



MORTON ARBORETUM

JOY MORTON · FOUNDER

BULLETIN OF POPULAR INFORMATION

LISLE, ILLINOIS

GROWTH RATES OF DECIDUOUS TREES

Knowing that every planter of trees is intensely interested in the comparative rate of growth of the various species and varieties, the Morton Arboretum has for a number of years been making a periodical check on the growth of its test tree plots. Using as a basis for this investigation six* "average" trees selected at random from each plot, we have determined by actual measurement the comparative figures presented here.

The following explanations refer to the column headings accompanying the tabulation:

Average growth, 1936 and 1937: computed by averaging the growths of the six "typical" trees over a period of two years. Growing conditions during 1937 were generally favorable, notwithstanding the moisture deficiency of late summer and early fall. It should be remembered, however, that 1936 was a year of intense heat and unprecedented drouth. Furthermore, the winter of 1935-36 was unusually severe.

Average growth, 1934 and 1935: computed as above. Ideal growing conditions prevailed in 1935 but 1934 was characterized by heat and drouth.

Average height: determined by averaging the heights of the six designated trees. Based on measurements made in November, 1937.

Average caliper: determined by averaging the combined calipers (diameters), at three feet above the ground line, of the six marked trees. Recorded in November, 1937.

Additional data includes the date of establishment of the plot, together with the size of the plants used.

Average Growth 1936 and 1937	Average Growth 1934 and 1935	Average Height 1937	Average Caliper 1937
ASH			
American or White, <i>Fraxinus americana</i> (For. Rd. Plot), Pltd. f. 1924—Ht. 7-11 ft.			
2.99 ft.	0.97 ft.	26.5 ft.	4.54 in.
Black, <i>Fraxinus nigra</i> (For. Rd. Plot), Pltd. f. 1924 s. 1925—Ht. 2-4 ft.			
0.83 ft.	0.84 ft.	12.19 ft.	2.01 in.
Blue, <i>Fraxinus quadrangulata</i> (For. Rd. Plot), Pltd. s. 1925—Ht. 7-8 ft.			
1.67 ft.	1.2 ft.	18.9 ft.	3.36 in.
European, <i>Fraxinus excelsior</i> (Sch. Plot), Pltd. s. 1929—Ht. 2-2½ ft.			
2.57 ft.	4.55 ft.	17.21 ft.	2.32 in.

*In small plots three trees furnish the basis for measurement.

Abbreviations used: Pltd. = planted; s = spring; f = fall; Ht. = height; ft. = feet; in. = inches.

Average Growth 1936 and 1937	Average Growth 1934 and 1935	Average Height 1937	Average Caliper 1937
Green, <i>Fraxinus pennsylvanica lanceolata</i> (Mixed Plot), Pltd. s. 1929—Ht. 1½-2 ft.			
4.57 ft.	3.84 ft.	20.8 ft.	3.69 in.
<i>Fraxinus pubinervis</i> (Oak. Dr. Plot), Pltd. s. 1930—Ht. 2 ft.			
2.37 ft.	0.79 ft.	9.92 ft.	1.23 in.

BIRCH

Gray, <i>Betula populifolia</i> (Sch. Plot), Pltd. f. 1924—Ht. 6-9 ft.			
2.75 ft.	2.25 ft.	25.9 ft.	3.17 in.
River, <i>Betula nigra</i> (Valley Rd. Plot), Pltd. 1927—Ht. 6 ft.			
3.74 ft.	4.13 ft.	26.7 ft.	3.3 in.

CATALPA

Western, <i>Catalpa speciosa</i> (For Rd. Plot), Pltd. s. 1929—Ht. 1½-2 ft.			
1.1 ft.	2.72 ft.	17.26 ft.	3.43 in.

CHERRY

Black, <i>Prunus serotina</i> (Oak. Dr. Plot), Pltd. s. 1931—Ht. 2-3 ft.			
2.23 ft.	4.97 ft.	15.48 ft.	2.63 in.
Sargent, <i>Prunus serrulata sachalinensis</i> (Oak. Dr. Plot), Pltd. s. 1932—Ht. 3-5 ft.			
2.41 ft.	4.3 ft.	11.32 ft.	2.75 in.

CORK TREE

Amur, <i>Phellodendron amurense</i> (Hem. Hill Plot), Pltd. f. 1927—Ht. 2-3 ft.			
1.2 ft.	0.66 ft.	12.27 ft.	3.32 in.

ELM

American or White, <i>Ulmus americana</i> (Mix. D. & C. Plot), Pltd. s. 1926—Ht. 1-3 ft.			
3.53 ft.	6.1 ft.	31.37 ft.	7.14 in.
Cedar, <i>Ulmus crassifolia</i> (Valley Rd. Plot), Pltd. s. 1929—Ht. 2-3 ft.			
5.06 ft.	5.41 ft.	23.44 ft.	5.17 in.
Moline, <i>Ulmus moliniana</i> (Valley Rd. Plot), Pltd. s. 1928—Ht. 5-6 ft.			
4.47 ft.	4.35 ft.	30.38 ft.	4.63 in.
Siberian or Chinese, <i>Ulmus pumila</i> (Valley Rd. Plot), Pltd. f. 1926—Ht. 2-3 ft.			
3.9 ft.	4.4 ft.	39.13 ft.	6.45 in.

HACKBERRY

Hackberry, Sugarberry, <i>Celtis occidentalis</i> (Sch. Plot), Pltd. f. 1924—Ht. 5-6 ft.			
2.05 ft.	1.39 ft.	20.6 ft.	3.81 ft.

HICKORY

Shagbark, <i>Carya ovata</i> (Sch. Plot), Pltd. s. 1925—Ht. 10-12 in.			
2.32 ft.	2.18 ft.	11.96 ft.	2.06 in.

HONEY LOCUST

Common, <i>Gleditsia triacanthos</i> (Oak. Dr. Plot), Pltd. 1923—Ht. 1-3 ft.			
3.9 ft.	4.5 ft.	32.6 ft.	3.77 in.

HORSE CHESTNUT

Ohio Buckeye, <i>Aesculus glabra</i> (For. Rd. Plot), Pltd. s. 1925—Ht. 2-3 ft.			
1.28 ft.	1.23 ft.	14.81 ft.	4.46 in.
Red, <i>Aesculus carnea</i> (Mixed D. & C. Plot), Pltd. s. 1928—Ht. 2-3 ft.			
1.94 ft.	1.52 ft.	11.43 ft.	3.5 in.

Average Growth 1936 and 1937	Average Growth 1934 and 1935	Average Height 1937	Average Caliper 1937
KENTUCKY COFFEE TREE			
Kentucky Coffee Tree, <i>Gymnocladus dioeca</i> (Sch. Plot), Pltd. f. 1924—Ht. 2.5 ft.			
0.86 ft.	0.8 ft.	13.73 ft.	2.96 in.
LINDEN			
American Linden or Basswood, <i>Tilia glabra</i> (Sch. Plot), Pltd. f. 1924—Ht. 1.6 ft.			
2.4 ft.	2.43 ft.	19.63 ft.	3.76 in.
MAPLE			
Norway, <i>Acer platanoides</i> (For. Rd. Plot), Pltd. f. 1924—Ht. 3.4 ft.			
2.52 ft.	2.38 ft.	14.71 ft.	3.09 in.
Red, <i>Acer rubrum</i> (For. Rd. Plot), Pltd. f. 1924—Ht. 4.5 ft.			
2.23 ft.	1.57 ft.	16.03 ft.	3.0 in.
Sugar, <i>Acer saccharum</i> (Mix. D. & C. Plot), Pltd. s. 1929—Ht. 2.3 ft.			
3.12 ft.	3.65 ft.	17.31 ft.	2.34 in.
MULBERRY			
Russian, <i>Morus alba tatarica</i> (Oak. Dr. Plot), Pltd. s. 1930—Ht. 3-3½ ft.			
2.1 ft.	4.04 ft.	17.83 ft.	4.24 in.
OAK			
English, <i>Quercus robur</i> (For. Plot Rd.), Pltd. s. 1928—Ht. 6-8 in.			
1.51 ft.	2.75 ft.	10.7 ft.	1.49 in.
Pin, <i>Quercus palustris</i> (Sch. Plot), Pltd. f. 1924—Ht. 3-5 ft.			
3.32 ft.	2.86 ft.	20.9 ft.	4.48 in.
Red, <i>Quercus rubra</i> (Mixed D. & C. Plot), Pltd. s. 1926—Ht. 1-3 ft.			
3.18 ft.	3.05 ft.	19.06 ft.	4.16 in.
Shingle, <i>Quercus imbricaria</i> (For. Rd. Plot), Pltd. 1923.			
2.2 ft.	3.37 ft.	23.45 ft.	6.45 in.
Swamp White, <i>Quercus bicolor</i> (For. Rd. Plot), Pltd. f. 1926—Ht. 2-3 ft.			
2.69 ft.	2.71 ft.	20.07 ft.	4.75 in.
Yellow Chestnut Oak, <i>Quercus Muhlenbergii</i> (Lake Rd. Plot), Pltd. 1923—Ht. 6-8 ft.			
1.95 ft.	3.03 ft.	22.51 ft.	4.11 in.
OSAGE ORANGE			
<i>Maclura pomifera</i> (For. Plot Rd.), Pltd. s. 1928—Ht. 2-3 ft.			
1.45 ft.	4.09 ft.	15.25 ft.	2.3 in.
PEAR			
Ussurian, <i>Pyrus ussuriensis</i> (Valley Rd. Plot), Pltd. s. 1929—Ht. 3-4 ft.			
3.03 ft.	2.48 ft.	17.88 ft.	2.48 in.
POPLAR			
Balm of Gilead, <i>Populus candicans</i> (For. Rd. Plot), Pltd. 1927—Ht. 2-3 ft.			
4.8 ft.	2.83 ft.	40.28 ft.	6.59 in.
Carolina, <i>Populus canadensis Eugenei</i> (Hem. Hill Plot), Pltd. s. 1928—Ht. 2-3 ft.			
5.1 ft.	5.11 ft.	37.15 ft.	5.31 in.
Cottonwood, <i>Populus balsamifera</i> (Hem. Hill Plot), Pltd. s. 1928—Ht. 2-3 ft.			
4.94 ft.	5.97 ft.	33.4 ft.	5.75 in.
<i>Populus berolinensis</i> (Pop. Plots—Oak. Dr.), Pltd. s. 1932—Ht. 5-7 ft.			
6.18 ft.	7.91 ft.	22.95 ft.	3.3 in.

Average Growth 1936 and 1937	Average Growth 1934 and 1935	Average Height 1937	Average Caliper 1937
<i>Populus brevifolia</i> (Pop. Plots—Oak. Dr.), Pltd. s. 1932—Ht. 2-4 ft. 3.38 ft.	5.59 ft.	13.93 ft.	1.83 in.
<i>Populus canadensis</i> (Oak. Dr. Plot), Pltd. 1930—Ht. 5-6 ft. 6.54 ft.	9.51 ft.	33.08 ft.	5.0 in.
<i>Populus caudina</i> (Pop. Plots—Oak. Dr.), Pltd. s. 1932—Ht. 5-7 ft. 5.56 ft.	9.58 ft.	25.41 ft.	3.98 in.
<i>Populus fastigiata sorbierensis</i> (Pop. Plots—Oak. Dr.), Pltd. s. 1932—Ht. 6-8 ft. 6.38 ft.	9.61 ft.	28.03 ft.	4.85 in.
<i>Populus generosa</i> (Pop. Plots—Oak. Dr.), Pltd. s. 1932—Ht. 2-4 ft. 5.75 ft.	7.16 ft.	20.36 ft.	2.81 in.
<i>Populus incrassata</i> (Pop. Plots—Oak. Dr.), Pltd. s. 1932—Ht. 7-10 ft. 5.25 ft.	8.55 ft.	25.46 ft.	4.38 in.
<i>Populus robusta</i> (P. angulata x nigra plantierensis), Pltd. s. 1931—Ht. 3-4 ft. 7.85 ft.	10.09 ft.	31.33 ft.	3.96 in.
<i>Populus schroederiana</i> (Pop. Plots—Oak. Dr.), Pltd. s. 1932—Ht. 3-5 ft. 4.65 ft.	6.93 ft.	17.1 ft.	2.2 in.
<i>Populus serotina Wilsoni</i> (Pop. Plots—Oak. Dr.), Pltd. s. 1932—Ht. 6-8 ft. 5.7 ft.	8.51 ft.	24.5 ft.	5.33 in.
<i>Populus vistulensis</i> (Pop. Plots—Oak. Dr.), Pltd. s. 1932—Ht. 4-6 ft. 5.98 ft.	9.38 ft.	24.55 ft.	3.35 in.

SYCAMORE

Sycamore, Buttonwood, <i>Platanus occidentalis</i> (Gr. Pit Rd.), Pltd. s. 1928—Ht. 2-3 ft. 6.18 ft.	5.57 ft.	29.23 ft.	4.12 in.
---	----------	-----------	----------

TULIP TREE

Tulip Poplar, <i>Liriodendron Tulipifera</i> (For. Plot Rd.), Pltd. s. 1928—Ht. 12-18 in. 1.66 ft.	2.38 ft.	13.0 ft.	2.13 in.
---	----------	----------	----------

WALNUT

Black, <i>Juglans nigra</i> (Valley Rd. Plot—West), Pltd. s. 1927—Ht. 2-3 ft. 2.2 ft.	1.11 ft.	11.35 ft.	2.25 in.
Japanese, <i>Juglans Sieboldiana</i> (Lake Rd. Plot), Pltd. 1922. 2.56 ft.	1.33 ft.	12.56 ft.	3.15 in.
White or Butternut, <i>Juglans cinerea</i> (Valley Rd. Plot), Pltd. 1924—Ht. 1½-2 ft. 1.66 ft.	1.41 ft.	13.59 ft.	2.72 in.

YELLOW-WOOD

Virgilia, <i>Cladrastis lutea</i> (For. Plot Rd.), Pltd. s. 1927—Ht. 1-1½ ft. 0.93 ft.	0.51 ft.	8.19 ft.	1.52 in.
---	----------	----------	----------

E. L. KAMMERER.

BOARD OF TRUSTEES

MRS. JOY MORTON	MRS. JOSEPH M. CUDAHY, Chairman	JOSEPH M. CUDAHY
WIRT MORTON	MARK MORTON	EDWARD H. STEARNS
	STERLING MORTON	DANIEL PETERKIN
	★	★
CLARENCE E. GODSHALK	E. LOWELL KAMMERER	JOHN VAN GEMERT
Superintendent	Arboriculturist	Propagator

PUBLISHED MONTHLY BY THE MORTON ARBORETUM, LISLE, ILLINOIS
SUBSCRIPTION FEE \$1.00 A YEAR ★ SINGLE COPIES 10c