

Ornamentals: Landscaping: Special Problems FILE

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ORNAMENTAL PERENNIAL PLANTS TOLERANT OF SALINE SOILS OF THE DESERT AREAS OF KERN COUNTY

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This is a list of ornamental perennial plant materials adapted to the saline soils and the desert climatic conditions of high temperatures, arid winds, low rainfall and low humidity in the San Joaquin Valley floor and the Mojave Desert areas of Kern County.

Plants having above average tolerance of total salts in the soil or in the irrigation water are so noted by an asterisk * behind the botanical name. The plants that have the highest tolerance of total salts in the soil or in the irrigation water are so noted by a double asterisk ** behind the botanical name. Plants having a tolerance of above normal boron content in the soil and irrigation water are so noted by a "B" behind the botanical name.

Plants that are check marked 'Hardy' are known to endure minimum temperatures of 0° F. to 10° F. typical of Zone 7 of the U.S.D.A. Hardiness Map.

Some plants such as the Liquidamber sp. may tolerate above average total salts in the soil and water but are adversely affected by too much lime or calcium carbonate in the soil. In the Mojave Desert there are many locations which contain caliche, a cemented layer of various thicknesses of calcium carbonate in the soil profile. This may vary as to depth in the profile. Caliche may impede verticle root development and water drainage, besides causing lime-induced chlorosis. For trees

and deep rooted shrubs, it is advisable to break through the caliche layer below the plant before planting. The chemical reaction in the soil from too much lime is the binding or tying up of the available iron ions so that certain plants are unable to take up or utilize this nutrient; hence iron deficiency may become acute. The visual symptoms of lime-induced chlorosis are interveinal yellowing with the veins the last part of the leaves to turn yellow. Eventually the leaves may turn brown or black as they scorch out. If correction of the iron deficiency is not accomplished, branch die-back may occur from the terminals with plant decline resulting.

In western calcareous soils correction of lime-induced chlorosis is best accomplished by applying to the soil the iron chelate Sequestrene 138 Fe according to the directions on the label. Soil sulfur worked into the surface soil at the rate of 4 to 5 lbs. per 100 square feet of soil area may help by slowly reducing the soil pH and aiding water penetration. Adequate soil drainage and aeration are also helpful.

Some plants subject to lime-induced chlorosis and included in the plant list are *Acacia melanoxydon* (Black acacia), *Callistamen lanceolatus* (Bottle-brush), *Eucalyptus* sp., *Fraxinus velutina* (Arizona or 'Modesto' ash), *Liquidamber styraciflua* (Sweet gum) and *Vitis labrusca* (American grape varieties).

Plants in alphabetical order by Botanical Name.

Plants in Alphabetical Order by Botanical Name

<u>Botanical Name</u>	<u>Common Name</u>	<u>Vine</u>	<u>Shrub</u>	<u>Tree</u>	<u>Drought Tolerant</u>	<u>Hardy</u>
<i>Abelia grandifolia</i>	Glossy abelia		x			x
<i>Acacia farnesiana</i> *	Sweet acacia			x	x	
<i>Acacia melanoxylon</i>	Black acacia			x	x	
<i>Acacia pendula</i>	Weeping acacia			x	x	
<i>Acacia retinodes</i>	Floribunda acacia			x	x	
<i>Acer negundo californicum</i>	California boxelder			x		x
<i>Acer saccharinum</i>	Silver maple			x		x
<i>Agave sp. *</i>	Century Plant		x		x	
<i>Ailanthus altissima</i> ** B	Tree of heaven			x	x	x
<i>Albizia julibrissin</i>	Silk tree or Mimosa			x		x
<i>Alnus glutinosa</i>	Black alder			x		x
<i>Aloe sp. *</i>	Aloe		x		x	
<i>Antigonon leptopus</i>	Queen's wreath	x				
<i>Arundo donax</i> *	Giant reed		x		x	x
<i>Asparagus plumosus</i>	Fern asparagus	x				
<i>Atriplex lentiformis breweri</i> **	Brewer saltbrush		x		x	x
<i>Baccharis pilularis</i> * B	Dwarf coyote brush		x			x
<i>Berberis thunbergii</i>	Japanese barberry		x			x
<i>Bignonia radicans</i>	Trumpet vine	x				x
<i>Bougainvillea spectabilis</i>	Purple bougainvillea	x				
<i>Broussonetia papyrifera</i>	Paper mulberry			x	x	x
<i>Buddleia alternifolia</i> *	Fountain butterfly bush		x		x	x

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<i>Cassia artemisioides</i> *	Feathery Cassia		X			X
<i>Callistamen lanceolatus</i> **	Bottle brush		X			
<i>Carya illionensis</i>	Pecan			X		X
<i>Casuarina</i> sp. *	Beefwood			X	X	
<i>Catalpa speciosa</i>	Western catalpa			X		X
<i>Cedrus deodara</i> *	Indian or Deodar cedar			X		X
<i>Celtis australis</i>	Hackberry			X		X
<i>Celtis laevigata</i>	Mississippi hackberry			X		X
<i>Cephalanthus occidentalis</i> *	Buttonwillow		X	X		X
<i>Ceratonia siliqua</i> *	Carob			X	X	
<i>Cercidium torreyanum</i>	Palo verde			X	X	
<i>Cercis occidentalis</i>	Western redbud		X	X		X
<i>Cercocarpus betuloides</i> *	Mountain mahogany		X		X	X
<i>Chilopsis linearis</i>	Desert willow		X	X	X	X
<i>Cortaderia selloana</i>	Pampas grass		X		X	X
<i>Cotinus coggygria</i>	Smoke tree		X	X		X
<i>Cotoneaster horizontalis</i> B	Rock cotoneaster		X			X
<i>Cotoneaster pannosa</i>	Cotoneaster		X			X
<i>Cotoneaster parneyi</i>	Red Clusterberry		X			X
<i>Cupressus arizonica</i> * B	Arizona cypress			X	X	X
<i>Cupressus sempervirens</i> * B	Italian cypress			X		X
<i>Cupressus forbesii</i>	Tecate cypress			X		X
<i>Dalea spinosa</i>	Smoke tree			X	X	X
<i>Diospyros kaki</i>	Japanese Persimmon			X		X

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<i>Dodonaea viscosa</i> 'purpurea'	Hop Bush		x		x	
<i>Dracaena australis</i> *	Dracena		x	x	x	
<i>Elaeagnus angustifolia</i> *	Russian olive			x	x	x
<i>Elaeagnus pungens</i>	Silver berry		x			x
<i>Eremocitrus glauca</i> *	Australian desert lime		x	x	x	x
<i>Eriogonum arborescens</i> *	Santa Cruz Island buckwheat		x			
<i>Eriogonum fasciculatum</i> *	California buckwheat		x			
<i>Eucalyptus camaldulensis</i> * B	Red Gum			x	x	
<i>Eucalyptus rudis</i> * B	Desert Gum			x	x	
<i>Euonymus japonica</i> * B	Evergreen Euonymus		x			x
<i>Fallugia paradoxa</i>	Apache plume		x		x	x
<i>Feijoa sellowiana</i>	Pineapple guava		x	x		
<i>Ficus carica</i>	Fig			x	x	
<i>Ficus pumila</i>	Creeping fig	x				
<i>Fouquieria splendens</i> *	Ocotillo		x		x	x
<i>Fraxinus velutina</i> * B	Arizona and 'Modesto' ash			x		x
<i>Fremontia mexicana</i> *	Southern flannel bush		x	x	x	x
<i>Gelsemium sempervirens</i>	Carolina Jessamine	x				x
<i>Gleditsia triacanthos inermis</i>	Honey locust			x		x
<i>Grevillia robusta</i>	Silk oak			x		

Botanical Name	Common Name	Drought				
		Vine	Shrub	Tree	Tolerant	Hardy
<i>Hedera helix</i>	English Ivy	x				x
<i>Heteromeles arbutifolia</i> B	Toyon		x			x
<i>Hibiscus</i> sp. *	Hibiscus		x			
<i>Hyptis emoryi</i>	Desert lavender		x		x	x
<i>Jacaranda acutifolia</i> *	Jacaranda			x		
<i>Jasminum</i> sp.	Jasmine	x	x			x
<i>Juglans hindsii</i>	Northern California Black Walnut			x	x	x
<i>Juniperus californica</i> *	California juniper			x	x	x
<i>Juniperus chinensis pfitzeriana</i> *	Pfitzer juniper		x			x
<i>Juniperus horizontalis</i> ** B	Creeping juniper		x			x
<i>Juniperus procumbens nana</i> *	Dwarf Japanese juniper		x			x
<i>Juniperus sabina tamariscifolia</i> *	Savin juniper		x			x
<i>Juniperus scopulorum</i> *	Rocky Mountain juniper			x		x
<i>Koelreuteria paniculata</i>	Golden raintree			x		x
<i>Lagerstroemia indica</i>	Crepe Myrtle		x	x		x
<i>Lantana</i> sp. **	Lantana		x			
<i>Larrea tridentata</i> **	Creosote bush		x		x	x
<i>Lavatera assurgentiflora</i>	Tree mallow		x			
<i>Leonotis leonurus</i>	Lions ears		x		x	
<i>Leucophyllum texanum</i>	Texas ranger		x		x	x
<i>Libocedrus decurrens</i>	Incense cedar			x		x
<i>Ligustrum japonicum</i> * B	Japanese privet		x			x

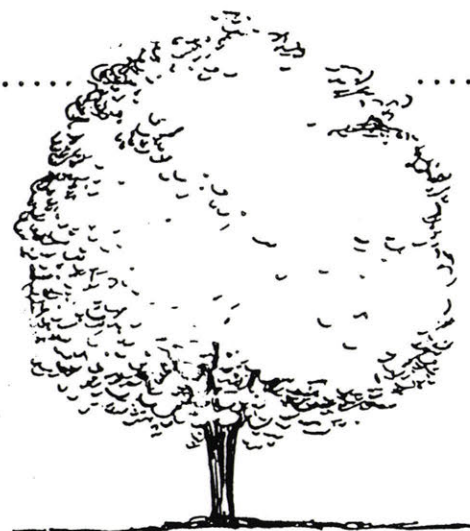
<u>Botanical Name</u>	<u>Common Name</u>	<u>Vine</u>	<u>Shrub</u>	<u>Tree</u>	<u>Drought Tolerant</u>	<u>Hardy</u>
<i>Ligustrum lucidum</i> *	Chinese privet			X		X
<i>Ligustrum ovalifolium</i> *	California privet		X			X
<i>Ligustrum texanum</i> **	Wax-leaf privet		X			X
<i>Liquidamber styraciflua</i> *	Liquidamber			X		X
<i>Lonicera japonica</i> *	Japanese honeysuckle	X				X
<i>Maclura pomifera</i> *	Osage orange			X	X	X
<i>Mahonia nevini</i> *	Nevins mahonia		X			
<i>Melaleuca armillaris</i> *	Drooping melaleuca			X		
<i>Melaleuca nesophila</i> *	Pink melaleuca			X		
<i>Melia azedarach</i> ** B	Chinaberry tree			X	X	X
<i>Melia azedarach umbraculiformis</i> ** B	Texas umbrella tree			X	X	X
<i>Morus alba</i> *	Kingnan and Maple leaf mulberry			X		X
<i>Myrtus communis</i> *	Common myrtle		X			X
<i>Nandina domestica</i>	Heavenly bamboo		X			X
<i>Nerium oleander</i> ** B	Oleander		X		X	
<i>Nicotiana glauca</i> **	Tree tobacco		X	X	X	X
<i>Olea europaea</i> * B	Olive			X	X	
<i>Opuntia bigelovii</i> *	Teddy bear cactus		X		X	X
<i>Parkinsonia aculeata</i> *	Mexican Palo verde			X	X	
<i>Parthenocissus quinquefolia</i>	Virginia creeper	X				X
<i>Parthenocissus tricuspidata</i>	Boston ivy	X				X

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		Vine	Shrub	Tree	Tolerant	Hardy
<i>Passiflora edulis</i>	Passion Vine	x				
<i>Phillyrea latifolia</i>	Tree phillyrea		x	x		
<i>Phoenix canariensis</i> *	Canary Island palm			x		
<i>Phoenix dactylifera</i> *	Date palm			x	x	
<i>Phormium tenax</i> *	New Zealand flax		x			
<i>Photinia fraseri</i>	Fraser photinia		x			x
<i>Photinia serrulata</i>	Chinese Photinia		x			x
<i>Phyllostachys aurea</i>	Yellow bamboo		x	x		x
<i>Phyllostachys bambusoides</i>	Giant bamboo			x		x
<i>Pinus pinea</i>	Italian Stone pine			x		x
<i>Pinus halpensis</i> *	Aleppo pine			x		x
<i>Pinus sabiniana</i>	Digger pine			x		x
<i>Pistacia chinensis</i> * B	Chinese pistachio			x	x	x
<i>Pittosporum tobira</i>	Mock orange		x			x
<i>Platanus acerifolia</i> *	London plane tree			x		x
<i>Platanus racemosa</i> *	Western sycamore			x		x
<i>Plumbago capensis</i>	Cape plumbago	x	x			
<i>Poinciana gilliesii</i> *	Bird of paradise bush		x		x	x
<i>Polygonum aubertii</i> *	Silver lace vine	x				x
<i>Populus alba tomentosa</i>	Chinese white poplar			x		x
<i>Populus canadensis</i> *	Carolina poplar			x		x
<i>Populus fremonti</i> 'Mohave hybrid' *	Mohave hybrid cottonwood			x		x
<i>Prosopis glandulosa torreyana</i> * B	Mesquite		x	x	x	x
<i>Prosopis pubescens</i> *	Screw bean		x	x	x	x

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<i>Prunus blireiana</i>	Purple leaf flowering plum			x		x
<i>Prunus caroliniana</i>	Carolina cherry laurel		x	x		
<i>Prunus cerasifera pissardi</i>	Purple leaf flowering plum			x		x
<i>Prunus glandulosa</i>	Dwarf flowering almond		x			x
<i>Prunus ilicifolia</i> * B	Hollyleaf cherry			x		x
<i>Prunus lyonii</i>	Catalina cherry			x		x
<i>Prunus persica</i>	Flowering peach			x		x
<i>Psidium cattleianum</i>	Strawberry guava		x	x		
<i>Punica granatum</i> * B	Pomegranate		x	x	x	x
<i>Punica granatum nana</i> *	Dwarf pomegranate		x		x	x
<i>Pyracantha</i> sp. * B	Pyracantha		x			
<i>Quercus coccinea</i>	Scarlet Oak			x		x
<i>Quercus ilex</i>	Holly or Holm Oak			x		
<i>Quercus lobata</i>	Valley Oak			x		x
<i>Rhamnus californica</i> *	Coffeeberry		x			x
<i>Rhamnus crocea ilicifolia</i>	Hollyleaf redberry		x			x
<i>Rhus lancea</i>	Africa sumac			x	x	
<i>Rhus ovata</i> *	Sugar bush		x		x	x
<i>Robinia idahoensis</i>	Idaho pink locust			x	x	x
<i>Robinia pseudoacacia</i> *	Black locust			x	x	x
<i>Rosa</i> sp.	Roses		x			x
<i>Rosmarinus officinalis</i> * B	Rosemary		x			x

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<i>Salix babylonica</i> *	Weeping willow			X		X
<i>Santolina chamaecyparissus</i> *	Lavender cotton		X		X	X
<i>Schinus molle</i> * B	California Pepper Tree			X	X	
<i>Schinus terebinthifolius</i> *	Brazilian pepper tree			X	X	
<i>Severinia buxifolia</i> *	Chinese box-orange		X			
<i>Simmondsia chinensis</i> *	Jojoba		X	X	X	
<i>Sophora secundiflora</i>	Mescal bean		X	X	X	X
<i>Spartium junceum</i> *	Spanish broom		X		X	X
<i>Stenolobium stans</i>	Yellow bells		X	X		
<i>Sterculia diversifolia</i> *	Bottle Tree			X	X	
<i>Tamarix aphylla</i> ** B	Athel tree			X	X	
<i>Tamarix pentandra</i> * B	Salt Cedar		X		X	X
<i>Teucrium sp.</i>	Germander		X		X	
<i>Tetrapanax papyriferus</i>	Rice paper plant		X			
<i>Thuja orientalis</i> **	Chinese arborvitae		X	X		X
<i>Trachelospermum jasminoides</i>	Star jasmine	X				X
<i>Trachycarpus fortunei</i>	Windmill palm		X	X	X	X
<i>Ulmus parvifolia</i>	Chinese elm			X		X
<i>Ulmus pumila</i> *	Siberian elm			X	X	X
<i>Viburnum tinus</i>	Laurustinus		X			X
<i>Vinca major</i> *	Periwinkle myrtle	X				X
<i>Vinca minor</i> *	Dwarf periwinkle myrtle	X				X

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<i>Vitex agnus-castus</i> *	Blue chaste tree		X	X		X
<i>Vitis labrusca</i>	American grape varieties	X				X
<i>Vitis vinifera</i> *	European grape varieties	X				
<i>Washingtonia filifera</i> *	California fan palm			X	X	
<i>Washingtonia robusta</i> *	Mexican fan palm			X	X	
<i>Xylosma congestum</i> **	Xylosma		X			
<i>Yucca aloifolia</i> *	Spanish bayonet		X		X	X
<i>Yucca brevifolia</i> *	Joshua tree			X	X	X
<i>Yucca elata</i> *	Soaptree yucca		X		X	X
<i>Yucca filamentosa</i> *	Adam's needle		X		X	X
<i>Yucca glauca</i> *	Great plains yucca		X		X	X
<i>Yucca gloriosa</i> *	Spanish dagger		X		X	X
<i>Ziziphus jujuba</i>	Jujube			X		X



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