam, a well-drained and fertile type.

Measurements and observations have been made on the rate of growth, time of foliation, period of bloom, fruit characteristics, and time and duration of fall color on various types of trees. Problems with insects, disease, wind, and cold have been noted. This report is based on observations during a four-year period. In cases where the tree did not remain in the trial for four years, the age and size at the time of removal are noted. It is intended that this trial be continued so that additional information on tree performance under Willamette Valley

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conditions can be obtained. Ultimate sizes of the trees listed in this publication are those found in the literature, although it may take a very long time under favorable conditions to reach this size. At present the maximum height of many of the named selections is not known, so they have been listed in the same height category as the parent species.

This report covers 237 types of trees, planted between 1965 and 1969. Normally, four trees of each selection were planted 6 feet apart in rows 30 feet apart. In some cases four trees were not available for planting, so a wider spacing was used. As the branches started to touch in the row, alternate trees were removed to avoid growth reduction.

— The trees planted were usually bare root whips four to nine feet tall, a size likely to be planted by a homeowner. Trees started from seed and other trees growing in containers were planted in smaller sizes to avoid root-crowding problems.

— Cultural practices included fertilizing, pruning, irrigation, and weed control, but no insecticides nor fungicides were used. Fertilizer and water were applied at rates comparable to those used on an adequately maintained lawn, or 100 pounds of nitrogen per acre each year. The importance of nitrogen in developing canopy (shaded area) in pin oak has been shown by van de Werken (6)*. He found that annual applications of 0, 60, and 120 pounds of nitrogen for seven years resulted in canopy areas of 38, 108, and 172 square feet. A progressive system of pruning was followed to gradually raise the branch level of the larger-growing trees so that it was possible to walk beneath them. Shorter trunks were developed on the smaller-growing trees. Herbicides were used to keep the area around the trees weed-free. Harris (3) has reported more rapid growth of some species when they were not grown in competition with turf grasses. The rates of growth in this test plant-

ing may be faster than those obtained in many plantings because of this lack of competition from grasses.

The tables record the tree's scientific name, common name if one was found, ultimate height, height and width at planting, and height and width after four growing seasons. If the plant was in the trial less than four years this is indicated by an asterisk and the reason for this short duration is given. E (early), M (midseason), and L (late) are used to indicate the relative time of foliage, bloom, fall color, and defoliation. Table 1 provides the dates on which the symbols used were based. The symbols E, M, or L are included in the "Bloom" column only if the tree bloomed within the four-year trial period. A symbol in the fall color column indicates the color is worth noting.

Table 1. DATES¹ OF GROWTH EVENTS IN LANDSCAPE TREES AT NORTH WILLAMETTE EXPERIMENT STATION

	Early	Mid-season	Late
Foliation ²	2/26- 3/31	3/26- 4/28	5/15- 5/27
Flowering	2/26- 3/25	3/26- 5/23	5/27- 8/25
Fall color ³	9/3 - 9/29	10/2 -11/3	10/28-12/15
Defoliation ⁴	10/12-11/5	11/10-12/8	12/5 and after

¹ These dates represent the extremes for a 4-year period, 1967-1972 thus there is some overlap as a growth stage may vary 2 to 4 weeks from year to year.

² When first true leaf is visible.

³ Start of fall coloration.

⁴ Complete defoliation.

The size classification (Table 2) follows that of OSU Extension Bulletin 758, "Plant Materials for Landscaping" (5). Additional information about some of the plants in this study as well as a large number of plants which are outside the scope of this study can be found in that bulletin.

Table 3 to 5 list the plants affected by cold, disease or insects, and wind. Some of these plants may be satisfactory for special situations but have been listed separately to indicate they probably are not suitable for general use in this area.

* Numbers in parentheses refer to Literature Cited, page 2.

Literature Cited

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4. Kelly, Stan. 1969. *Eucalyptus*. Thomas Nelson Ltd., Melbourne, Australia.
5. Martel, D. J., and George N. Fredeen. 1969. Plant materials for landscaping. Oregon State Univ. Ext. Bull. 758.
6. van de Werken, Hendrik. 1970. Fertilizing shade trees. Tenn. Farm and Home Science Prog. Report 72.
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Table 2. LANDSCAPE PERFORMANCE OF SELECTED TREES IN SEVERAL HEIGHT CATEGORIES AT NORTH WILLAMETTE EXPERIMENT STATION, AURORA, OREGON

Botanical and common name	Height		Width		Time ¹			Remarks	
	At Ultimate plant-height	After ing 4 yrs.	At plant-ing	After 4 yrs.	Foli-ation	Bloom	Fall color		Defo- liation
TREES 10-20 FEET									
<i>Acer buergerianum</i>									
Trident Maple	20	1.3	8.6	1.9	7.1	E	M	M	Good red fall color. New growth also red.
<i>Acer platanoides</i> 'Globe'									
Globe Norway Maple	20	6.3	11.0	1.0	5.8	M	M	M	Very dense globe shape.
<i>Cercis occidentalis</i>									
California Redbud	20	1.6	7.9	1.4	5.5	M	M	M	Purplish pink pea flower. Dark red new growth.
<i>Laburnum alpinum pendulum</i>									
Weeping Scotch Laburnum		5.5	5.8	2.4	3.1	M	M	L	Weeping habit. Height determined by grafting height.
<i>Magnolia</i> x 'Ann'									
Ann Magnolia	15	0.6	4.0	0.4	4.2	M	M	M	Flowers orchid outside, white inside, one of 8 similar varieties from U. S. National Arboretum.
<i>Magnolia</i> x 'Betty'									
Betty Magnolia	15	0.7	5.2	0.5	3.8	M	M	M	Flowers orchid outside, white inside. One of most floriferous of N. S. Nat'l Arboretum varieties.
<i>Magnolia</i> x 'Jane'									
Jane Magnolia	15	0.7	5.3	0.5	4.3	M	M	M	Flowers magenta outside, white inside. From U. S. National Arboretum.
<i>Magnolia</i> x 'Judy'									
Judy Magnolia	15	1.1	3.5	0.6	3.1	M	M	M	Flowers pink outside, white inside. Least vigorous flowering and growth of U. S. National Arboretum varieties.

Botanical and common name	Height			Width		Time ¹				Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation	Bloom	Fall color	Defoliation	
<i>Magnolia</i> x 'Pinky' Pinky Magnolia	15	1.1	6.5	0.8	5.4	M	M		M	Lightest-colored flowers of U. S. National Arboretum Magnolia varieties.
<i>Magnolia</i> x 'Randy' Randy Magnolia	15	1.0	3.8	0.8	4.3	M	M		M	Flowers magenta outside white inside. Grows as rounded shrub. U. S. Nat'l Arboretum.
<i>Magnolia</i> x 'Ricki' Ricki Magnolia	15	1.1	5.9	0.6	3.1	M	M		M	Orchid blooms over long period.
<i>Magnolia</i> x 'Susan' Susan Magnolia	15	0.8	5.2	0.4	3.5	M	M		M	Darkest purple-flowered of U. S. Nat'l Arboretum varieties.
<i>Magnolia stellata</i> Star Magnolia	20	2.8	4.9	1.5	4.0	M	E		M	Flowers over a long period.
<i>Rhamnus alaternus</i> 'John Edwards' John Edwards Italian Buckthorn	12	3.0	8.1	1.0	9.7	M	E			Evergreen shrub. Flowers insignificant.
<i>Rhus typhina laciniata</i> Cutleaf Staghorn Sumac	15	1.3	8.0	0.3	9.8	L	L	E	E	Excellent red-orange fall color. Sends up suckers.
TREES 20-30 FEET										
<i>Acer campestre</i> Hedge Maple	25	9.1	16.4	3.1	9.6	M	M		M	
<i>Acer capillipes</i>	30	2.6	10.2	1.7	7.5	M		M	M	Green and white striped bark. Orange fall color.
<i>Acer circinatum</i> Vine Maple	25	4.0	9.4	2.2	3.7	M			M	Fall color only with poor watering and fertilizing.
<i>Acer ginnala</i> Amur Maple	20	9.6	13.0	2.6	8.4	E	M	E	E	Yellow, orange and red fall color. Heavy seed producer.
<i>Acer griseum</i> Paperbark Maple	25	2.5	6.8	1.6	4.3	M		M	M	Interesting peeling bark. Very good red fall color.
<i>Acer truncatum</i> Purpleblow Maple	24	2.7	8.7	1.5	8.9	M		M	M	Good red fall color.
<i>Cercis siliquastrum album</i> White Judas Tree	30	2.9	9.4	2.5	6.7	M	M	M	M	White pea flower. Pale green new leaves.
<i>Cornus kousa chinensis</i> Chinese Dogwood	21	5.3	9.5	2.3	5.0	M	L	E	M	White flowers in June. Good red fall color.
<i>Crataegus oxyacantha</i> 'Paul's Scarlet' Paul's Scarlet Hawthorn	30	7.1	14.5	3.0	9.3	E	M		M	Attractive red flowers. Very dense, twiggy habit.
<i>Eucalyptus niphaphila</i> Snowland Eucalyptus	20	1.1	15.3	0.9	13.5	M				Evergreen. Gray foliage. Hardest eucalyptus in trial. Killed to ground by extended 5° F.
<i>Evodia danielli</i> Korean Evodia	25	4.4	10.1	1.6	6.2	E		M	M	Yellow fall color. Red fruit in October.
<i>Evodia henryi</i> Henry Evodia	24	6.6	12.4	1.9	6.8	E		M	M	Yellow fall color.
<i>Hovenia dulcis</i> Japanese Raisintree	30	3.7	9.9	1.1	6.9	M			M	No outstanding features as young tree.
<i>Koelreuteria paniculata</i> Panicked Goldraintree	30	2.2	7.5	1.7	5.3	E		L	M	Yellow flowers in summer. Interesting inflated seed pods.
<i>Laburnocytisus adami</i> Adam's Laburnocytisus	25	6.4	18.1	1.6	11.7	M	M		L	A graft hybrid. Pinkish-purple laburnum flowers.
<i>Laburnum vossii</i> Voss Goldenchain	30	9.3	13.9	1.8	8.0	M	M		L	Yellow flowers. Sparse growth.

Botanical and common name	Height			Width		Time ¹				Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation	Bloom	Fall color	Defoliation	
<i>Lagerstroemia indica</i>										
Crepe Myrtle	21	5.8	8.4	2.5	3.8	L	L	M	M	Bloom in late summer. Good red fall color. Slight twig dieback in cold winters.
<i>Magnolia kobus</i>										
Kobus Magnolia	30	3.1	8.0	1.5	5.4	M	E		M	Showy white flowers.
<i>Magnolia kobus</i> 'Wada's Memory'										
Wada's Memory Kobus Magnolia	30	1.5	5.6	0.5	3.1	M	M		M	White flowers. Less vigorous than 'Dr. Merrill'
<i>Magnolia soulangeana</i>										
Saucer Magnolia	25	2.3	5.9	1.3	4.2	M	E		L	Large pale pink flowers early.
<i>Magnolia</i> x 'Dr. Merrill'										
Dr. Merrill Magnolia	20	1.7	6.7	0.3	4.7	M	E		M	Heavy-blooming white.
<i>Malus floribunda</i>										
Japanese Flowering Crabapple....	30	6.8	12.7	3.3	13.9	E	E		L	Red buds opening to white flowers. Small yellow and red fruit.
<i>Oxydendron arboreum</i>										
Sorrel-tree		3.5	6.9	1.3	4.2	M	L	E	M	One of best red fall color plants. Good summer bloom.
<i>Parrotiopsis jacquemontana</i>										
Parrotiopsis	21	1.4	5.7	1.2	5.3	M	E	M	M	Cream-colored flowers early. Yellow fall color.
<i>Phellodendron amurense</i>										
Amur Corktree	30	1.5	7.7	0.5	6.8	E		E	E	Yellow fall color. Wide spreading habit.
<i>Prunus serrulata amanogawa</i>										
Amanogawa Flowering Cherry	20	6.9	13.3	0.4	3.5	M	M	M	M	Columnar white-flowering tree. Good red and yellow fall color.
<i>Prunus serrulata</i> 'Kwanzan'										
Kwanzan Flowering Cherry	25	3.3	14.3	0.3	5.2	M	M	M	M	Round, pink-flowering tree. Good red and yellow fall color.
<i>Quercus pontica</i>										
Pontic Oak	30	2.3	12.1	0.8	3.3	L			M	We are growing seedlings of a columnar selection. Leaves hang on into winter.
<i>Salix babylonica</i>										
Babylon Weeping Willow	30	7.1	15.6	4.0	24.2	E			L	Leaves drop while green.
<i>Styrax japonica</i> 'Kusan'										
Kusan Japanese Snowbell	30	0.9	6.1	0.6	4.2	E	M		L	White bell flowers. Subject to spring frost damage.
<i>Syringa amurensis japonica</i>										
Japanese Tree Lilac	30	3.4	8.5	0.6	3.5	E	L		E	Late white flowers. Bark cherry-like.
TREES 30-50 FEET										
<i>Acer rufinerve</i>										
Redvein Maple	36	1.4	8.5	0.7	5.4	E		M	M	Interesting green and white striped bark.
<i>Albizia julibrissin</i>										
Silktree	36	5.9	9.3	0.0	11.5	L	L		M	Wide-spreading, pink summer-flowering tree.
<i>Asimina triloba</i>										
Common Pawpaw	35	2.4	3.6	0.8	1.5	M		M	E	Yellow fall color. Three-petaled brown flower in fifth year.
<i>Asimina tribloba</i> 'Mary Foos Johnson'										
Mary Foos Johnson Common Pawpaw	35	3.5	5.2	1.7	2.0	M	M		E	Three-petaled brown flowers. May need cross pollination for fruiting.
<i>Carpinus caroliniana</i>										
American Hornbeam	36	7.0	14.4	3.0	11.0	M	E	E	M	Yellow, orange, and red fall color.
<i>Catalpa bignonioides</i>										
Southern Catalpa	45	1.7	6.0	0.4	5.1	M			M	Large triangular leaves.
<i>Cercis siliquastrum</i>										
Judas-Tree	30	5.3	14.6	3.8	15.0	M	M		L	Purplish-pink pea flower. Reddish-green new leaves.
<i>Cercis canadensis</i>										
Eastern Redbud	36	4.2	9.6	2.7	8.4	M	M		M	Pink pea flower.

Botanical and common name	Height			Width		Time ¹				Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation	Bloom	Fall color	Defo- liation	
<i>Chionanthus virginicus</i> White Fringetree	30	3.3	3.8	1.6	4.1	L	M		M	White flowers second year.
<i>Cladrastis lutea</i> American Yellowwood	50	5.6	9.7	0.6	5.4	M		E	M	Trees died back after planting. Good yellow fall color.
<i>Cornus florida</i> 'Cherokee Chief' Cherokee Chief Flowering Dogwood	40	3.2	6.7	1.0	3.4	M	M	E	M	Darkest red-flowered variety in trial.
<i>Cornus florida</i> 'Cherokee Princess' Cherokee Princess Flowering Dogwood	40	3.1	7.4	0.9	2.6	M	M	M	M	White-flowered. Red fall color.
<i>Cornus florida</i> 'Cloud 9' Cloud 9 Flowering Dogwood	40	2.7	6.7	1.5	4.2	M	M	M	M	Best white-flowered variety in trial. Very good red fall color.
<i>Cornus florida fastigiata</i> Upright Flowering Dogwood	40	2.4	6.5	0.6	2.9	M	M	E	E	White-flowered. Columnar growth. Red fall color.
<i>Cornus florida</i> 'Hillenmeyer White' Hillenmeyer White Flowering Dogwood	40	3.1	4.7	1.6	4.7	M	M		M	Three of 4 plants look sick or have died.
<i>Cornus florida plena</i> Double Flowering Dogwood	40	3.3	6.0	0.9	5.1	M	M	M	M	Double white flowers. Maroon-red fall color.
<i>Cornus florida</i> 'Rainbow' Rainbow Flowering Dogwood	40	4.0	5.4	1.7	3.9	M	M	E	M	Yellow and green leaves changing to orange and red in fall.
<i>Cornus florida rubra</i> (Ore.) Red Flowering Dogwood	40	3.9	7.5	2.0	4.7	M	M	E	M	Showy pink flowers and good red fall color.
<i>Cornus florida rubra</i> (Tenn.) Red Flowering Dogwood	40	2.6	6.7	1.0	5.5	L	M	E	M	Good red flowers in spring. Red fall color.
<i>Cornus florida salicifolia</i> Willowleaf Flowering Dogwood	40	1.8	2.3	0.9	3.0	M		M	M	Non-flowering. Very good fall color. Narrow, twisted leaves.
<i>Cornus florida</i> 'Springtime' Springtime Flowering Dogwood	40	2.4	5.2	0.8	5.7	M	M	E	M	White-flowered. Two of 4 plants died.
<i>Cornus florida welchi</i> Welch Flowering Dogwood	40	2.5	4.9	2.1	4.3	E	M	E	M	White-flowered. White and green leaves turn pink and maroon in fall.
<i>Cornus</i> 'White Wonder' White Wonder Dogwood	40	3.0	5.2	3.5	4.7	M	M	M	M	Hybrid between <i>C. florida</i> and <i>C. nuttali</i> . Red fall color.
<i>Diospyros kaki</i> 'Hana Fuyu' Hana Fuyu Oriental Persimmon	40	2.9	6.6	2.3	6.8	L			M	Large, glossy leaf.
<i>Magnolia fraseri</i> Fraser Magnolia	45	0.5	3.2	0.0	1.4	L			M	Leaves larger than those of most trees grown in this area.
<i>Parrotia persica</i> Persian Parrotia	50	1.1	4.8	0.9	3.5	E		M	L	Red new growth. Red and yellow fall color.
<i>Poncirus trifoliata</i> CES 838 Rubidoux Trifoliolate-Orange	35	2.5	5.6	1.3	3.7	M		M	M	Green stems with large thorns. Yellow fall color. White flowers fifth year.
<i>Poncirus trifoliata</i> CES 1717 Pomeroy Trifoliolate-Orange	35	3.6	5.2	1.9	4.1	M		M	M	Green stems with large thorns. Yellow fall color. White flowers fifth year.
<i>Pterostyrax corymbosa</i> Little Epaullettetree	45	1.3	8.2	0.0	4.1	E	M	M	L	White flowers. Yellow fall color.
<i>Pyrus calleryana</i> 'Bradford' Bradford Callery Pear	50	3.2	17.4	0.3	13.4	E	E		L	Upright habit; holds green leaves late. Blooms very early.
<i>Quercus douglasi</i> Blue Oak	20-60	3.0	6.4	0.8	4.5	M			L	Blue-green new leaves. Leaf size small for oak.

Botanical and common name	Height			Width		Time ¹				Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation	Bloom	Fall color	Defoliation	
<i>Robinia</i> 'Idaho'										
Idaho Locust	40	5.4	15.6	1.1	12.3	M	M		L	Pink pea flowers.
<i>Sorbus aucuparia</i>										
European Mountain Ash	45	8.6	18.0	0.0	6.9	E	M	M	M	Very good red-orange fruit in fall.
TREES 50-75 FEET										
<i>Acer negundo</i>										
Box Elder	60	11.9	16.1	3.0	9.0	E	M	E	E	Early yellow fall color.
<i>Acer negundo variegatum</i>										
Variegated Box Elder	60	8.0	13.1	2.5	8.0	M	M	E	E	Interesting green and white leaves.
<i>Acer rubrum</i> 'Autumn Flame'										
Autumn Flame Red Maple	60	6.3	14.5	1.1	10.8	M	E	E	E	Round-headed tree with excellent red fall color. First tree to color.
<i>Aesculus carnea brioti</i>										
Briot Red Horsechestnut	75	5.6	8.7	2.1	5.3	M	M		M	Interesting red flowers.
<i>Betula pendula</i>										
European White Birch	60	9.6	21.0	4.0	12.2	M	E	M	M	White bark develops in third year. Aphid and leaf miner problems.
<i>Betula pendula gracilis</i>										
Cutleaf Weeping Birch	60	8.6	16.6	2.6	6.1	M	M	E	E	White bark develops in fourth year. Aphids and a few leaf miners.
<i>Betula pendula verrucosa</i>										
Clump Birch	60	9.5	15.9	5.1	12.4	M	E	M	L	White bark develops in fourth year. Aphids and leaf miner.
<i>Carpinus betulus fastigiata</i>										
Upright European Hornbeam	60	5.0	18.3	0.5	4.8	E		M	M	Upright habit. Yellow fall color.
<i>Cedrela sinensis</i>										
Chinese Toona	70	5.2	9.1	0.0	2.2	M		E	M	Large compound leaves, reddish when emerging.
<i>Cornus nuttalli</i>										
Pacific Dogwood	75	3.2	6.9	1.6	2.9	M	M	E	M	White blooms in spring and orange-red fall color.
<i>Cornus nuttalli</i> 'Corigo Giant'										
Corigo Giant Pacific Dogwood	75	1.1	9.0	0.1	5.0	M		M	M	Very vigorous. Large-leaved and eventually large-flowered native Dogwood variety.
<i>Cornus nuttalli</i> 'Goldspot'										
Goldspot Pacific Dogwood	75	5.0	8.5	2.1	4.6	E	M&L	M	L	Blooms April and August. Yellow-spotted leaves which become red in fall.
<i>Corylus colurna</i>										
Turkish Hazel	75	7.5	14.4	2.5	7.5	E		E	E	Yellow fall color. Corky bark.
<i>Davidia involucrata</i>										
Dovetree	60	2.2	7.8	1.1	4.9	M			M	Grown for its interesting flowers. Has not flowered in 5 growing seasons.
<i>Diospyros virginiana-K</i>										
Common Persimmon	75	5.5	7.3	3.8	6.4	L		E	E	Maroon and yellow fall color. Fruit in 5th year.
<i>Evodia hupehensis</i>										
Hupeh Evodia	60	6.2	11.3	2.1	7.9	E	L		M	Fruit capsules maroon red in late September and October. Most interesting Evodia in trial.
<i>Fraxinus ornus</i>										
Flowering Ash	60	3.6	9.5	0.0	3.9	M		M	M	Yellow fall color with some purple.
<i>Liquidambar orientalis</i>										
Oriental Sweetgum	60	3.6	7.7	1.9	4.3	E		M	L	Pastel yellow-orange fall color.
<i>Lithocarpus densiflorus</i>										
Tanoak	75	1.7	5.4	0.5	4.5	L				Evergreen. Slow starting but can grow rapidly.
<i>Magnolia sprengeri</i>										
Sprenger Magnolia	60	1.4	8.0	0.2	3.0	M			M	
<i>Magnolia virginiana</i>										
Sweetbay Magnolia	60	1.7	3.2	0.5	1.9	M				Semi-evergreen.
<i>Pistacia chinensis</i>										
Chinese Pistache	75	1.6	7.2	1.5	5.5	E		L	L	Good red fall color.
<i>Quercus aliena</i>										
Oriental White Oak	60	0.8	6.3	0.5	4.5	M			L	Brown leaves persist all winter.

Botanical and common name	Height		Width		Time ¹		Fall Bloom color	Defoliation	Remarks	
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation				
<i>Quercus chrysolepis</i> Canyon Live Oak	60	3.0	7.5	1.8	7.6	L			Hardest evergreen oak in trial. Small, holly-like leaves.	
<i>Quercus coccinea</i> Scarlet Oak	75	4.9	18.0	1.1	10.2	L	M	L	Very good red fall color. Holds leaves.	
<i>Quercus ilex</i> Holly Oak	60	1.4	5.1	0.7	3.9	L			Evergreen; some shoot-kill at 8° F.	
<i>Quercus lobata</i> California White Oak	40-125	3.6	9.7	0.8	7.0	M		L		
<i>Quercus palustris</i> Pin Oak	75	5.3	16.5	2.7	12.4	L	M	L	Good red fall color. Holds brown leaves into winter.	
<i>Quercus phellos</i> Willow Oak	50	5.6	19.5	2.3	15.5	L	M	M	Willow-shaped leaves with yellow to red fall color.	
<i>Quercus suber</i> Cork Oak	60	1.3	3.8	0.3	4.6	L			Evergreen. Defoliated but not killed at 5° F.	
<i>Quercus wislizeni</i> Interior Live Oak	70	3.0	11.4	0.8	8.5	M			Evergreen. Slight dieback at 8° F. Partially defoliated by extended 5° F.	
<i>Robinia pseudoacacia</i> ² Black Locust	75	8.6	20.7	1.7	14.5	M		M	Fast growing but produces suckers from roots. Three years' growth.	
<i>Salix alba tristis</i> Niobe Weeping Willow	75	3.9	21.9	1.4	25.4	E	L	M	Wide-spreading and fast-growing. Yellow twigs and fall color.	
<i>Sophora japonica</i> Japanese Pagoda Tree	75	10.5	15.0	2.6	15.2	M	E	M	Round-headed with yellow fall color.	
<i>Stewartia pseudocamellia</i> Japanese Stewartia	60	3.5	8.3	1.8	4.4	E	L	E	M	White flowers June-July. Good red fall color.
<i>Zelkova serrata</i> 'Village Green' Village Green Zelkova	75	6.5	15.9	5.3	16.0	M		M	L	Interesting bronze fall color.
TREES 75-100 FEET										
<i>Acer platanoides</i> 'Cleveland' Cleveland Norway Maple	90	10.5	16.9	2.0	4.7	M	M	M	M	Narrow, upright habit.
<i>Acer platanoides</i> 'Crimson King' Crimson King Norway Maple	90	6.1	15.1	0.0	5.9	M			M	Red foliage all summer.
<i>Acer platanoides drummondii</i> Variegated Norway Maple	90	3.0	15.8	0.0	5.6	M		E	E	Interesting green and white leaves.
<i>Acer platanoides</i> 'Emerald Queen' Emerald Queen Norway Maple	90	7.3	21.8	0.0	10.0	M	M	M	M	Good yellow fall color.
<i>Acer platanoides</i> 'Fassen's Redleaf' Fassen's Redleaf Norway Maple	90	9.6	15.2	1.5	5.8	M	M	M	E	Red foliage all summer. Best fall color and earliest defoliating of redleaf types.
<i>Acer platanoides</i> 'Green Lace' Green Lace Norway Maple	90	7.5	12.9	2.6	10.9	M			M	Cutleaf form of Norway Maple.
<i>Acer platanoides</i> 'Royal Red' Royal Red Norway Maple	90	7.0	14.4	0.2	5.8	M		M	M	Red foliage all summer.
<i>Acer platanoides schwedleri</i> Schwedler Norway Maple	90	7.5	15.3	0.9	6.3	M	M	M	E	Leaves red in spring, dark green in summer. Yellow fall color.
<i>Acer platanoides</i> 'Summershade' Summershade Norway Maple	90	5.6	17.6	0.9	11.5	M	M	M	M	Wide branch angle. Young trees vary in appearance.
<i>Acer platanoides</i> 'Superform' Superform Norway Maple	90	7.0	19.7	0.5	9.8	M		M	M	Yellow fall color.
<i>Acer pseudoplatanus</i> (seedlings) Sycamore Maple	90	5.0	13.5	0.8	5.4	L	M	M	M	Variable in growth (9.1 to 15.1 feet at 4 years).
<i>Acer pseudoplatanus purpureum</i> Spaeth Sycamore Maple	90	10.8	22.0	1.6	9.8	M	M	M	M	Purple underside of leaves.
<i>Acer rubrum</i> 'October Glory' October Glory Red Maple		6.1	17.2	2.1	8.5	M	E	M	M	Very good red fall color on oval-shaped tree.

Botanical and common name	Height			Width		Time ¹				Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation	Bloom	Fall color	Defoliation	
<i>Betula maximowicziana</i> Monarch Birch	90	5.4	10.3	1.5	6.0	M	E	E	E	Yellow fall color. Creamy white bark in fourth year. Less leaf minor damage than European White Birch.
<i>Betula papyrifera</i> Paper Birch	90	6.0	15.9	1.9	7.6	M	M	E	E	Good yellow fall color. White bark fourth year. Less leaf minor than European White Birch.
<i>Celtis occidentalis</i> Common Hackberry	100	6.6	11.6	2.1	11.3	M		M	M	
<i>Cercidaphyllum japonicum</i> Katsuratree	60-100	4.0	10.9	2.6	5.1	E		E	E	Tends to have several trunks. Good yellow-orange fall color.
<i>Fagus sylvatica atrapunica</i> Purple European Beech	90	3.5	10.5	1.4	6.6	L		M	L	Purple leaves all summer. Brown leaves persist in winter.
<i>Halesia monticola</i> Mountain Silverbell	90	3.5	9.7	0.3	5.4	E	M	E	M	White bell-shaped flowers. Yellow fall color.
<i>Magnolia grandiflora</i> 'Madison' Madison Southern Magnolia	90	3.1	7.5	1.2	6.9	L	L			Tends to defoliate more in winter than other <i>M. grandiflora</i> varieties.
<i>Magnolia grandiflora</i> 'Majestic Beauty' Majestic Beauty Southern Magnolia	90	2.5	6.3	0.4	6.5	L	L			Evergreen. Largest-leaved <i>M. grandiflora</i> variety in trial.
<i>Magnolia grandiflora</i> 'Pioneer' Pioneer Southern Magnolia	90	4.8	8.8	3.1	8.6	L	L			Evergreen. White flowers. This variety is taller and more open-growing than most.
<i>Magnolia grandiflora</i> 'Russet' Russet Southern Magnolia	90	2.9	7.2	1.5	5.6	L	L			Evergreen. More winter injury than most <i>M. grandiflora</i> varieties.
<i>Magnolia grandiflora</i> 'Samuel Sommer' Samuel Sommer Southern Magnolia	90	1.9	5.7	1.1	5.4	L	L			Evergreen. White flowers.
<i>Magnolia grandiflora</i> 'St. Mary' St. Mary Southern Magnolia	90	2.2	6.8	1.0	6.4	L	L			Evergreen. White flowers. Blooms soonest after planting of <i>M. grandiflora</i> varieties.
<i>Magnolia grandiflora</i> 'Victoria' Victoria Southern Magnolia	90	1.9	7.1	0.3	5.9	L	L			Evergreen. White flowers. Shows least winter damage of <i>M. grandiflora</i> varieties in trial.
<i>Nyssa sylvatica</i> Black Gum	90	2.8	5.7	0.8	5.0	L		E	E	Excellent red fall color.
<i>Platanus acerifolia</i> London Planetree	100	6.4	17.8	0.0	9.5	M			M	Bark starting to exfoliate at five years.
<i>Papulus hybrid</i> Poplar	50-90	6.5	32.2	2.5	14.5	M			M	Rapid-growing but suckers from roots.
<i>Quercus rabur fastigiata</i> Pyramidal English Oak	75-150	5.1	16.0	1.0	6.9	L			L	Columnar tree retaining brown leaves in winter.
<i>Tilia americana</i> American Linden	90	6.6	15.5	0.6	8.6	M			E	Large leaves. Aphids can be a problem.
<i>Tilia cordata</i> Little-Leaved Linden	90	7.3	14.8	2.9	9.6	L	L		E	Aphids can be a problem. Variable habit.
<i>Tilia cordata</i> 'Greenspire' Greenspire Littleleaf Linden	90	6.1	16.6	2.4	13.2	L	L		E	Uniform growth. Aphids can be a problem.
<i>Zelkova serrata</i> Zelkova	90	7.2	16.9	6.3	18.3	M		M	M	Interesting bronze fall color.

Botanical and common name	Height		Width		Time ¹		Fall Bloom color	Defoliation	Remarks	
	Ultimate plant-height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation				
TREES OVER 100 FEET										
<i>Acer rubrum</i> 'Armstrong' Armstrong Red Maple	120	4.8	20.2	1.0	5.5	M	E	M	Upright habit.	
<i>Acer rubrum</i> 'Bowhall' Bowhall Red Maple	120	5.2	17.7	0.8	4.4	M	E	E	Red fall color. Upright habit.	
<i>Acer rubrum</i> 'Red Sunset' Red Sunset Red Maple	120	5.7	19.3	2.3	10.1	M	E	E	Good red fall color.	
<i>Acer rubrum</i> 'Scanlon' Scanlon Red Maple	120	10.8	19.8	2.6	4.9	M	E	M	Red fall color. Upright habit.	
<i>Acer rubrum</i> 'Schlesenger' Schlesenger Red Maple	120	8.4	21.0	3.4	11.3	M	E	E	Yellow, orange and red fall color.	
<i>Acer saccharum</i> Sugar Maple	120	9.9	16.1	2.4	5.5	M		M	Yellow-orange fall color.	
<i>Acer saccharum</i> 'Green Mountain' Green Mountain Sugar Maple	120	8.3	15.5	1.1	6.1	L		E		
<i>Acer saccharum</i> 'Sweet Shadow' Sweet Shadow Sugar Maple	120	10.1	16.0	3.9	5.3	L		M	Orange-brown fall color. Cutleaf type.	
<i>Ginkgo biloba</i> (seedlings) Ginkgo	120	4.9	9.9	1.1	3.8	M		M		
<i>Ginkgo biloba</i> 'Autumn Gold' Autumn Gold Ginkgo	120	2.6	6.7	0.3	3.2	M		M		
<i>Ginkgo biloba</i> 'Fairmont' Fairmont Ginkgo	120	2.4	5.7	0.0	3.2	M		M		
<i>Ginkgo biloba</i> 'Roosevelt' Roosevelt Ginkgo	120	3.5	7.6	0.8	2.6	M		M		
<i>Gleditsia triacanthos</i> 'Sunburst' Sunburst Honeylocust	135	7.8	11.8	2.0	8.7	L	L	E	M	New foliage yellow, turning green later. Yellow fall color.
<i>Liquidambar formosana</i> Formosa Sweetgum	120	2.7	8.0	1.1	5.8	M		L	Grows late in fall. Leaves and twigs often frosted.	
<i>Liquidambar formosana</i> 'Afterglow' Afterglow Formosa Sweetgum ..	120	4.3	9.0	1.4	3.9	M		L	Does not develop fall color well in this area.	
<i>Liquidambar styraciflua</i> (cuttings) American Sweetgum	125	5.4	14.5	2.2	7.3	M		M	L	Yellow to red fall color.
<i>Liquidambar styraciflua</i> (seedlings) American Sweetgum	125	7.3	14.3	3.3	7.4	L		M	L	Yellow, orange and red fall color.
<i>Liquidambar styraciflua</i> 'Burgundy' Burgundy American Sweetgum	125	4.0	10.3	0.8	4.9	M		L	L	Does not develop fall color well in this area.
<i>Liquidambar styraciflua</i> 'Festival' Festival American Sweetgum	125	3.7	11.2	1.0	4.5	M		L	L	Does not develop fall color well in this area.
<i>Liquidambar styraciflua</i> 'Palo Alto' Palo Alto Sweetgum	125	3.2	10.1	0.9	3.9	L		E	L	Red fall color.
<i>Liriodendron tulipifera</i> Tuliptree	150	11.0	16.9	2.6	7.3	E		E	M	Yellow fall color.

Table 3. TREES SUBJECT TO WIND DAMAGE

Botanical and common name	Height		Width		Time ¹		Fall Bloom color	Defoliation	Remarks
	Ultimate plant-height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation			
* <i>Celtis sinensis</i> Chinese Hackberry	60	5.4	18.5	2.0	10.0	M		L	Three of 4 plants had limbs broken by wind. Removed third year.
* <i>Eucalyptus dalrympleana</i> Mountain Gum	120	5.2	12.0	3.7	13.6	E			Single plant broken off at base because of girdling root, second year. Hardy at 21° F.
<i>Gleditsia triacanthos inermis</i> Thornless Honeylocust	135	8.1	16.1	0.3	13.5	L	L	E	Limbs break in wind. Flowers insignificant.

Botanical and common name	Height			Width		Time ¹				Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation	Bloom	Fall color	Defoliation	
* <i>Prunus cerasifera</i> 'Thundercloud' Thundercloud Flowering Plum....	24	9.5	16.3	2.2	8.4	E	E	M	L	Plants tipped over by strong wind 10-2-67 after 3 years.
* <i>Ulmus</i> 'Improved Coolshade' Improved Coolshade Elm	75	8.0	18.0	1.5	14.6	M			M	Subject to limb breakage during growing season. Removed after 3 years.
* <i>Ulmus parvifolia sempervirens</i> Evergreen Elm	50	4.0	8.5	0.5	9.6	M			L	Not evergreen. Poor growth habit. Wind damage. Removed after 3 years.
* <i>Ulmus parvifolia sempervirens</i> 'Drake' Drake Evergreen Elm	50	4.0	7.4	0.7	9.9	M				Partial leaf retention. Poor growth habit. Removed after 3 years.

Table 4. TREES SUBJECT TO INSECT OR DISEASE PROBLEMS

Botanical and common name	Height			Width		Time ¹				Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation	Bloom	Fall color	Defoliation	
<i>Alnus cordata</i> Italian Alder	45	2.3	20.9	1.5	13.8	M			L	Fast-growing. Leaves damaged by leaf miner. Leaves green when dropping.
* <i>Alectryon subcinereum</i> Smooth Rambutan		2.8		1.0						Died from root rot first summer.
<i>Crataegus oxyacantha contorta</i> Contorted Hawthorn	4	1.5	2.0	1.2	2.1	M	M		E	Defoliates early with leaf spot each year.
<i>Eucryphia</i> 'Nymansay' Nymansay Eucryphia	25	2.5	4.4	0.5	2.2	M		L		Evergreen but damaged at 8° F. Plants die from root rot. Killed at 5° F.
<i>Fraxinus velutina glabra</i> Smooth Ash	20-45	7.5	13.9	1.8	6.5	M			M	Foliage disfigured by disease each summer.
* <i>Nothofagus dombeyi</i> Southern Falsebeech	90	5.8	7.4	2.8	4.5	L				Died of root rot during second growing season.
<i>Platanus racemosa</i> California Sycamore	120	2.0	7.9	1.6	4.4	M			M	Dieback from disease each year.

Table 5. TREES SUBJECT TO COLD DAMAGE

Botanical and common name	Height			Width		Time ¹				Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foli-ation	Bloom	Fall color	Defoliation	
* <i>Brachychiton populneum</i> Bottle tree	60	1.7	2.0	0.9	1.5					One year's growth. Winter-killed at 23° F.
* <i>Cinnamomum glanduliferum</i> Nepal Camphortree	40	1.1	7.5	0.8	6.8	M				Three year's growth. Killed to ground at 8° F. Slight damage at 21° F. Evergreen.
* <i>Clethra arborea</i> Lily-of-the-Valley Clethra	25	1.9		0.8						Killed at 18° F before first-year growth measurements taken.
* <i>Cunonia capensis</i> African Red Alder	50	2.9	2.6	1.4	2.5					Killed at 8° F after one year's growth.
<i>Eriobotrya japonica</i> Loquat	20	1.6	3.2	1.8	3.1	M				Normally evergreen. Subject to frost injury most years.

Botanical and common name	Height		Width		Time ¹		Fall Defoliation	Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foliation		
<i>*Eucalyptus agglomerata</i> Blueleaved Stringybark		4.3	10.2	3.0	5.8	E		Killed at 8° F after 2 years' growth. Hardy at 21° F.
<i>Eucalyptus aggregata</i> Black Gum	40	4.0	19.2	2.0	10.0	E		Willow-like evergreen leaves. Damaged by one day at 8° F. Killed by extended 5° F.
<i>*Eucalyptus andreana</i>		3.2	12.1	4.4	10.7	E		Killed at 8° F after 2 years' growth. Hardy at 21° F.
<i>Eucalyptus archeri</i>	90	1.3	23.3	1.4	16.2	M	L	Killed to ground after 4 years. Sprouted from base. Hardy at 18° F.
<i>Eucalyptus bicostata</i> Eurabbie Eucalyptus	125	1.5	22.0	0.9	15.0	M		Killed after 4 years by 8° F. Hardy at 21° F.
<i>*Eucalyptus caleginosa</i>	60	5.1	9.4	3.3	5.7	E		Killed at 8° F after 2 years' growth. Hardy at 21° F.
<i>Eucalyptus cinerea</i> Silverdollar Tree	45	3.0	19.8	2.0	13.2	M	M	Killed to ground after 4 years by 8° F. Hardy at 18° F.
<i>Eucalyptus coccifera</i> Ridgetop Eucalyptus	100	1.7	23.3	1.9	17.5	M	L	Killed at 8° F after 4 years. Hardy at 21° F.
<i>*Eucalyptus codoncarpa</i>		5.2	8.2	3.0	6.5	E		Killed at 8° F after 2 years' growth. Hardy at 21° F.
<i>Eucalyptus delegatensis</i> Delegate Eucalyptus	200	2.3	23.7	1.6	10.2	M		Killed at 8° F after 4 years' growth. Hardy at 21° F.
<i>*Eucalyptus eremophilla</i>	10-25	0.9	1.1	0.2	1.6			Killed at 18° F after one year's growth.
<i>*Eucalyptus fastigata</i> Brown-Barrel Eucalyptus	150	4.6	11.4	3.4	8.5	E		Killed at 8° F after 2 years' growth. Hardy at 21° F.
<i>Eucalyptus Gunnii</i> (Breona) Cider Eucalyptus	90	1.2	26.4	1.0	7.4	M		Killed by extended 5° F. Survived at 15° F.
<i>Eucalyptus gunnii</i> (Leffley) Cider Eucalyptus	90	1.8	24.3	1.9	16.4	E	M	Blue-green evergreen leaves. Top damaged at 8° F. Killed at 5° F.
<i>Eucalyptus gunnii</i> (Whareja) Cider Eucalyptus	90	1.8	27.0	1.6	17.0	E		Blue-green evergreen leaves. Top injury at 8° F. Killed at 5° F.
<i>*Eucalyptus laevopinea</i> Silvertop Stringybark	105	3.5	8.8	2.9	8.8	E		Killed at 8° F after 2 years' growth. Hardy at 21° F.
<i>*Eucalyptus lehmanni</i> Bushy Yate Eucalyptus	20-30	1.7		2.1				Top killed at 21° F. Complete kill at 8° F.
<i>*Eucalyptus maculata</i> Spotted Gum Eucalyptus	150	4.8	3.9	3.0	5.1			Top killed at 21° F first year. Complete kill at 8° F second year.
<i>*Eucalyptus megacornuta</i>	20-25	1.5	1.9	0.6	1.2			Killed at 18° F after one year's growth.
<i>*Eucalyptus neglecta</i>	15	0.7	19.5	1.8	18.5	M	M	Top killed at 8° F after 4 years' growth. Sprouted. Hardy at 21° F.
<i>Eucalyptus niphophila</i> (Mn) Snowland Gum Eucalyptus	20	1.3	12.6	0.7	8.2	M		Killed by extended 5° F. Survived one day at 8° F.
<i>*Eucalyptus nitada</i> Shinyleaf Eucalyptus		3.2	5.3	1.5	4.2			Killed at 8° F after one year's growth.
<i>Eucalyptus parvifolia</i> Nimitybelle Eucalyptus	24	0.6	21.0	0.5	12.7	M		Fine-leaved species. Killed by extended 5° F.
<i>Eucalyptus pauciflora</i> (Breona) Snow Gum Eucalyptus	40	1.0	16.8	1.1	10.4	M		Killed by extended 5° F. Survived at 15° F.
<i>Eucalyptus pauciflora</i> (Eddyville) Snow Gum Eucalyptus	40	0.3	10.3	0.4	7.3	M		Killed by extended 5° F. Survived at 15° F.

Botanical and common name	Height		Width		Time ¹		Fall Defoliation	Remarks
	Ultimate height	At planting	After 4 yrs.	At planting	After 4 yrs.	Foliation		
<i>Eucalyptus perriniana</i> Spinning Leaf Snow Gum	27	3.6	20.7	1.9	14.5	M	E	Only minor foliage burn at 8° F. Grey-green leaves. Killed by extended 5° F.
<i>Eucalyptus perriniana</i> (Hyanville) Spinning Leaf Snow Gum	27	2.4	19.0	1.7	17.8	M	M	Top killed at 8° F after 4 years' growth. Sprouted. Hardy at 18° F.
* <i>Eucalyptus platypus</i> Round-Leaved Moort	20	1.2	0.9	1.0	1.1			Killed at 18° F after one year's growth.
<i>Eucalyptus pulverulenta</i> Dollarleaf Eucalyptus	27	1.7	19.2	2.5	18.5	E	E	Top killed at 8° F after 4 years' growth. Sprouted. Hardy at 18° F.
<i>Eucalyptus pulverulenta</i> (NWES) Dollarleaf Eucalyptus	27	0.8	14.0	0.7	10.5	M		Killed by extended 5° F. Survived at 15° F.
* <i>Eucalyptus scoparia</i> Wallangarra White Gum	30-40	4.4	10.8	3.7	11.2	E		Killed at 8° F after 2 years' growth. Hardy at 21° F.
<i>Eucalyptus simmondsi</i>	55	1.6	17.6	1.8	12.4	E	M	Top killed at 8° F after 4 years' growth. Sprouted. Hardy at 18° F.
* <i>Eucalyptus spathulata</i> Swampmallet Eucalyptus	15-20	0.9	1.4	0.5	0.9			Killed at 18° F after one year's growth.
<i>Eucalyptus subcrenulata</i> (Hartz Mts.)	180	1.5	20.0	1.3	11.3	M	L	Top killed at 8° F after 4 years' growth. Sprouted but died of disease.
<i>Eucalyptus subcrenulata</i> (Oregon)	180	1.5	25.0	1.0	12.5	E		Foliage and stem damage at 8° F. Hardy at 18° F.
<i>Eucalyptus urnigera</i> Urnpod Eucalyptus	45	2.4	23.4	1.5	12.3	E	E	Top killed at 8° F after 4 years' growth. Sprouted but died of disease.
<i>Firmiana simplex</i> Chinese Parasol Tree	40	3.0	4.7	0.0	1.8	L	L	Top dieback every winter. Interesting large leaves.
* <i>Fraxinus uhdei</i> Shamel Ash	30	6.5	6.2	1.8	4.2	E		Top damaged at 21° F. Killed second year at 8° F.
* <i>Fraxinus uhdei</i> 'Tomlinson' Tomlinson Ash	30	5.5	8.0	1.0	4.1	E		Top killed at 8° F after 2 years' growth. Sprouted. Not evergreen.
* <i>Geijera parvifolia</i>		1.5	3.0	1.0	2.5	L		Killed at 8° F after 2 years' growth. Top damage at 24° F.
<i>Maytenus boaria</i> Mayten	35	3.4	7.2	1.0	3.2	E		Evergreen but defoliates and has dieback at 20° F. Killed at 5° F.
<i>Melaleuca linarifolia</i> Melaleuca	20	4.3	8.9	1.6	5.1	M	L	Evergreen. Feathery cream flowers. Killed at 8° F in third year. Hardy at 22° F.
* <i>Quillaja saponia</i> Soapbark Tree	60	2.0	5.4	1.0	4.1	M		Evergreen. Tip damage at 21° F. Killed at 8° F in third year.
* <i>Sophora secundiflora</i> Texas Mountain Laurel	35	0.6	0.7	0.4	0.5			Evergreen but killed back at 21° F. Removed second year.
<i>Sophora tetraptera</i> Fourwing Sophora	42	1.4	5.5	0.9	4.7	M		Evergreen. Winter-killed at 5° F.
* <i>Trachycarpus fortunei</i> Fortune's Windmill Palm	20	1.5	2.0					Killed first winter at 8° F. Larger plants survive better.
* <i>Tristania laurina</i> Kanooka Tristania	20-30	5.7	6.7	0.8	3.2	L	L	Evergreen. Yellow flowers. Hardy at 21° F. Killed at 8° F after 3 years.

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