

TREES SUITABLE FOR TEXAS HIGH PLAINS LANDSCAPES

by George Tereshkovich

The comfort and attractiveness of most cities, parks, campuses, highways, rural or urban homesites can be greatly improved through suitable plantings of shade and ornamental trees and other woody plants. This is particularly true in the northwestern portion (panhandle) of Texas, where practically no native trees or other woody plants are indigenous. The vegetation on the High Plains is variously classified as mixed-prairie, short-grass prairie, and in some locations as tall-grass prairie (15).

The Texas High Plains area, part of the Great Plains region, is a relatively level, high plateau, with an elevation of between 3000-4500 feet, sloping gently toward the southeast (15). Tree culture on the Southern High Plains presents a problem for those who do not understand the great diversity of soil, climate, and precipitation in the vast area. The culture of trees and other woody plants in this semi-arid environment is wholly unlike that of any other area in the United States.

Successful perennial plants on the High Plains are adapted in various ways to the rigorous climate of the area. Drought, or low and widely scattered rainfall; low humidity; sudden and extreme temperature changes (occasional lows below 0°F); warm, constant dry winds of spring and fall; and cloudless days with high light intensity all make survival impossible for many plants.

Average annual rainfall is 15-21 inches, usually low or none during the winter, high in April and May, low in mid-summer, and high in September and October (15). Adequate supplemental watering of trees is frequently not practical in the plains, and in such cases their survival depends largely on rain or snow (3, 5, 8, 13, 15). The average frost-free period is 179-225 days (15).

Soils range in surface texture from clays on hard land sites in the north, to medium textures on mixed-land sites and sands of the Southern High Plains. Surface soils are generally underlain with caliche accumulations at depths of 2-5 feet (15).

Furthermore, nutrient imbalances inhibit tree growth in some areas because of outright deficiencies or because essential nutrients are unavailable due to high soil pH. Imbalances cause chlorosis of the leaves of some tree species, reduced growth, and frequently cause premature death.

At best, most of the trees planted in the Southern High Plains do not live as long as trees growing in more favorable regions of the United States. Those trees that are planted in the (semi-arid) Southern High Plains are used predominantly in urban landscapes for shade, aesthetics, windbreaks, and deterrents to noise pollution. In rural areas, trees function as windbreaks for homesites and roadside rest or recreation areas, and as shelter belts to protect cropland and, to some extent, wildlife.

Trees that succeed without supplemental watering after becoming established and capable of enduring the adversity of the Southern High Plains (the panhandle of West Texas) environment are listed in Table 1 (1, 2, 4, 7, 9, 10, 14, 15). These are the trees that make this area a more pleasant place to live.

Table 1. Trees suitable for semi-arid landscapes

<i>Scientific name and common name</i>
<i>Carya illinoensis</i> , Pecan
<i>Catalpa bignonioides</i> , Catalpa, Southern
<i>Celtis occidentalis</i> , Hackberry, Common
<i>Cercis canadensis</i> , Redbud
<i>Chilopsis linearis</i> , Willow, Dessert
<i>Cupressus arizonica</i> , Arizona Cypress
<i>Elaeagnus angustifolia</i> , Russian Olive
<i>Fraxinus pennsylvanica</i> , Ash, Green
<i>Ginkgo biloba</i> , Ginkgo
<i>Gleditsia triacanthos</i> , Honeylocust, Common
<i>Gymnocladus dioica</i> , Kentucky Coffee Tree
<i>Juglans microcarpa</i> , Walnut, Little Walnut or River Walnut
<i>Juniperus scopulorum</i> , Rocky Mountain Juniper
<i>Juniperus virginiana</i> , Eastern Red Cedar

Koelruteria paniculata, Golden Raintree

Malus ioensis (Pyrus), Crabapple, Prairie
Malus spp. (Pyrus), Crabapple, Flowering
Morus alba (male), Mulberry, Fruitless
Morus microphylla, Mulberry, Texas
Morus alba tatarica, Mulberry, Russian

Pinus edulis, Pinyon Pine
Pistacia chinensis, Chinese Pistacia
Platanus occidentalis, Sycamore
Populus deltoides, Cottonwood, Eastern
Populus sargentii, Cottonwood, Plains
Prosopis glandulosa, Mesquite, Honey
Prunus spp., Cherry, Flowering
Prunus spp., Plum, Flowering
Prunus armeniaca, Apricot
Prunus cerasifera pissardi, Purple Leaf Plum
Prunus persica, Peach, Flowering

Quercus macrocarpa, Bur Oak
Quercus shumardii, Shumard Oak

Rhus cotinus, Smoke Tree

Sapindus drummondii, Western Soapberry or Wild China Tree
Sophora japonica, Japanese Pagoda Tree

Tamarix spp., Salt Cedar

Ulmus crassifolia, Elm, Cedar
Ulmus parvifolia, Elm, Little Leaf
Ulmus pumila, Elm, Siberian or Chinese

Vitex agnus castus, Chaste Tree

Zizyphus jujuba, Chinese Date (Jujube)

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