Shade Trees for New Mexico

Guide H-426

Revised by Curtis Smith[1]

Cooperative Extension Service • College of Agricultural, Consumer and Environmental Sciences

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Less than one-third of New Mexico is naturally forested. The rest of the state is natural grassland or desert, with small areas of tundra. Thus, trees planted in our cities and around our homes must grow under climatic conditions and in soil that does not naturally support tree growth. Yet trees are valuable in our environment, making our surroundings more pleasant and ameliorating the effects of development and other human activity. They cool our cities, cleanse the air, and absorb noise. New Mexicans need tree species that can tolerate the soil and environmental conditions of an arid or semi-arid region. Also, because many trees are not native to our state, they require special care.

SELECTING A TREE

There are a number of factors to consider when selecting a tree for landscaping, including tree size, water requirements, temperature and other weather conditions, and potential problems. All trees listed in Table 1 will grow in New Mexico. This table does not represent an exhaustive list of all potential trees for New Mexico, but it does provide good selections for a variety of situations. A tree should never outgrow its site, yet it must be large enough to fulfill the purpose for which it was planted. Become familiar with the mature size of a tree in New Mexico before deciding to plant that species. (Table 1 lists the height of various tree species. Consult your county agent for more information on tree size.) Species native to areas with acid soil may be 15–20% smaller in New Mexico than in their native environments.

The tree you choose must also be able to survive on the amount of irrigation it will receive. Some trees grow naturally in streambeds and need large quantities of water. Others can survive on very little water once they are established. Plan an irrigation system that will meet the needs of the trees you choose. Minimum temperatures and other climatic factors affect tree survival. For example, some trees do poorly in southern New Mexico because the summers are too hot and dry for them. Figure 1 shows three growing zones for New Mexico; these zones are based on temperature and other weather conditions. Some trees listed in Table 1 can be grown in all the zones, others only in the warmest or coldest regions. Be sure a tree species will survive where you live before deciding to purchase it.

Trees grow at different rates. As a general rule, the faster a tree grows, the weaker its wood and the more likely it is to be attacked by insect pests and diseases. Slow-growing trees, on the other hand, are difficult to transplant and take years to reach salable size. Therefore, large, slow-growing trees are hard to find in nurseries. The best choices are to select a tree with a medium growth rate, or to select a fast-growing tree and plant a slow-growing tree nearby to replace it when the fast-growing tree dies.

Other features to look for when selecting a tree are the texture or apparent coarseness of the tree (both in leaf and without leaves), leaf color, presence of flowers and fruit, whether there is any fruit drop, and whether the pollen presents a potential allergy problem. In the case of dioecious trees (trees that have male and female blossoms on different plants), a male tree may present a pollen problem while a female does not. Trees with attractive flowers do not generally have high allergy potential. For many trees listed in Table 1, information on pollen

[1] Extension Horticulture Specialist, Department of Extension Plant Sciences and Agricultural Science Center at Los Lunas, New Mexico State University, Las Cruces.

allergy potential is unavailable, either because the tree has not been extensively studied or because the pollen allergy potential is so low that medical references do not consider it worth mentioning.

PLANTING A TREE

When planting trees in urban areas or other areas disturbed by construction, soil compaction caused by heavy equipment used in construction must be remedied. The soil has been compacted in these areas to the extent that neither water nor oxygen can adequately penetrate the soil. Site preparation for tree planting should consist of digging or rototilling at least 8 to 12 inches deep. This restores the pore space in the soil, permitting permeation of water and oxygen and facilitating the spread of roots throughout the soil. This results in more rapid tree establishment and a root system that better provides water and nutrients and supports the tree against New Mexico winds. The larger the area prepared by this process, the better able the tree is to grow in the landscape. Do not limit soil preparation to only the size of the rootball of the tree to be planted. Organic matter (peat or compost) may be added over this prepared area to encourage root extension. Once the soil has been loosened over a large area, dig a hole in this area of prepared soil large enough to contain the roots of the tree. Remove containers from around the roots of container-grown trees and cut through any circling roots to encourage growth of new roots and reduce the potential for girdling by the circling roots as the trunk enlarges. Also, cut large roots that had emerged through drainage holes in the container. Remove wire or twine from the trunk and roots of balled and burlapped trees. After placing the tree into the planting hole, cut any chicken wire or heavy wire cages at the bottom of the planting hole and remove the wire. Roll any burlap to the bottom of the hole to prevent interference with root growth outward into the prepared soil of the planting site. Backfill the hole with soil identical to the soil at the prepared planting site; do not add additional compost or peatmoss.

CARING FOR TREES

Water all trees regularly for the first two years after they are planted. After two years, reduce the watering frequency for trees with low and medium water requirements. Each time you water any tree, water until the soil is moistened to at least 30 in. deep. Trees need nitrogen fertilizer only when they are growing less each year than is normal for the species. Consult your nursery or county agent to determine appropriate growth rates. When trees need to be fertilized, spread 1 lb of actual nitrogen (5 lb ammonium sulfate) per 1,000 sq ft beginning under the dripline (farthest extent of branches) and extending outward several feet beyond the dripline, and water it into the soil. Add 3 lb of superphosphate at the same time as the nitrogen. Only fertilize trees in the spring or early summer. Otherwise, if you apply nitrogen fertilizer in late summer, trees will be more susceptible to freeze injury. With early training young trees will produce good form and need less pruning when they are mature. Check with your county Extension agent for information on proper pruning techniques.

Original author: Lynn Ellen Doxon, former Extension Horticulture Specialist

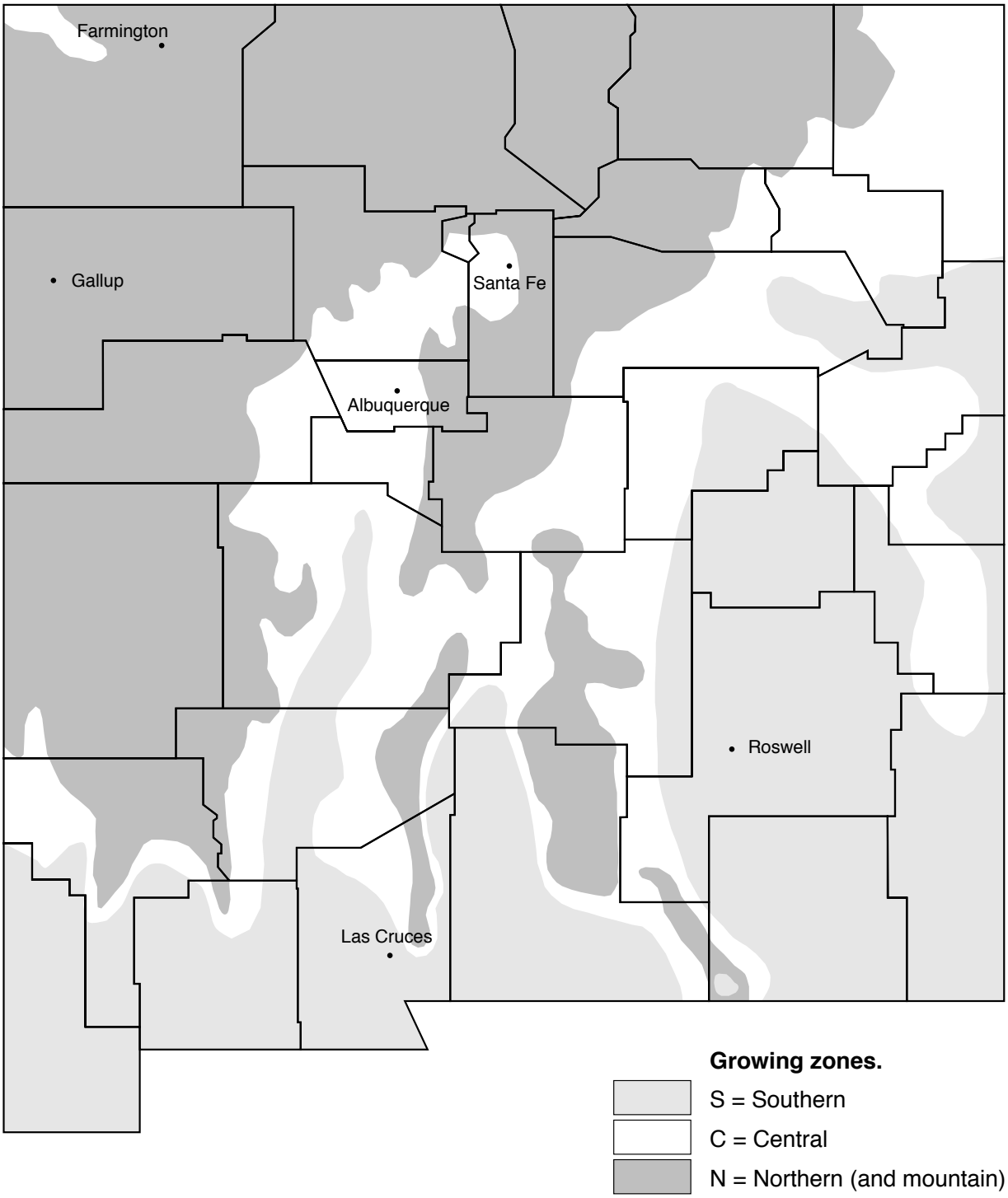

Figure 1. **Planting zones in New Mexico. (From "Climatological data, annual summary-New Mexico 1982." National Weather Service, National Oceanic and Atmospheric Administration, U.S. Dept. of Commerce.)**

Table 1. Selected Tree Species for New Mexico

Scientific name	Common name	Water use	Pollen allergy potential	Growing zone	Selection & planting criteria	Potential problems	Height
Cercis occidentialis	Western redbud	M	?	C,N,S	Sh,Fl		16’
Acacia greggii	Catclaw acacia	L	?	S	A	T	20’
Albizia julibrissin var. *rosea*	Mimosa	M	L	C,S	Fl	D,I,F	20’
Forestiera neomexicana	New Mexico olive	M	? (D)	C,N,S			20’
Fraxinus gregii	Littleleaf ash	M	?	S		I	20’
Prosopis glandulosa	Mesquite	L	?	S	A	F,T	20’
Prunus virginiana var. *melanocarpa*	Chokecherry	M	R	C,N	Fl	Su	20’
Ptelea trifoliata	Hoptree	M	?	C,S	Sh	Su	20’
Rhamnus cathartica	Buckthorn	H	?	C,N,S			20’
Sophora secundiflora	Mescal bean	M	?	S		P	20’
Chilopsis linearis	Desert willow	L	R	C,S	Fl	F,W	25’
Chilopsis x *Catalpa*	Chitalpa	M	R	C,N,S	Fl	D	25’
Robinia neomexicana	New Mexico locust	M	L	C,N,S	Fl	T,P,F	25’
Ungnadia speciosa	Mexican buckeye	M	?	C,S	Fl		25’
Vitex agnus-castus	Chaste tree	M	?	C,S	Fl		25’
Celtis reticulata	Western hackberry	M	L	C,S			30’
Cercis canadensis	Eastern redbud	H	?	C,N,S	Sh,Fl		30’
Cotinus coggygria	Smoketree	M	?	C,S	Fa		30’
Crataegus phaenopyrum	Washington hawthorn	H	R	C,S,N	Fa,Fl	T	30’
Prunus americana	American plum	H	R	C,N,S	Fl	I	30’
Sorbus acuparia	Mountain ash	H	?	N	Fa	D,I	30’
Ziziphus jujuba	Chinese date	M	?	C,S		Su,F	30’

Scientific name	Common name	Water use	Pollen allergy potential	Growing zone	Selection & planting criteria	Potential problems	Height
Crataegus laevigata	Hawthorn	H	R	C,S,N	Fl	S,T	35’
Fraxinus oxycarpa ‘Raywood’	Raywood ash	H	M (D)	C,N,S	Fa	I	35’
Koelreuteria paniculata	Golden raintree	M	?	C,S	Fl,A	F	35’
Pistachia chinensis	Chinese pistache	M	R	S	Fa		35’
Melia azedarach cv. Umbraculiformis	Texas umbrella tree, chinaberry	L	?	C,N,S	A	W,F	40’
Quercus gambelii	Gambel oak	M	M	C,N,S	Hi	F	40’
Sapindus drummondii	Soapberry	M	?	C,S	Fa	F	40’
Juglans major	Arizona walnut	H	M	C,S		F	50’
Maclura pomifera	Osage orange	M	H(D)	C,N,S	A	I,F	50’
Robinia x *ambigua*	Idaho locust	M	L	C,N,S	Fl	P	50’
Robinia pseudoacacia	Black locust	M	L	C,N,S	Fl	D,I,P	50’
Ulmus parvifolia	Chinese elm, lacebark elm	M	?	C,S			50’
Cladrastis lutea	American yellowwood	H	?	C,N	Fl,A		50’
Pyrus calleryana	Callery pear	H	?	C,S	Fa,Fl		50’
Celtis occidentalis	Hackberry	M	L	C,N,S	A	D,I	60’

KEY:

Water use
- L = low
- M = medium
- H = high

Growing zone
- S = Southern
- C = Central
- N = Northern and mountain

Pollen allergy
- L = low
- M = medium
- H = high
- R = rarely
- (D) = dioecious
- ? = No information available

Selection & planting criteria
- Fl = flowers
- A = alkaline soils
- Fa = fall color
- Hi = high altitudes
- We = wet areas
- Sh = shade

Potential problems
- D = diseases
- I = insects
- W = weak wood
- F = dropped fruit
- T = thorns
- P = poisonous plant parts
- Su = suckers (male & female plants)

Table 1. Selected Tree Species for New Mexico (continued)

Scientific name	Common name	Water use	Pollen allergy potential	Growing zone	Selection & planting criteria	Potential problems	Height
Fraxinus pennsylvanica	Green ash	H	H(D)	C,N,S	Hi	I	60’
Paulownia tomentosa	Empress tree	H	?	C,S	Fl	W,F	60’
Quercus emoryi	Emory oak	H	M	C,S		F	60’
Carpinus betulus	European hornbeam	H	?	N			60’
Gymnocladus dioicus	Kentucky coffeetree	M	?	C,N,S		F	70’
Populus tremuloides	Quaking aspen	H	L(D)	N	Fa,Hi	W,D,I	70’
Tilia cordata	Littleleaf linden	H	?	C,N	A	Su	70’
Sophora japonica	Japanese pogoda	M	?	C,S	Fl	F,P	75’
Catalpa speciosa	Catalpa	M	L	C,N,S	Fl	D,I,W,F	80’
Gleditsia triacanthos var. *inermis*	Thornless honey locust	H	?	C,N,S		I,D	80’
Platanus wrightii	Arizona sycamore	H	M	C,S		F	80’
Populus fremontii	Valley cottonwood	H	H(D)	C,N,S	We	W	80’
Quercus macrocarpa	Bur oak	H	M	C,N,S		F	80’
Tilia americana	American linden	H	?	C,N,S	A	I	80’
Zelkova serrata	Japanese zelkova	H	?	C,S			80’
Carya illinoinensis	Pecan	H	M	C,S		I,D,F	100’

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