

The
Must have guide to
Water Efficient Gardening and Landscape
Design



Courtesy of

Amador Water Agency

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INTRODUCTION

The Mother Lode region of California provides a unique blend of climates, soil types, native vegetation and wildlife which require special considerations when creating a home landscape. This planting guide is designed as an aid for local homeowners in creating their own landscape based on their individual situation and needs.

Good examples of some of the principles listed in this guide can be seen at the Amador County Water Agency Demonstration Garden, 12800 Ridge Road, Sutter Creek, California.

DESIGN PRINCIPLES FOR WATER EFFICIENT LANDSCAPING

Outdoor water use represents approximately 50% of the water used in the Mother Lode area. A considerable amount of water can be saved through a well-planned and well-managed landscape. Yet, substantially reducing the amount of water used in landscape does not mean diminishing the beauty of the landscape. Water efficient gardens with drip systems display plentiful foliage, more blooms, higher vegetation and crop yields, and a marked reduction in plant diseases.

PLAN AND DESIGN

Your garden will have several microclimates created by varying conditions of sun and shade, ground slope, soil type, and air movement. This will create various water use zones in your landscape. Group plants with similar water needs, then use separate irrigation valves to control watering for each zone so plants get only the water they need.

High water use: lawn and water loving shade plants

Moderate water use: shrub and ground cover areas, perennial and annual flowers, vegetable gardens

Low water use: drought tolerant plants

IMPROVE YOUR SOIL

Different soils have varying water needs. Determine first what type of soil you have, this will allow you to calculate the amount and type of soil amendments and fertilizers needed to improve the soil moisture penetration, water retention capacity and fertility. (See soils on Page 10 for more information).

IRRIGATE EFFICIENTLY

Well planned sprinkler systems can save water. Irrigate lawn areas separately from

other plantings. Lawns are best watered with sprinklers. Trees, shrubs, flowers, and ground covers can be watered efficiently with low volume drip, spray or bubbler emitters. Water thoroughly, deeply and infrequently.

PRACTICAL LAWN AREAS

Lawn areas should be on fairly level ground and sized to accommodate use. Locate lawn areas where they are highly visible or where they can be used as an extension of your outdoor living area. Design your lawn area in a shape which can be efficiently irrigated and use the more drought tolerant fescue varieties of grass.

APPROPRIATE PLANT SELECTION

Many varieties of plants are available for your water efficient landscape. They include trees, shrubs, flowering plants, ground covers and grasses. To avoid conflicts, group plants that have similar needs of water, sun or shade, and soil type. For specific drought tolerant plant selections see Appendix.

USE MULCHES

Mulch covers cool the soil, increase irrigation effectiveness by minimizing evaporation, slow erosion, and impede weed growth. Mulches should be applied on top of the soil 3 to 4 inches thick. Avoid placing any mulches in contact with the trunk of any plant. Do not use black plastic or any non-porous material underneath the mulch. Porous materials such as layers of newspapers or landscape fabric are preferable and add to the effectiveness of the mulch.

MAINTENANCE PAYS

Water efficient landscaping will require less maintenance than a traditional

landscape. A minimal amount of pruning, weeding, fertilizing and pest control will be needed. Water according to your plants needs and adjust irrigation timers to match seasonal climate patterns.

Sources:

"The Xeriscape Flower Gardener" by Jim Knopf

"Landscaping for Water Conservation: Xeriscape!" City of Aurora, Colorado Utilities District

"Plants for California Landscapes" A Catalog of Drought Tolerant Plants - State of California Department of Water Resources

"Trees and Shrubs for Dry California Landscapes" by Bob Perry

DESIGN PRINCIPLES FOR LANDSCAPING TO REDUCE FIRE HAZARD

Roofing material is the single most important item in fire safety; landscaping is the second. Although any plant and any building can burn given the right conditions, a properly designed and maintained landscape can greatly reduce the hazard. The main responsibility for fire safety lies with each homeowner.

CREATE A DEFENSIBLE SPACE

Remove most of the native shrubs and young trees within 100 feet of your home on level ground, 400 feet downslope and 200 feet on the sides and upslope.

REDUCE FUEL

Leave within the defensible space, large trees (select fire resistant thick barked trees which can survive a wildfire) and an occasional young shrub. Space tree canopies 10 feet apart on level ground and 30 feet on very steep ground. Prune lower limbs from trees at least 10 feet from the ground and remove dead branches from shrubs. Remove dead pine needles from the ground, mow native grasses and other small plants while they are green at a time when fire danger is low.

LANDSCAPE FOR FIRE PROTECTION

The location, spacing and maintenance of plants is more important than plant selection when considering fire safety. It is recommended that all large trees and shrubs be at least 50 feet from structures. Space landscape shrubs and trees to prevent the fire ladder effect. Avoid the use of extremely flammable plants which are high in resins and oils such as pines, junipers, incense cedar, cypress, eucalyptus, black walnut, brooms, pampas grass. Break up planting areas with non-flammable landscape materials such as brick, stone,

concrete and rock, and choose plants with low growth habit from fire resistant plant lists for the areas nearest structures (see Appendix for fire resistant plant lists).

MAINTAIN YOUR DEFENSIBLE SPACE

Maintain healthy landscape plants by deep thorough irrigations, remove litter and weeds, and control the re-sprouting of the native vegetation. Prune older shrubs and shear ground covers as needed, to remove dead wood, renew growth and control height.

Sources:

"Firescape - Landscaping to Reduce Fire Hazard" East Bay Municipal Utility District

"Landscape for Fire Protection" Leaflet 2401 Division of Agricultural Sciences University of California

"Protecting Sierra Nevada Homes and Property from Wildfire" by University of California Cooperative Extension, Amador County

"Living More Safely in the Chaparral - Urban Interface" by Klaus W. H. Radtke USDA Forest Service

"Fire Safe Guides for Residential Development in California" California Department of Forestry

DESIGN PRINCIPLES FOR LANDSCAPING UNDER NATIVE TREES

Young, native oaks on well drained soils are somewhat tolerant of environmental changes and will sometimes adapt to landscaping practices. But as oaks mature, their environmental tolerances narrow and changes can weaken or kill them. A mature oak is well adapted to naturally dry summer weather. If the environment under this tree is changed by the introduction of summer watering for gardens or lawns, fungi will proliferate on its roots and begin to kill it. The best way to live with oaks is to leave them and the area beneath its canopy alone. Strive to keep the root zone area in a natural condition, and keep ground disturbance as far away from a tree's trunk as possible. (See Appendix for illustration)

DO NOT CHANGE THE GRADE

Excavating soil can destroy the roots and expose them to damage by surface activities. Mounding soil over tree roots reduces the oxygen supply to the root zone, which can suffocate a tree and encourage root rot.

DO NOT CHANGE THE DRAINAGE PATTERN

Changes in the drainage around an oak may put water into the root zone during the season when soil temperatures are high. This combination of warmth and moisture encourages growth of soil-borne diseases which our oaks are not equipped to defend against.

AVOID SOIL COMPACTION

Heavy traffic or the operation of equipment can cause soils to compact reducing air space in the soil and suffocating the tree.

AVOID THE USE OF NON-POROUS PAVING MATERIALS

When the ground is covered with a nonporous material such as asphalt or concrete, the passage of moisture, air, and other gases within the root zone is impeded. Porous materials (i.e. brick with sand joints, gravel, bark, wood decking, mulches) are more compatible with the oak environment.

AVOID TRENCHING

Utility trenches which are dug through root zones may sever a major portion of a tree's roots. Put utilities in a common trench or place utilities in a conduit which is bored through the soil. After any trenching in the root zone the tree should be pruned to remove canopy material proportional to the roots lost or damaged.

LANDSCAPING UNDER OAKS

Ideal situation is no landscaping or disturbance of any kind under the canopy of a tree. If you must landscape:

1. Select low water ornamentals and drought tolerant native California plants. (Not all California natives are drought tolerant) See Appendix for plant list.
2. Place plants no closer than 6' from the base of the tree.
3. Irrigate with low volume drip system with water targeted only to the landscape plants. Water infrequently and deeply.
4. Use only porous materials for surfacing under oaks and leave 6' area around trunk in natural state.

Sources:

"Managing Amador County's Native Trees" by D.S. Farnham, County Farm Advisor

"Living Among the Oaks-A Management Guide for Landowners" University of California Cooperative Extension, Natural Resources Program, 163 Mulford Hall, Berkeley, Ca. 94720

"Oaks on Home Grounds", leaflet #2783, U.C. Cooperative Extension, Amador County

"Compatible Plants Under and Around Oaks" by the California Oak Foundation, 909 12th St. Ste. 125, Sacramento, Ca. 95814

GENERAL LANDSCAPE GUIDELINES

There are several things to consider when installing your home landscape which will create a more healthy and trouble free landscape.

WEED CONTROL

Prior to planting: When weeds are actively growing and before they go to seed, spray with a systemic herbicide. Ask your local nursery for the appropriate herbicide. The chemical common to these herbicides, glyphosphate, is not harmful to the soil, but will effect any living plant tissue it comes in contact with. Spray on plant foliage on a calm day. Keep pets off of weeds until spray has dried. Repeat applications of spray may be necessary on some perennial weeds. A non-chemical control would be to cultivate the weeds into the soil. This process is more effective on annual weeds.

After planting: Weeds are not only unsightly but they are great competitors for water and nutrients. After your landscape is planted, pre-emergent weed killers may be applied to prevent weed seeds from sprouting. Be sure to read the label of any chemical for application rates, plant susceptibility, and methods and times of application. The use of mulches provide us with a non-chemical method for weed control. (see Page 3)

SOIL IMPROVEMENT

Soil Type: Learn what kind of soil you have by taking a sample of your soil to a qualified soil testing service or, look in the USDA Soil Survey Maps for your area (check local libraries or County Farm Advisor's office). Healthy native plants indicate presence of good soil. Dig holes around your home, look for compacted soil layers which may have been caused during home construction or clay or bedrock that may restrict water drainage.

Fill holes with water, if it drains away in a few days, new plantings will probably survive. If soil must be added to raise grade or added to rocky soil, add soil which is similar in texture to the existing soil. If you can borrow some from on site, it is better than importing soil which may be totally different than the native soil. **IMPORTANT** - Be sure to incorporate whatever soil you bring into the existing soil. Where soil blending is impossible, the imported soil should be deep enough to accommodate the root system of plants to be grown there.

Soil Amendments: Sawdust and bark amendments create more soil airspace and improve drainage for shallow rooted lawns, ground covers and flower and vegetable beds. Add amendments in increments of one inch at a time and till thoroughly into soil (approx. ten yards of amendment for every 1,000 square feet, tilling into the top 12 inches). If your soil drains poorly and you want to plant large trees and shrubs in this area, you can improve drainage by planting on earth mounds made from existing native soil. Note of caution!! Plants in sawdust and bark amended soils need extra nitrogen fertilizer at a rate of 5 lbs. ammonium sulfate 21-0-0 for each 100 lbs. sawdust bark material. As soil amendments decompose, their benefits to the soil structure will diminish.

Soil Fertility: All Amador County soils are low in nitrogen, sulfate and phosphorus. For added nitrogen and sulfate, fertilize with ammonium sulfate during growing season for shallow rooted crops, flowers, turf grasses and once a year in Spring for trees and shrubs. Be sure to water fertilizer completely into soil. Phosphorus may be added as the soil is being tilled (super phosphate 0-20-0, 5-7.5 lbs. per 100 sq. ft. or 1/4 cup mixed with the soil in the bottom of the planting hole.) Don't let the fertilizer come into direct contact with

plant roots. For established plantings, phosphorus in the form of ammonium phosphate 16-20-0 should be incorporated into the soil around the plant root zone. For organic fertilizers, manures, etc., add small portions of nitrogen as well as some phosphorus, but don't over do because they also add salts which can be detrimental to plant growth. Rock phosphate is a common organic form of phosphorus.

Soil pH: If your soil is acidic, add dolomitic lime at a rate of 5-10 lbs. per 100 sq. ft. If your soil is too alkaline, add soil sulfur at a rate of 1 lb. per 100 sq. ft.

For more information, see Soil Management Checklist for Amador County by D.S. Farnham, County Farm Advisor.

ON-SITE DRAINAGE

Correct any drainage problems by adjusting slopes where possible. Connect all downspouts on house or out buildings to 3" to 4" ADS flex pipe and empty away from foundations and planting beds. Pipe should have a minimum drop of 1" for every 10 linear feet. Grade so that the ground slopes slightly away from the house foundation.

EFFICIENT IRRIGATION DESIGN

Type of System: Select the type of irrigation system you need based on the water requirements of the plants in your landscape. Where you need wide coverage, such as for lawns and creeping ground covers, use overhead sprinklers. Use low flow drip emitters and bubbler heads for trees and shrubs where you can direct the flow to a specific plant. In an established landscape, existing sprinkler systems can be converted to drip, as irrigation manufacturers have many new products available. Don't operate drip and sprinklers on the same valve.

Irrigation Zones: Zone watering areas based on soil types, sun or shade areas, and slopes. For example, plants growing in sun all day will need more water than plants growing in a shaded area. Place these areas on separate valves.

Apply water deeply and slowly, especially on slopes. Many Amador County soils are high in clay type particles. Clay accepts water slowly and it takes longer for the water to penetrate deeply into root zones. This is one of the reasons why spray systems, which apply water at a very fast rate, are not efficient unless you can apply the water at several short intervals vs. one long run time which will result in runoff.

Monitoring: Monitor your timer if you have an automatic system. Check emitters for clogging and clean the filters, especially if on well water. Don't program your timer and forget about it. If you are going to be on vacation use your timer, otherwise manually operate it as climate dictates. Irrigate in early morning. Turn off your automatic system when rains come in fall and temperatures decrease.

Amount of Water: How much water and how often do you irrigate? That depends on soil type, climate, and rooting depth of the plants. Estimate 2 to 3 gallons per week for established drought tolerant plants and 1 to 3 irrigations per week, 15-20 minutes for lawns. You be the judge of your garden's water needs. Look at your plants, they will tell you.

PLANT SELECTION

Select healthy, vigorous young plants which do not have exposed surface roots or roots growing out of the can. Larger plants do not necessarily grow better and in most cases one gallon size and smaller plants will adapt to the native soils much quicker, developing a stronger root system and top growth. Plant availability changes with the

seasons, with the greatest selection usually in the spring. Some deciduous trees and shrubs may be purchased bareroot at a significant savings in the months of January, February and early March. If you will be planting in the cooler fall and winter months, locally purchased plants are acclimated to our area and will be the hardiest. If plants are purchased at lower elevations leave plants in the containers in a protected site outside for two weeks before planting. (Be sure to water them.) Remember to select plants for the type of situation you will be growing them in (i.e. low water types, deer resistant, fire resistant, planting under oaks, shade tolerance etc.) See Appendix for plant lists.

PLANTING TIMES

In Amador County the fall and winter months are the best times to plant, as long as soils are not too wet. Although some moisture in the soil makes it easier to till and dig, avoid working extremely wet soils as this can destroy soil structure thus reducing soil air space. Planting in the cooler months allows root systems to grow and develop before much top growth begins in the spring. Transplant shock is less likely also. Planting in the spring and summer months requires special care to keep plants well watered and in some cases plants which come from a shaded nursery environment should be protected from the hot sun until established or temperatures cool.

PLANTING INSTRUCTIONS

Dig hole slightly larger in diameter than container or root ball area. Avoid digging the hole much deeper than the container as settling of the soil may occur after planting causing the plant to be set too deeply in the ground leading to stem rot problems. Add phosphate fertilizer as needed to the bottom of the hole and cover with soil. Time-released

fertilizer pellets may also be added to the planting hole. Loosen plant from can by tapping the sides of the can or cut can with tin snips or can cutters and slip plant out. Pry apart matted roots (an old screwdriver works well) and cut through circling roots. Set plant in the ground at the same soil level as it was in the can and press soil firmly around roots. Water plants thoroughly right after planting. If planting on a slope or in the summer months, watering basins may be necessary around each plant, but be sure to remove basins by winter rain season, especially with low water plants set in clay soils.

VERTEBRATE PEST CONTROL

Gophers and Moles:

Common to Amador County gardening is the Pocket Gopher which feeds on plant roots and tender shoots, and the mole which feeds on soil insects and earthworms. To control these vertebrate pests you need to know which it is you have since the control methods for each are different. Moles push the soil to the surface, forming a conical, volcano-shaped surface tunnel and mound. Gophers dig runways underground and push the soil out of their runways in a lateral tunnel to the surface, forming a fan-shaped mound. See Appendix. The best way to control gophers and moles is by using traps. You will need two Macabee traps for the gophers which are set in the main runway. Use harpoon traps for the moles usually set above ground on a surface tunnel. See Appendix. Other control methods for pocket gophers include wire baskets around roots when planting (Remember gophers can come out of the ground and enter down into the soil around the base of the plant or bulb so wire must be on the surface of the soil also.) Poison baits work somewhat with gophers but may be questionable with moles as they are insectivores. Gas flares and

gas pellets rarely work because the burrows may extend more than a thousand feet on several different levels. Hair clippings, chewing gum, and gopher plants are remedies that fall into the folklore category with no evidence or biological reason why they should work. However, if you find a method that works, stick with it!

Deer:

Deer will eat just about any plant, especially in the late summer when natural browsing pressures increase. Deer repellents are at best 50% effective. The only total protection being an eight foot high fence, properly installed and adequately maintained. There are some plants which deer do not seem to like quite as well as others and thus there is a Deer Resistant Plant List. However, remember that when natural browse in the deer's usual feeding ground is low they will find your garden more palatable, deer resistant plants or not. Screens placed over young plants will help them get established. A plant list is included for your experimentation (See Appendix for Deer Resistant Plant List).

LAWN INSTALLATION

The best time of the year to install a lawn is in the Fall. If this is not possible, early Spring is the next best. Cultivate area to be seeded or sodded at least 12" deep. Rake out and remove as much rock as your back can stand. Add amendments and fertilizers as mentioned under soils Page 10. Fill in any depressions and cut down high spots to level. Roll or tamp to settle soil. Sow seed at recommended rates or roll out sod. Use mixes of bluegrass, fescue, and rye or dwarf or tall fescue. The fescues have a deeper root system and are more drought tolerant. Lightly rake the seed into the soil and roll the seed or sod to insure good contact with the soil. Seeded lawns can be top dressed with peat moss. (A

four cubic sack covers 600 square feet.) Top dressing will help cut down on the amount of watering necessary. Water seeded and sodded areas once or twice a day or more in hot weather until seed germinates and sod has rooted into native soil. Stay off of lawn for 3 to 4 weeks or until first mowing.

STAKING PROCEDURE FOR TREES

A rigidly staked tree will be very slow to develop trunk girth and thus be unable to support much top growth. Untie rigidly staked container trees and restake so that the trunk will be able to move with the wind. Use the following procedure. Grasp the bottom of the trunk with your hand. Move your hand up the trunk until the top of the tree is in a vertical position. This is the point where you want to tie the tree. Using two stakes and two rubber ties support the tree as shown in the diagram (see Appendix). Stake only trees that cannot stand on their own. Be sure to remove ties and stakes as soon as the tree can support itself. If the tree is located on a site with prevailing winds, place the stakes perpendicular to the wind direction so as to avoid injury to the tree by rubbing on the top of the stake. For more information see "Staking Landscape Trees" Leaflet #2576 University of California Cooperative Extension, Amador County.

MAINTENANCE

Every landscape requires some routine maintenance. Regular fertilization is necessary as plants absorb the nutrients or irrigations flush nutrients out of the root zone. Weeds are a constant menace. The key is to use herbicides or pull the weeds before they go to seed. Flowering plants require regular pruning to maintain flowering and healthy growth. Irrigation systems must be monitored for leaks, plugged heads and seasonal timer adjustments.

CONCLUSION

This Planting Guide offers some guidance for creating and maintaining landscapes in the varied conditions found in the Mother Lode. For more detailed information, refer to the sources listed throughout this Planting Guide, consult with your local nursery people, the Amador County Farm Advisor, or Amador County Cooperative Extension Master Gardeners. Learn from you neighbors and from your own experimentation. Copies of this Planting Guide can be obtained from the Amador Water Agency, 12800 Ridge Road, Sutter Creek, California, (209) 223-3018.

Appendices

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Drought Tolerant Perennials and Bulbs for Amador County (East of Highway 49)

The purpose of this chart is to give a quick reference to the growth habits, good and bad, of some of the perennials and bulbs that will become drought tolerant in Amador County, east of Highway 49 to about 3700ft. elevation. If you want to use them in other areas, check to be sure they are suitable. In compiling this list, the following criteria were used:

1. The perennials listed here are not drought tolerant when first planted. Most will need regular water during the summer the first year - that is usually every 4-7 days, a little more often during extreme heat. From the 2nd year on, you can taper off on how frequently you water. Water deeply to encourage deep rooting. Water frequency in the chart is for established perennials.
2. Bulbs complete their yearly cycle in a brief period of time and the watering recommendations in the chart are fine to follow from the first year on, providing there is adequate winter rain.
3. Many drought tolerant perennials and bulbs look prime for a short period of time. Consider them for color groupys with plants that look good most of the year.

An asterisk (*) on the left side of the plant name indicates that it is deer resistant.

This list was compiled and researched by: Mary Larson & Judy Lester
 Master Gardner Pine Grove Nursery

PERENNIALS & BULBS	Height	Spread	Flowers	Soil	Remarks
* Agapanthus <i>Agapanthus varieties</i>	8"-5'	to 3'	White or blue clusters Mid summer	Most, drained	3 hours or more sun/day, plant from gallon cans anytime. Divide infrequently, good container plant, near pools, or in flower beds. Mostly evergreen, aka 'Lily-of-the-Nile'
Allium, Giant <i>Allium giganteum</i>	to 5'		Bright lilac ball-like clusters, June	Deep, rich, drained	Sun, plant bulbs in fall, regular water until flowering is over - then none. Good dried flowers.
Allium, Star of Persia <i>Allium christophii</i>	12-15'		Lilac starlike, metallic sheen clusters, June	Deep, rich, drained	Sun, plant bulbs in fall, regular water until flowering is over - then none. Dried flower looks like elegant ornament.
* Basket of Gold <i>Aurinia saxatilis</i>	8-12"	18"	Golden yellow clusters May	Most, drained	Sun or light shade, plant bedding plants or gallon cans in spring, shear up to ½ of plant after bloom, water weekly through bloom, then every 10-14 days. Not showy after bloom.
* Coreopsis <i>Coreopsis grandiflora</i>	1-2'	3'	Bright yellow, 2 ½-3" across, long stems all summer	Rich, drained	Full sun to avoid mildew, plant from bedding plants or gallon cans late spring, re-seed easily, water every 2-3 weeks. Variety "Sunburst" - large semi-double flowers is available in seeds.
* Daffodil <i>Narcissus varieties</i>	to 2'	8"	Yellow or white with many variations Dec-April	Most	Sun or light shade, plant from bulbs in fall, water as needed until bloom is over, then no water is necessary, good cut flower, let foliage die back, many varieties available, gopher proof.
* Day Lily <i>Hemerocallis varieties</i>	1-5'	to 4'	various	Most	Sun or part shade, from bulbs or gallon cans at nurseries or mail order. Water thoroughly while blooming. Bloom time varies. Use as background
* Dusty Miller <i>Artemisia stellerana</i>	2-2 ½'	3'	Bright yellow on spikes	Deep, rich, drained	Sun or partial shade, plant 4" pots year round, gray foliage, finely cut, is nice background for other plants in bloom, it's own bloom not attractive, deeps foliage all winter, prune to avoid leggy look but still needs replacing every 3-5 years, water every 2-3 weeks.
* Dusty Miller <i>Senecio cineraria</i>	to 2'	to 1'	Bright yellow on spikes	Deep, rich, drained	Sun or partial shade, plant from bedding plants in spring, gray foliage is nice contrast with other plants in bloom, cut back end of summer to avoid leggy look, water every 2-3 weeks.
* Gaillardia <i>Gaillardia grandiflora</i>	to 3'	to 3'	Red or yellow w/orange or maroon, daisy-like June to frost	Deep, rich, drained	Sun or partial shade, plant from seed, bedding plants or gallon cans in spring, good cut flower, keep old blooms picked to prolong blooming, good cut flower, water every 2-3 weeks, very reliable.
* Garden Sage <i>Salvia officinalis</i>	1 ½" - 2'	to 3'	Violet-blue early summer, fragrant, good cut	Most, drained	Sun or light shade, plant from seeds, cuttings, small pots, gallon cans anytime except winter. Narrow gray-green 1-2" leaves, cut back after bloom, divide every 3-4 years. Use fresh or dried for seasoning.
Geum <i>Geum quellyon</i>	15"	to 15"	Double yellow or red on 2' stems, late spring	Most, drained	Sun or part shade, plant from gallon cans in spring. Good for borders.
Grape Hyacinth <i>Muscari armeniacum</i>	to 8"	to 6"	Bright blue spikes spring	Most	Sun or part shade, plant bulbs in fall, grassy fleshy leaves from autumn through bloom, can be used as cut or dried flowers, re-seeds quite easily and can be transplanted, no summer water necessary.

PERENNIALS & BULBS	Height	Spread	Flowers	Soil	Remarks
* Iris, Bearded <i>Iris</i>	to 3'	to 18"	All colors, but pure red and green, purples most common, mostly two-toned, late spring	Most, drained	Sun or part shade, plant rhizomes in fall. Good cut flower, divide every 3-4 years, water 2-3 times during summer.
* Lamb's Ears <i>Stachys byzantina</i>	to 1'		Purplish, small June-July	Good soil, drained	Sun or light shade, from cuttings or small pots in spring. Soft, thick white-woolly leaves. Gets mushy in winter, cut back in spring. Grown mostly for foliage contrast. Good in borders, ground cover under high oaks.
Mexican Evening Primrose <i>Oenothera berlandieri</i>	to 1'	to 2'	Rose pink, 1 1/2" across, profuse, early summer	Most, drained	Sun or light shade, available from gallon cans late spring, daytime bloom, water every 2-3 weeks.
* Naked Lady <i>Amaryllis belladonna</i>	2-3'	2-3'	Rosy pink, fragrant late summer	Most, drained	Sun or light shade, plant bulbs in fall, foliage during early spring - dies in summer and bloom looks naked, water monthly
* Poppy, California <i>Eschscholzia californica</i>	to 1'	to 1'	Deep orange to pale yellow, 2" April-June	Most	Sun, start from seed fall through early spring, do not compete well with weeds, cut back after bloom, don't transplant well, no summer water necessary.
* Poppy, Matilija <i>Romneya coulteri</i>	to 6'	to 4'	White crepe paper-like with gold center June	Most	Sun, start from root cuttings in fall or gallon cans in spring, difficult to start, not attractive except in bloom, good cut flowers, flowers fragrant, water every 2-4 weeks.
* Poppy, Oriental <i>Papaver orientale</i>	to 4'	to 18"	Brilliant or pastel shades early summer	Most, drained	Sun or light shade, start from bedding plants or gallon cans in spring, foliage dies in summer after bloom, reappears late winter, water regularly until bloom is done - then every 3-4 weeks.
* Red Hot Poker <i>Kniphofia uvaria</i>	3-6'	2-3'	Orange red or yellow, 1' poker-like flowers late summer	Most	Sun or light shade, start from root divisions or gallon cans anytime, cut back in fall, coarse looking plant, water monthly
Red Valerian <i>Centranthus ruber</i>	to 3'	to 3'	Crimson to pale pink in clusters, late spring	Most	Sun or part shade, start from mail order roots, good cut flowers, self-sows prolifically, many consider it a weed, use in fringe areas, water every 3-4 weeks.
Yarrow, Common <i>Achillea millefolium</i>	to 3'	to 2'	White clusters summer	Most, drained	Sun or light shade, start from 4" pots or gallon cans in spring, cut spent flowers to prolong bloom, good cut flower, green or gray green leaves, 'Rosea' has rosy pink flowers, water every 3 weeks.
Yarrow, Fernleaf <i>Achillea filipendulina</i>	4-5'	2-3'	Bright yellow in flat topped clusters, summer	Most, drained	Sun or light shade, start from 4" pots or gallon cans in spring, cut spent flowers to prolong bloom, good cut flower, shorter varieties available, water every 3 weeks.
Yarrow, Silvery <i>Achillea clavennae</i>	to 10"	to 12"	Ivory white flat-topped clusters summer	Most, drained	Sun or light shade, start from 4" pots or gallon cans in spring, cut spent flowers to prolong bloom, good cut flower, water every 3 weeks.

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Master Gardner

Judy Lester
Pine Grove Nursery

Drought Tolerant Landscape Ground Cover for Amador County (East of Highway 49)

The purpose of this chart is to give a quick reference to the growth habits, good and bad, of some of the ground covers that will become drought tolerant in Amador County, east of Highway 49 to about 3700ft. elevation. If you want to use them in other areas, check to be sure they are suitable. In compiling this list, the following criteria were used:

1. No plant is drought tolerant when first planted. Most will need regular water during the summer the first year - that is usually every 4-7 days, a little more often during extreme heat. From the 2nd-5th year, you can taper off on how frequently you water. Water deeply to encourage deep rooting.
2. Most of the ground covers on this list will look better with occasional summer water, even when mature. The ground covers on this list will usually look good with water every 2-3 weeks, when established. Some need less. Ask for guidelines when purchasing the ground covers.
3. Appearance - our criteria is that the ground cover look good with infrequent watering, not just survive. A few, by their nature, look ratty at certain times. We've tried to note these and give instructions (usually pruning) to keep them looking neat.
4. Availability - most of the ground cover listed are readily available at nurseries. Other drought tolerant ground covers exist but are hard to find - keep your eyes open for interesting things to try..
5. Fall planting, especially when the soil is still warm, gives ground covers the greatest amount of time to settle in before the summer heat. The plants will put out new roots while the soil is still warm, even though you don't see growth. Fall planting, when possible, is always a good idea, but can really be important when summer watering is a concern.

An asterisk (*) on the left side of the plant name indicates that it is deer resistant.

This list was compiled and researched by: Mary Larson & Judy Lester
 Master Gardner Pine Grove Nursery

GROUND COVER	Height	Spread	Growth	Flowers	Fruit	Soil	Remarks
Ceanothus, Carmel Creeper <i>Ceanothus griseus horizontalis</i>	18-30"	5-12"	Fast	Lt. Blue, 1" clusters, April		Most, drained	Sun or part shade, water first year only, live 5-10 years, evergreen
Ceanothus, Hurricane Point <i>Ceanothus griseus horizontalis</i>	2-3'	to 20'	Fast	Pale blue, 1" clusters, April		Most, drained	Sun or part shade, water first year only, live 5-10 years, somewhat rank grower, evergreen
Ceanothus, Yankee Point <i>Ceanothus griseus horizontalis</i>	3-5'	8-10'	Fast	Med. Blue, 1" clusters, April		Most, drained	Sun or part shade, water first year only, live 5-10 years, looks refined, evergreen
Cotoneaster, Creeping <i>Cotoneaster adpressus</i>	to 1'	6'	Slow	Tiny white, abundant, spring	¼" bright red, showy	Most	Sun or light shade, deciduous, follows contours well, reddish fall color, good erosion control
Cotoneaster, Lowfast <i>Cotoneaster 'Lowfast'</i>	to 1'	to 10'	Fast	Tiny white, abundant, spring	Red, numerous	Most	Sun or light shade, semi-deciduous, good erosion control
Cotoneaster, Rock <i>Cotoneaster horizontalis</i>	to 3'	to 12'	Mod.	Tiny white, abundant, spring	Bright red	Most	Sun, give it room - don't tip prune, deciduous for short time, orange-red fall leaves
Cotoneaster, Rockspray <i>Cotoneaster microphyllus</i>	to 3'	6'	Mod.	Tiny white, abundant, spring	Rosy red, ¼" across	Most	Sun, evergreen, small leaves
Coyote Brush, Twin Peaks <i>Baccharis pilularis 'Twin Peaks'</i>	to 2'	to 6'	Mod.	Inconspicuous		Most	Sun or light shade, evergreen, gray-green foliage, very tough, prune yearly before new growth to avoid wood look
* Hypericum <i>Hypericum calycinum</i>	to 15"	18" or more	Fast	Bright yellow, trumpet-like, June		Most, drained	Sun to partial shade, evergreen, spreads by underground runners, mow during winter every 2-3 years, aka 'Aarons Beard' or 'St. John's Wort'
Juniper species	Many varieties are available that are suitable ground covers, ranging in height from 6" to 3' with spreads from 4' to 12'. Growth is slow to moderate. All are evergreen and require good drainage. Foliage color - greens, blue-green or gray-greens. Subject to spider mite and twig borer.						
* Manzanita, Bearberry <i>Arctostaphylos uva-ursi</i>	6-12"	to 12'	Slow	White, abundant, late winter	Red or pink berries	Most, drained	Sun or part shade, evergreen, forms dense mat, attractive year round. 'Massachusetts' is a small leafed variety.
* Manzanita, Monterey Carpet <i>Arctostaphylos hookeri 'Monterey Carpet'</i>	to 1'	to 12'	Mod.	Light pink, late winter	Red berries	Most, drained	Prefers partial shade, evergreen, compact growth.
* Manzanita, Point Reyes <i>Arctostaphylos uva-ursi 'Point Reyes'</i>	to 18'	3-5'	Slow	Pink, small clusters, showy, Mid-winter	Red or pink berries	Most, drained	Sun or part shade, evergreen
* Manzanita, Radiant <i>Arctostaphylos, uva-ursi 'Radiant'</i>	6-8"	3-5'	Slow	Light pink, late winter	Red berries	Most, drained	Sun or part shade, evergreen, forms dense mat, attractive year round, rich green foliage
GROUND COVER	Height	Spread	Growth	Flowers	Fruit	Soil	Remarks

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Nandina, Harbour Dwarf <i>Nandina, domestica 'Harbour Dwarf'</i>	to 2'	2-3'	Mod.			Most, drained	Sun or part shade, evergreen, orange red winter color in sun, oakroot fungus resistant
* Periwinkle, Dwarf <i>Vinca major</i>	to 3'	to 6'	Fast	Lavender-blue 1"-showy spring		Most, drained	Part shade, evergreen, can become overgrown, sheer to ground to bring on new growth
* Periwinkle <i>Vinca minor</i>	6"	4-5'	Fast	Lavender-blue, 1" - showy spring		Most, drained	Part shade, evergreen, more easily controlled than V. major, dense, attractive year round.
Pyracantha, Santa Cruz <i>Pyracantha 'Santa Cruz'</i>	to 3'	4-5'	Fast	White, small clusters late spring	Red berries winter	Most, drained	Sun or light shade, evergreen, thorns, easily pruned to shape, subject to fireblight.
* Rosemary, Dwarf <i>Rosmarinus officinalis 'Prostratus'</i>	to 2'	4-5'	Mod.	Lt. Lavender-blue clusters 2x a year		Most, drained	Sun or light shade, evergreen, follows contours well, fragrant, attracts bees during flowering
Sedum, Dragon's Blood <i>Sedum spurium</i>	4-5"	12"	Fast	Rosy red clusters on 4-5" stems, shy bloomer		Most, drained	Sun or part shade, evergreen, bronzy green thick leaves - 1" long. Good in rock gardens too.
Sedum, Brevifolium <i>Sedum album</i>	2-6"	12"	Fast	White or pinkish-white		Most, drained	Sun or part shade, creeping evergreen, fleshy leaves ¼ to ½" long - light to medium green. Good in rock gardens too. Pieces root easily.
* Thyme, Creeping <i>Thymus, praecox arcticus</i>	2-6"	to 18"	Fast	Lavender-white, beadlike clusters July-Sept		Most, drained	Sun or light shade, dies back after flowering, prune last winter to encourage new growth, attracts bees during flowering. "Woody Thyme" shorter and denser also available.

Draught Tolerant Landscape Shrubs for Amador County (East of Highway 49)

The purpose of this chart is to give a quick reference to the growth habits, good and bad, of some of the shrubs that will become drought tolerant in Amador County, east of Highway 49 to about 3700ft. elevation. If you want to use them in other areas, check to be sure they are suitable. In compiling this list, the following criteria were used:

1. No plant is drought tolerant when first planted. Most will need regular water during the summer the first year - that is usually every 7-10 days, a little more often during extreme heat. From the 2nd-5th year, you can taper off on how frequently you water. Water deeply to encourage deep rooting.
2. Most of the plants on this list will look better with occasional summer water, even when mature. The shrubs on this list will usually look good with water every 3-4 weeks, when established. Some need less. Ask for guidelines when purchasing the shrubs.
3. Appearance - our criteria is that the ground cover look good with infrequent watering, not just survive. A few, by their nature, look ratty at certain times. We've tried to note these and give instructions (usually pruning) to keep them looking neat.
4. Availability - most of the shrubs listed are readily available at nurseries. Some are available only at certain times of the year. Many other drought tolerant shrubs exist but are hard to find - keep your eyes open for interesting things to try. Different plants are becoming readily available continually, too, so this list will need updating every now and then.
5. Fall planting, especially when the soil is still warm, gives plants the greatest amount of time to settle in before the summer heat. The plants will put out new roots while the soil is still warm, even though you don't see growth. Fall planting, when possible, is always a good idea, but can really be important when summer watering is a concern.

An asterisk (*) on the left side of the shrub name indicates the plant is deer resistant.

This list was compiled and researched by: Mary Larson & Judy Lester
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SHRUBS	Evergreen (E)		Height	Spread	Growth	Flowers	Soil	Remarks
	Deciduous (D)							
Aucuba varieties <i>Aucuba japonica</i>	E	Varies	Varies	Fast	Inconspicuous	Most, drained	Needs shade, prune to maintain fullness, berries if both sexes planted, most varieties variegated	
Bush Anemone <i>Carpenteria californica</i>	E	3-6'	2-4'	Slow	White, anemone-like 1½-3" wide, slight fragrance May-June	Most	Best in light shade, prune after flowering to restrain growth and to shape, oakroot fungus resistant	
Bush Morning Glory <i>Convolvulus cneorum</i>	E	2-4'	2-4'	Rapid	White to pink tint trumpet shaped, May-June	Light, drained	Full sun, silvery-gray foliage, prune heavy to keep neat, good accent plant	
Ceanothus varieties	E	5-12'	5-12'	Fast	Shades of blue, some whites March-April	Most, drained	Part shade to full sun, also called Wild Lilac, live 8-15 years, shiny dark green foliage, water only until established	
Coffeeberry <i>Rhamnus californica</i>	E	8-12'	4-6'	Mod.	Inconspicuous	Most	Partial shade, red to black berries. Variety 'Eve Case' grows 4-8', is neat, compact	
Cotoneaster, Cranberry <i>Cotoneaster apiculatus</i>	D	to 4'	4-6'	Fast	Small white or pinkish in abundance	Most	Part shade to full sun, large red fruit in clusters, prune only to shape, maroon red fall color	
Cotoneaster, Spreading <i>Cotoneaster divaricatus</i>	D	to 6'	to 6'	Fast	See above	Most	Full sun, many 1/3" red berries, prune only to shape, orange to red fall color	
Cotoneaster, Parneyi <i>Cotoneaster lacteus</i>	E	6-8'	6-8'	Fast	See above	Most	Full sun, long-lasting berries in 2-3" clusters, prune only to shape	
Cotoneaster, Willowleaf <i>Cotoneaster saicifolius</i>	S D	to 15'	to 15'	Fast	See above	Most	Full sun, red berries in 2" clusters, prune only to shape, can be trained as tree	
Crape Myrtle <i>Lagerstroemia indica</i>	D	6-20'	6-20'	Slow	Purple, pink, red or white, 6-12" clusters Jul-Sept	Most, drained	Full sun a must, subject to mildew, needs regular water during bud & bloom, dwarf forms available, prune yearly for flowers	
Currant, Red Flowering <i>Ribes sanguineum</i>	D	4-12'	2-8'	Mod.	Deep pink to red clusters March-June	Most	Partial shade, blue-black berries, papery maple-like leaves, periodic water necessary	
*Fern, Autumn <i>Dryopteris erythrosora</i>	S D	1 ½-2'	1 ½ - 2'	Mod.		Most, drained	Shade, reddish fronds when young, deep green late spring, summer	
Flannel Brush <i>Fremontodendron californicum or mexicanum</i>	E	6-20'	3-10'	Fast	Yellow shades 1 ½ - 3" saucer-like, May-June	Most, drained	Sun, good drainage essential, stake when young, pinch and prune to shape, dark green leaves, felt-like coating beneath leaves	
Grape Varieties	D	as trained	same	Fast	inconspicuous	Most, drained	Full sun, choose variety to suite climate. Needs careful training and regular pruning. Some subject to mildew. Good to arch a walkway, roof, and arbors.	

Evergreen (E)

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SHRUBS	Deciduous (D)	Height	Spread	Growth	Flowers	Soil	Remarks
Grasses, Ornamental	Becoming very popular. More varieties available continually. Many very drought tolerant. Good accent or background plants for many locations. Colors and heights vary. Check to see what kinds may suit your situation. No attempt made here to list varieties since availability is changing so rapidly.						
*Grevillea, Noellii <i>Grevillea 'Noellii'</i>	E	to 4'	4-5'	Fast	Pink and white clusters May	Most	Sun or part shade, resemble junipers but soft, billowy
*Grevillea, Canberra <i>Grevillea 'Canberra'</i>	E	to 8'	to 12'	Fast	Red clusters May	Most	Sun or part shade, resemble junipers but soft
Honeysuckle, Hall's <i>Lonicera japonica 'Halliana'</i>	S D	to 15'		Fast	White changing to yellow Spring	Most	Vigorous vine for sun or part shade, good ground cover too, prune severely yearly to control woody growth
*Hopseed Bush <i>Dodonaea viscosa</i>	E	6-8'	6-8'	Fast	Inconspicuous	Most	Sun or part shade. : "Purpurea" most popular but not as cold hardy as green. Good hedge, screen or accent plant
*Italian Buckthorn <i>Rhamnus alaternus</i>	E	12-20'	12-20'	Fast	Inconspicuous	Most	Sun or part shade. Variegated or green forms, easily shaped, good hedge, screen or accent plant.
*Juniper varieties	Ground covers to tree types. Many available. Almost any height and spread form you could use. Some have bluish-green needles. Sun or light shade. Cannot stand waterlogged soil so have good drainage.						
*Lavender, English <i>Lavandula angustifolia</i>	E	3-4'	3-4'	Mod.	Lavender, 1/2' on spikes July-Aug.	Loose, fast draining	Gray foliage, prune immediately after bloom to keep compact; dwarf forms available, compact, sun.
Lilac, Common Eastern <i>Syringa vulgaris</i>	D	to 20'	to 15'	Mod.	Lavender-purple fragrant, spring	Most	Sun to light shade, subject to mildew. Best where winters are cold. Good for rear of borders
*Manzanita, Howard McMinn <i>Arctostaphylos densiflora</i>	E	5-6'	5-7'	Fast	Whitish pink Mar-April	Fast draining	Green foliage, mound form, tip prune after flowering for density, sun or part shade, other manzanita shrub types available.
Nandina <i>Nandina domestica</i>	E	6-8'	4-6'	Mod.	Creamy white clustered at branch ends, late spring	Good soil	Not true bamboo, but reminiscent in looks, sun or part shade, red during winter with sun & frost, oakroot fungus resistant.
Nandina, Compacta <i>Nandina 'Compacta'</i>	E	4-5'	3-4'	Mod.	See above	Good soil	Denser than above, lacy look, same growing culture.
Nandina, Nana <i>Nandina 'Nana'</i>	E	1'	1 1/2'	Mod.	See above	Good soil	2 plants sold under this name, 1 has coarse foliage, reddish purple in winter, other has finer foliage, bright red during winter, same growing culture as above.

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SHRUBS	Evergreen (E)					Flowers	Soil	Remarks
	Deciduous (D)	Height	Spread	Growth				
*Oleander <i>Nerium oleander</i>	E	8-12'	8-12'	Mod.	White, Yellow, pink, salmon or red; single or double June-Sept	Most	Sun, moderately cold hardy, petite forms not as cold hardy, double flowers hang on after bloom, all parts of plants are poisonous if eaten.	
*Oregon Grapd <i>Mahonia aquifolium</i>	E	to 6'	to 4'	Slow	Yellow, 2-3" long clusters April-May	Most	Sun or part shade, blue-black fruit in fall, very durable plant, glossy green foliage, variety 'Compacta' 2 ft. tall, oakroot fungus resistant	
*Pampas Grass <i>Cortaderia selloana</i>	E	8-10'	6-8'	Mos.	White or pink plumes late summer	Most	Sun or part shade, giant ornamental grass, fast growing in good soil with moisture, leaf edges are sharp, give room, old blades brown at base of plant.	
Pomegranate, Dwarf <i>Punica grantum 'Nana'</i>	D	to 3'	to 2'	Mod.	Orange-red single June	Most, drained	Sun, small red inedible fruit, showy flowers, variety 'Chico' has double flowers and is 1 ½ ft.	
Pyracantha, Graberi <i>Pyracantha fortuneana 'Graberi'</i>	E	to 15'	to 10'	Fast	Creamy white clusters, small	Most, drained	Sun, thorns, bright red winter berries, easily pruned to many sizes and shapes, subject to fireblight, many varieties available.	
Quince, Red Flowering <i>Chaenomeles</i>	D	6-10'	to 10'	Mod.	Red March-April	Most, drained	Full sun for best flowers, thorny, makes good barriers. Oriental feeling. Prune in bud or bloom, use cut branches for indoor arrangements. Shape after bloom.	
*Rockrose <i>Cistus species</i>	E	3-5'	3-5'	Fast	White, pinkish or lavender, spots at base, May-June	Most	Sun, cold to 15°, many varieties available, very durable, some ground covers or shrubs.	
Rose, Rugosa <i>Rosa rugosa species</i>	D	3-8'	2-6'	Fast	Varies by variety, single or double	Most, drained	Vigorous, mostly sun, disease resistant, good for accent or hedges, help prevent erosion, produce edible rose hips.	
Rose, Wild <i>Rosa californica</i>	E	3-6'	1-4'	Mod.	1-2" across, in clusters, pale pink, fragrant, May-June	Most	Sun or part shade, weedy, not for groomed areas, not widely available.	

Drought Tolerant Landscape Trees for Amador County (East of Highway 49)

The purpose of this chart is to give a quick reference to the growth habits, good and bad, of some of the shrubs that will become drought tolerant in Amador County, east of Highway 49 to about 3700ft. elevation. If you want to use them in other areas, check to be sure they are suitable. In compiling this list, the following criteria were used:

1. No tree is drought tolerant when first planted. Most will need regular water during the summer the first year - that is usually every 7-10 days, a little more often during extreme heat. From the 2nd-5th year, you can taper off on how frequently you water. Water deeply to encourage deep rooting.
2. Most of the trees on this list will look better with occasional summer water, even when mature. The trees on this list will usually look good with water every 3-4 weeks, when established. Some need less. Ask for guidelines when purchasing the trees.
3. Appearance - our criteria is that the tree look good with infrequent watering, not just survive. Yearly pruning will help most keep a desirable shape. Check a pruning book for guidelines..
4. Availability - Most of the trees listed are readily available at nurseries. Some are available only at certain times of the year.
5. Deer protection - fencing each tree is recommended. Fences can be removed when most or all of the branches are out of reach by the deer..

This list was compiled and researched by: Mary Larson & Judy Lester
Master Gardner Pine Grove Nursery

Updated September 1989

DECIDUOUS TREES

Deciduous Trees	Height	Spread	Roots	Growth	Flowers	Fruit	Fall Color	Soil	Remarks
Catalpa <i>Catalpa speciosa</i>	20-40'	20-30'	Deep	Rapid	White clusters June-July	Long brown pods		Most soils	Takes sun, shade, cold, prune to avoid weak wood, messy, tropical looking
Crape Myrtle <i>Lagerstroemia indica</i>	10-25'	10-20'	Shallow	Mod.	Purple, pink, red, or white clusters Jul-Sept	Brown woody capsule	Red gold	Most, drained	Full sun, infrequent deep water when buds & flowers form. Susceptible to powdery mildew, prune yearly for flowers
Dogwood, Western <i>Cornus nuttali</i>	30-50'	15-20'		Slow	White bracts Apr-May	Red berry clusters	Yellow	Well drained	Needs afternoon shade, temperamental, little water or fertilizer
Fig, Edible <i>Fig, Edible</i>	15-30'	15-30'	Deep	Fairly fast when young	Not showy	Edible, differs by variety		Most, drained	Sun, difficult to establish - protect from frost when buds swell during 1 st year or two. Avoid deep cultivation. 'Black Mission' and 'White Kadota' most popular in our area.
Golden Rain Tree <i>Koelreuteria paniculata</i>	20-30'	15-20'	Deep	Slow	Yellow clusters May-June	Red-brown papery capsule		Most, drained	Takes sun, cold, wind
Hackberry, Common <i>Celtis occidentalis</i>	30-40'	20-30'	Deep	Mod.	Inconspicuous	Small purple berries		Most	Takes sun, wind, good for lawns, narrow planting strips, leafs out late, oakroot fungus resistant
Hawthorn, English <i>Crataegus laevigata and varieties</i>	15-20'	15-20'	Medium	Mod.	Varies May-June	Scarlet berries sparse	Red orange	Most, drained	Takes sun, cold, susceptible to fireblight, has thorns, many color variations, 'Paul's Scarlet' a favorite.
Hawthorn, Washington <i>Crataegus phaenopyrum</i>	20-25'	15-20'	Medium	Mod.	White clusters May-June	red berries	Red orange	Most, drained	Takes sun, cold, has thorns, least susceptible to fireblight.
Honey Locust <i>Gleditsia triacanthos inermis</i>	35-40'	35-40'	Medium spreading invasive	Fast	Inconspicuous	Few or no pods	Yellow	Most	Takes heat, cold, wind. Lacy looking, good lawn tree, many varieties.
Locust, Black <i>Robinia pseudoacacia</i>	40-50'	20-30'	Medium spreading invasive	Rapid	White pea shaped clusters	Brown bean- like pods	Yellow	Most	Takes sun, poor soil, has brittle branches, thorns, root suckers, attracts bees
Locust, Idaho <i>Robina ambigua</i>	30-40'	20-30'	Medium spreading invasive	Rapid	Magenta clusters May		Yellow	Most	Takes sun, poor soil, brittle branches, root suckers

Deciduous Trees	Height	Spread	Roots	Growth	Flowers	Fruit	Fall Color	Soil	Remarks
Japanese Pagoda Tree <i>Sophora japonica</i>	20-40'	20-40'	Deep	Mod.	Creamy white clusters July-Aug	Yellow bead like pods		Most	Takes sun, cold, flowers attract bees, good lawn tree, fruit slippery, oakroot fungus resistant.
Oak, California Black <i>Gleditsia triacanthos inermis</i>	30-80'	10-30'	Deep	Mod.	Catkins	Acorn	Yellow range	Most	Sun, handsome foliage, spring leaves pink-dusty rose, California native
Oak, California Blue <i>Quercus douglasii</i>	40-60'	25-50'	Shallow	Mod.	Catkins	Acorn	Yellow orange	Most	Sun, heat, litters, plant by itself, California native.
Oak, Scarlet <i>Quercus coccinea</i>	60-80'	35-40'	Deep	Mod.	Catkins	Acorn	Red	Most, drained	Sun, best oak for fall color, fairly pest free
Oak, Valley White <i>Quercus lobata</i>	50-70'	50-70'	Deep	Mod.	Catkins	Acorn	Yellow	Most, drained	Sun, gets oak galls, don't over water during growing season but will take winter flooding, California native
Persimmon, Oriental <i>Diospyros kaki</i>	25-30'	30-40'	Deep	Mod.	Yellow/white not showy	Orange scarlet fleshy	Orange red	Most, drained	Sun, 'Fuyu' - firm fleshed apple like fruit; 'Hachlya' - large pointed fruit, eat when mushy; fruit production drops without regular water
Pistache, Chinese <i>Pistacia chinensis</i>	30-40'	30-40'	Deep	Slow	Not showy, male & female trees	Red nut clusters	Orange red	Most, drained	Sun, cold to 20°, inedible nuts, gawky when young, oakroot fungus resistant.
Redbud, Western <i>Cercis occidentalis</i>	10-18'	10-18'	Medium	Slow	Magenta spring	Brown pods	Yellow	Most, drained	Sun, cold, California native, oakroot fungus resistant, shrub or tree
Tupelo - Sour Gum <i>Nyssa sylvatica</i>	20-40'	15-20'	Medium	Slow	Inconspicuous	Blue-black plum-like	Red orange	Most	Sun, glossy green leaves, good fall color, don't buy root bound.
Walnut, California Black <i>Juglans hindsii</i>	30-60'	40-70'	Deep	Slow	Inconspicuous	Edible brown nuts	Yellow	Deep, drained	Sun, cold, susceptible to aphids, other plants don't do well underneath, oakroot fungus resistant.
Walnut, English <i>Juglans regia</i>	30-60'	40-70'	Deep	Mod.	Inconspicuous	Edible walnuts	Yellow	Deep, drained	Sun, cold, susceptible to aphids, other plants don't do well underneath, oakroot fungus resistant, needs regular deep water for best walnut production.
Zelkova <i>Zelkova serrata</i>	50-60'	50-70'	Shallow	Rapid			Red russet yellow	Most	Sun, cold, wind, roots can be invasive, leaves similar to elm.

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BROADLEAF EVERGREEN TREES

Deciduous Trees	Height	Spread	Roots	Growth	Flowers	Fruit	Fall Color	Soil	Remarks
Acacia, Bailey <i>Acacia baileyana</i>	15-25'	15-30'	Shallow	Rapid	Yellow clusters Feb-Mar	Seed pods		Most, drained	Moderately cold hardy, sun or part shade, brittle, no strong wind, pollen aggravates allergies
Bay Tree - Grecian Laurel <i>Laurus nobilis</i>	12-25'	10-20'	Deep	Slow	Yellow small	Black berries		Most, drained	Part shade, traditional cooking bay leaf, compact leathery leaves.
Bay Tree, California <i>Umbellularia californica</i>	20-25'	20-25'	Medium	Slow	Yellow clusters May-June	Purple olive-like fruit		Most, drained	Part to all shade, cold, wind, strong flavored leaves for seasoning, California native, single or multi-trunk
Eucalyptus, Cider Gum <i>Eucalyptus gunni</i>	40-50'	20-30'	Shallow	Rapid	White, small April-June	Brown-urn capsules		Most, drained	Sun, wind, cold to 10°, litters, strong, vigorous grower for shade, wind break or screen
Eucalyptus, Nichols' Willow-Leafed <i>Eucalyptus nicholii</i>	to 40'	to 30'	Shallow	Rapid	Inconspicuous	Brown-urn capsules		Most, drained	Sun, wind, cold to 15°, litters, thin top to prevent toppling, fine textured foliage
Eucalyptus, Silver Dollar <i>Eucalyptus polyanthemos</i>	20-40'	10-40'	Shallow	Rapid	White, small Apr-June	Brown-urn capsules		Most, drained	Sun, wind, cold to 18°, litters, excellent cut foliage
Madrone <i>Arbutus menziesii</i>	20-40'	10-30'	Deep	Mod.	White-pink spring, some years	Orange red clusters		Most, drained	Sun or part shade, messy, hard to get started, beautiful reddish bark sheds yearly.
Oak, Cork <i>Quercus suber</i>	50-70'	50-70'	Deep	Slow	Catkins	Acorn		Most, drained	Sun, corky bark, shiny dark green 3" leaves with gray beneath. Occasional winter damage.
Oak, Holly <i>Quercus ilex</i>	40-50'	40-50'	Deep	Mod.	Catkins	Acorn		Most, drained	Sun or part shade, dark, rich green 1 ½-3" leaves, silvery beneath. Can be clipped into formal shapes or hedges
Olives	If you live below 2500 feet, you might want to consider olive trees but they are temperamental about our coldest winters - sometimes they survive, sometimes they don't. Well-established trees do better.								

CONIFER TREES

Cedar, Altas <i>Cedrus atlantica</i>	50-60'	40-50'	Deep	Slow		3' Cones		Most, drained	Sun, wind, cold, 'Glauca' silvery blue, branches tend to break in heavy snows.
Cedar, Deodar <i>Cedrus deodara</i>	40-80'	30-40'	Deep	Fast		5" cones		Most, drained	Sun, wind, cold, needs space, top nods naturally, good screen, bluish-green needles.

Deciduous Trees	Height	Spread	Roots	Growth	Flowers	Fruit	Fall Color	Soil	Remarks
Cedar, Incense <i>Calocedrus decurrens</i>	50-90'	40-50'	Deep	Mod.		Small		Most	Sun, shade, heat, wind, California native, fragrant foliage, good screen.
Cypress, Italian <i>Cupressus sempervirens</i>	20-60'	8-15'	Deep	Mod.		1 ½' cones		Most, drained	Sun or part shade, narrow cone shaped, good border.
Fir, Douglas <i>Pseudotsugo menziesii</i>	to 70'	to 40'	Deep	Mod.		3" cones		Most, drained	Sun or part shade, California native, oakroot fungus resistant, pyramidal when young, can be pruned to keep dense.
Pine, Digger or Grey <i>Pinus sabiniana</i>	40-50'	20-30'	Deep	Fast		6-10" cones		Most	Sun, cold, wind, edible seeds, lacy, transparent.
Pine, Japanese Black <i>Pinus thunbergiana</i>	to 60'	30-40'	Deep	Fast		3" cones		Most, drained	Sun or part shade, hardy, takes any amount of pruning.
Pine, Knobcone <i>Pinus alleluata</i>	20-50'	15-40'		Mod.		6" cones		Most	Sun or part shade, cold, open, irregular shape when young
Pine, Pinon <i>Pinus edulis</i>	10-20'	8-15'		Slow		2" cones		Most, drained	Sun or part shade, cold, edible seeds
Pine, Ponderosa <i>Pinus ponderosa</i>	to 100' or more	30-40'	Deep	Mod.		3-5" cones		Most	Sun or part shade, cold, pine bark beetles a big problem, California native.
Pine, Scotch <i>Pinus sylvestris</i>	60-70'	40-60'	Deep	Mod.		2" cones		Most, drained	Sun or part shade, cold, wind, can be pruned to keep dense
Pine, Sugar <i>Pinus lambertiana</i>	to 100' or more	30-40'	Deep	Mod.		10-20' cones		Most	Sun or part shade, cold, sometimes temperamental, subject to beetles
Redwood, Giant <i>Sequoiadendron giganteum</i>	to 325' less in yards	75- 100'	Deep	Mod.		3" cones		Most, drained	Sun or part shade, cold, thick bark is insect and fire resistant, foliage is prickly, California native, needs iron

Updated: September 1989
Mary Larson
Master Gardner

Judy Lester
Pine Grove Nursery

PLANTS WITH SOME FIRE RESISTANCE

GENUS SPECIES

COMMON NAME

Trees

<i>Alnus rhombifolia</i>	White Alder
<i>Arbutus unedo</i>	Strawberry Tree
<i>Cercis occidentalis</i>	Western Redbud
<i>Rhus lancea</i>	African Sumac
<i>Platanus</i> spp.	Sycamore
<i>Punica granatum</i>	Pomegranate
<i>Quercus lobata</i>	Valley oak

Shrubs

<i>Ceanothus</i> spp.	California Lilac
<i>Cistus</i> spp.	Rockrose
<i>Convolvulus cneorum</i>	Bush Morning Glory
<i>Cotoneaster</i> spp.	Cotoneaster
<i>Escallonia</i> spp.	Escallonia
<i>Heteromeles arbutifolia</i>	Toyon
<i>Nerium oleander</i>	Oleander
<i>Pittosporum</i> spp.	Mock Orange
<i>Prunus ilicifolia</i>	Holly-leaved Cherry
<i>Punica granatum</i> 'Nana'	Dwarf Pomegranate
<i>Pyracantha</i> 'Santa Cruz'	Dwarf Pyracantha
<i>Rhamnus</i> spp.	Coffee Berry
<i>Rhus integrifolia</i>	Lemonade Berry
<i>Ribes viburnifolium</i>	Evergreen Currant

Ground Covers

<i>Ajuga reptans</i>	Carpet Bugle
<i>Armeria</i> spp.	Sea Pink
<i>Delosperma</i> spp.	Hardy Ice Plant
<i>Duchesnea indica</i>	Mock Strawberry
<i>Festuca rubra</i> 'Creeping'	Creeping Red Fescue
<i>Fragaria chiloensis</i>	Wild Strawberry
<i>Helianthemum nummularium</i>	Sunrose
<i>Hypericum calycinum</i>	St. John's Wort
<i>Liriope gigantea</i>	Giant Lily Turf
<i>Phyla nodiflora</i>	Lippia

Scaevola 'Mauve Clusters'
Sedum spp.
Thymus spp.

Fan Flower
Stonecrop
Thyme

Perennials

Achillea spp.
Agapanthus spp.
Centranthus ruber
Coreopsis spp.
Diets spp.
Diplacus spp.
Eschscholzia californica
Hemerocallis
Heuchera maxima
Iris spp.
Kniphofia uvaria
Lavandula spp.
Oenothera berlandieri
Penstemon spp.
Santolina spp.
Teucrium chamaedrys
Tulbaghia violacea

Yarrow
Lily of the Nile
Red Valerian
Coreopsis
Butterfly Iris
Monkeyflower
California Poppy
Daylily
Coral Bells
Iris
Red Hot Poker
Lavender
Mexican Primrose
Penstemon
Lavender Cotton
Germander
Society Garlic

Vines

Campsis spp. (invasive)
Jasminum spp.
Solanum jasminoides
Trachelospermum jasminoides

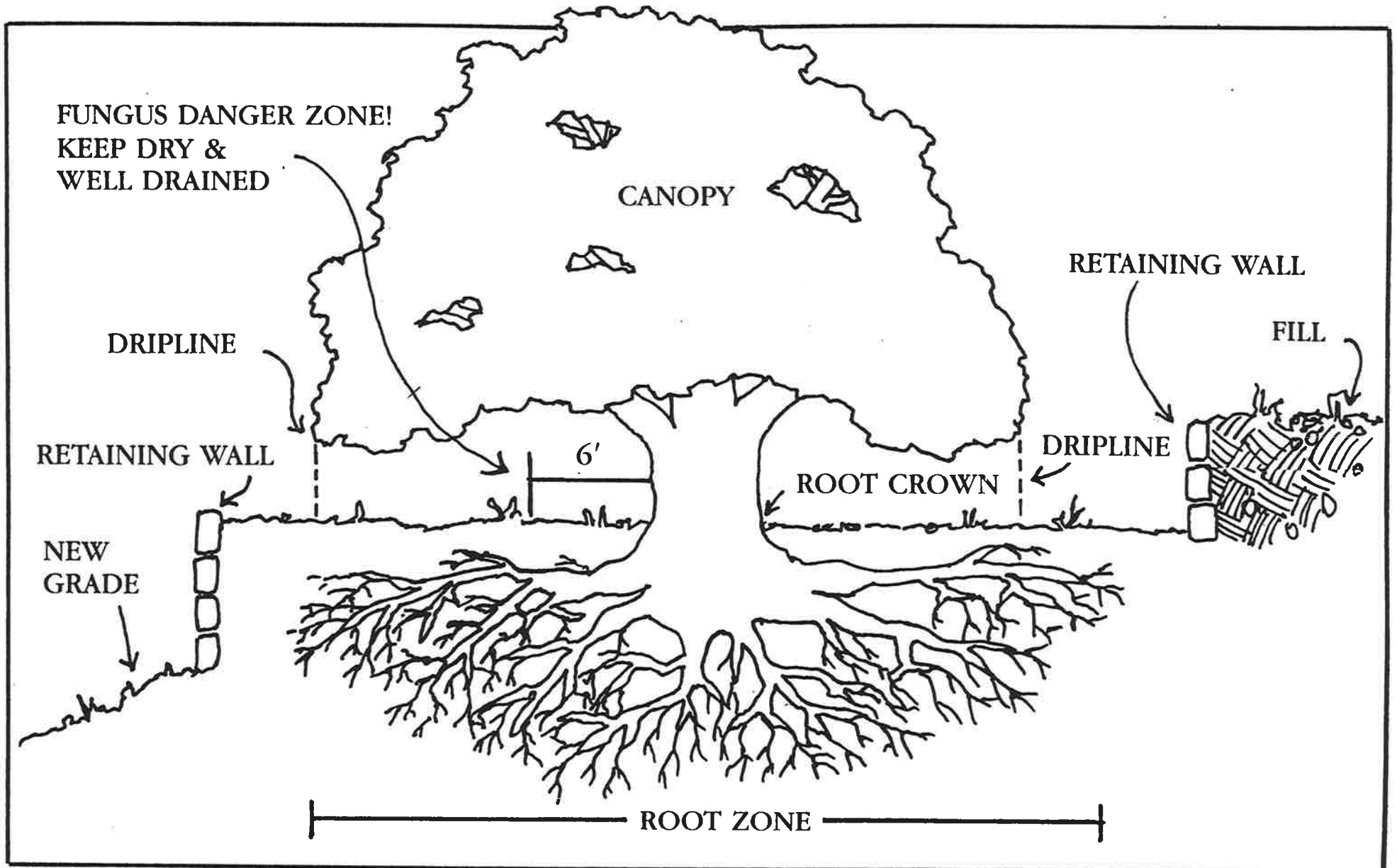
Trumpet Vine
Jasmine
Potato Vine
Star Jasmine

spp. denotes no specific species

The plants in this list are hardy in Zones 9 and most in Zone 7. These climate zones are found in Amador County and are taken from Sunset Western Garden Book where descriptions of the above mentioned plants can be found.

Sources: Plant List compiled from publications "Protecting Sierra Nevada Homes and Property From Wildfire" by University of California Cooperative Extension Amador County and "Firescape" by East Bay Municipal Utility District

DESIGN PRINCIPLES FOR LANDSCAPING UNDER NATIVE TREES
OAK TREE HAZARD ZONE



A-4

CONCEPT COURTESY OF SACRAMENTO CO. OFFICE OF EDUCATION

COMPATIBLE PLANTS FOR OAK GARDENS

GENUS SPECIES

COMMON NAME

Shrubs

<i>Abelia grandiflora</i>	Glossy Abelia
<i>Arbutus unedo</i>	Strawberry Tree
<i>Arctostaphylos densiflora</i> 'Howard McMinn'	Howard McMinn Manzanita
<i>Berberis darwinii</i>	Darwin's Barberry
<i>Buddleia davidii</i>	Butterfly Bush
<i>Carpenteria californica</i> (CN)	Bush Anemone
<i>Ceanothus</i> spp. (CN)	Wild Lilac
<i>Cercis occidentalis</i> (CN)	Western Redbud
<i>Daphne odorata</i>	Fragrant Daphne
<i>Eriogonum</i> spp. (CN)	Buckwheat
<i>Forsythia x intermedia</i>	Forsythia
<i>Fremontodendron</i> spp. (CN)	Flannel Bush
<i>Garrya elliptica</i> (CN)	Silktassel
<i>Grevillea</i> spp.	Grevillea
<i>Heteromeles arbutifolia</i> (CN)	Toyon
<i>Ilex cornuta</i> 'Rotunda'	Dwarf Chinese Holly
<i>Lupinus albifrons</i> (CN)	Silver Bush Lupine
<i>Mahonia</i> spp.	Mahonia
<i>Mimulus</i> spp.	Monkeyflower
<i>Myrica californica</i> (CN)	Pacific Wax Myrtle
<i>Myrsine africanum</i>	African Boxwood
<i>Myrtus communis</i>	Myrtle
<i>Nandina domestica</i>	Heavenly Bamboo
<i>Nerium oleander</i>	Oleander
<i>Philadelphus virginialis</i>	Mock Orange
<i>Pinus m. mugo</i>	Mugho Pine
<i>Plumbago auriculata</i>	Cape Plumbago
<i>Prunus ilicifolia</i> (CN)	Holly-leaf Cherry
<i>Prunus lusitanica</i>	Portugal Laurel
<i>Punica granatum</i> 'Nana'	Dwarf Flowering Pomegranate
<i>Rhamnus californica</i> (CN)	Coffeeberry
<i>Rhus integrifolia</i> (CN)	Lemonade Berry
<i>Ribes</i> spp. (CN)	Currant
<i>Romneya coulteri</i> (CN)	Matilija Poppy
<i>Rosa californica</i> (CN)	California Wild Rose
<i>Salvia clevelandii</i> (CN)	Cleveland Sage

Salvia greggii
Symphoricarpos rivularis (CN)
Syringa vulgaris
Teucrium fruticans
Viburnum suspensum
Viburnum tinus
Xylosma congestum

Autumn Sage
Snowberry
Lilac
Bush Germander
Sandankwa Viburnum
Laurestinus
Xylosma

Ground Covers

Achillea tomentosa
Arctostaphylos spp. (CN)
Baccharis pilularis 'Twin Peaks' (CN)
Ceanothus griseus horizontalis (CN)
Ceanothus gloriosus porrectus (CN)
Ceanothus maritimus (CN)
Ceratostigma plumbaginoides
Cistus salviifolius
Cotoneaster spp.
Erigeron karvinskianus
Fragaria chiloensis
Juniperus virginiana 'Silver Spreader'
Mahonia repens (CN)
Ribes viburnifolium (CN)
Rosmarinus officinalis 'Prostratus'
Salvia sonomensis (CN)
Sedum spp.
Sollya heterophylla
Thymus spp.

Woolly Yarrow
Manzanita
Coyote Bush
Carmel Creeper
Mount Vision
Hoover Ceanothus
Dwarf Plumbago
Sageleaf Rockrose
Cotoneaster
Mexican Fleabane
California Strawberry
Silver Spreader Juniper
Creeping Mahonia
Evergreen Currant
Prostrate Rosemary
Creeping Sage
Sedum
Australian Bluebell
Creeping Thyme

Vines

Clematis ligusticifolia
Lonicera japonica 'Halliana'
Polygonum aubertii
Vitis californica (CN)

Western Virgin Bower
Hall's Honeysuckle
Silver Lace Vine
California Wild Grape

Perennials

Acanthus mollis
Achillea spp.
Artemesia spp.
Bergenia crassifolia

Bear's Breech
Yarrow
Artemesia
Winter Blooming Bergenia

Centranthus rubra
Eschscholzia californica (CN)
Hemerocallis spp.
Heuchera spp. (some CN)
Iris douglasiana and hybrids (CN)
Iris spp.
Kniphofia uvaria
Myosotis sylvatica
Nepeta faassenii
Oenothera berlandieri
Origanum dictamnus
Penstemon heterophyllus (CN)
Penstemon spp.
Santolina spp.
Sisyrinchium bellum (CN)
Tulbaghia violacea
Viola odorata
Zauschneria californica (CN)

Annuals

Centaurea cyanus
Clarkia amoena (CN)
Collinsia spp. (CN)
Nemophila menziesii (CN)
Nigella damascena
Scabiosa spp.
Tropaeolum majus

Bulbs

Alstroemeria spp.
Amaryllis belladonna
Anemone blanda
Brodiaea spp. (CN)
Crocasmia crocosmiiflora
Cyclamen hederifolium
Freesia spp.
Lilium pardalinum (CN)
Muscari spp.
Narcissus spp.
Scilla peruviana

Red Valerian
California Poppy
Daylily
Coral Bells
Douglas Iris
Iris
Red Hot Poker
Forget Me Not
Catmint
Mexican Primrose
Dittany of Crete
Beard Tongue
Beard Tongue
Santolina
Blue-eyed Grass
Society Garlic
Sweet Violet
California Fuchsia

Cornflower
Clarkia
Chinese Houses
Baby Blue Eyes
Love-in-a-mist
Pincushion Flower
Garden Nasturtium

Peruvian Lily
Naked Lady
Anemone
Brodiaea
Montbretia
Cyclamen
Freesia
Leopard Lily
Grape Hyacinth
Daffodil
Peruvian Scilla

Ferns

Dryopteris erythrosa
Polystichum munitum (CN)

Autumn Fern
Western Sword Fern

Grasses

Deschampsia caepitosa (CN)
Elymus glaucus (CN)
Festuca californica (CN)
Festuca rubra (CN)
Helictotrichon sempervirens
Melica imperfecta (CN)
Muhlenbergia rigens (CN)
Pennisetum alopecuroides
Stipa pulchra (CN)

Tufted Hairgrass
Blue Wild Rye
California fescue
Red Fescue
Blue Oat Grass
Melic Grass
Deer Grass
Fountain Grass
Purple Needlegrass

spp. denotes no specific species
CN denotes California Native

This list of plants is to help with plant selection under and around oaks and native trees. Plant hardiness is based on Sunset Western Garden Book Climate Zones 7 and 9 (Amador County zones). Check to make sure plants are hardy in your area and check sun or shade requirements. Those species native to California coastal areas which grow in the sun there, do require some shade in the summer afternoons in Amador Co.

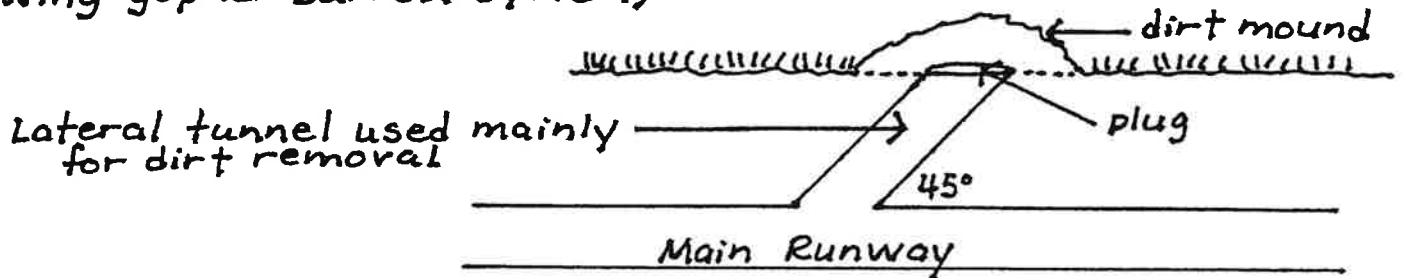
Sources: "Compatible Plants Under And Around Oaks" by the California Oak Foundation and "Living Among The Oaks - A Management Guide for Landowners" by University of California Cooperative Extension at Berkeley, Natural Resources Program.

Pocket Gopher and Mole Trap Setting Techniques

Pocket Gopher: using two Macabee Traps

① Side View

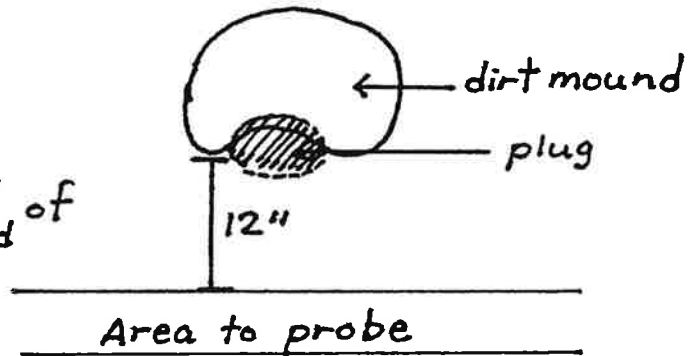
(showing gopher burrow system)



② Top View

(showing how to locate main runway)

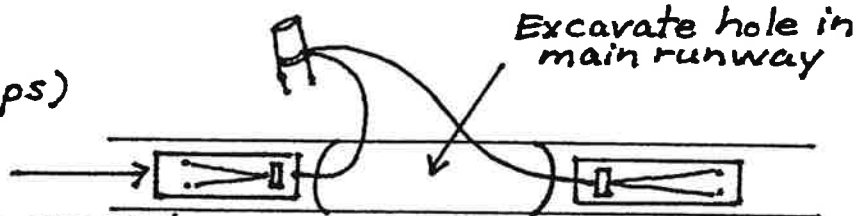
12" back from open end of crescent shaped mound begin probing



③ Top View

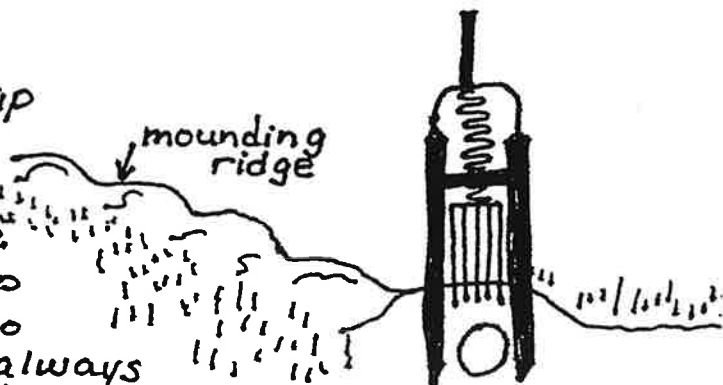
(showing excavation of main runway and placement of traps)

- place two traps in runway and wire to stake driven in above ground
- cover excavated hole with newspaper and soil
- check traps daily



Mole: using spear type trap

- tamp down soil
- place trap directly over burrow
- Mole will push trigger plate with soil, thus triggering trap
- Move trap occasionally to fresh ridges as moles do not always travel thru the same tunnel.



DEER RESISTANT PLANTS FOR THE GARDEN

GENUS SPECIES

COMMON NAME

Trees

Abies spp.	Fir
Acacia spp.	Acacia
Acer palmatum	Japanese Maple
Albizia julibrissin	Silk tree
Arbutus menziesii (CN)	Madrone
Arbutus unedo	Strawberry Tree
Calocedrus decurrens (CN)	Incense Cedar
Catalpa bignonioides	Common Catalpa
Cedrus spp.	Atlas and Deodar Cedar
Chamaecyparis spp.	False Cypress
Crataegus spp.	Hawthorne
Cupressus spp.	Cypress
Diospyros virginiana	Persimmon
Eucalyptus spp.	Eucalyptus
Ficus spp.	Fig
Ginkgo biloba	Maidenhair Tree
Liquidambar styraciflua	Sweet Gum
Magnolia spp.	Magnolia
Maytenus boaria	Mayten Tree
Olea europaea	Olive
Picea spp.	Spruce
Pinus spp.	Pine
Platanus racemosa (CN)	California Sycamore
Robinia pseudoacacia (CN)	Black Locust
Schinus molle	California Pepper Tree
Taxus spp.	Yew
Thuja spp.	Arborvitae
Trachycarpus fortunei	Windmill Palm
Umbellularia californica (CN)	California Bay

Shrubs

Baccharis pilularis	Coyote Brush
Berberis spp.	Barberry
Buddleia davidii	Butterfly Bush
Buxus spp.	Boxwood
Calycanthus occidentalis (CN)	Western Spice Bush
Ceanothus gloriosus (CN)	Point Reyes Ceanothus
Cercis occidentalis (CN)	Western Redbud
Chaenomeles japonica	Flowering Quince
Chamaerops humilis	European Fan Palm
Choisya ternata	Mexican orange

Cistus spp.	Rockrose
Coleonema spp.	Breath of Heaven
Cortaderia selloana	Pampas Grass
Cotinus coggygria	Smoke Tree
Cotoneaster buxifolius	Cotoneaster
Daphne spp.	Daphne
Dendromecon spp.	Tree Poppy
Dietes vegata	Fortnight Lily
Dodonaea viscosa	Hopseed Bush
Elaeagnus pungens	Silverberry
Erica spp.	Heath
Eriogonum spp. (except E. arborescens)	Wild Buckwheat
Escallonia spp.	Escallonia
Euonymus japonica	Euonymus
Fatshedera lizei	Fatshedera
Ferns (except Pellaea)	Ferns
Forsythia spp.	Forsythia
Grevillea spp.	Grevillea
Herbs (except Basil)	Herbs
Heteromeles arbutifolia (CN)	Toyon
Hypericum moseranum	Gold Flower
Ilex spp. (except thornless)	Holly
Juniperus spp.	Juniper
Kerria japonica	Kerria
Kniphofia uvaria	Red Hot Poker
Lantana montevidensis	Trailing Lantana
Lavandula spp.	Lavender
Leptospermum spp.	Tea Tree
Lupinus spp.	Bush Lupine
Mahonia spp.	Mahonia
Myrica californica (CN)	Pacific Wax Myrtle
Myrtus communis	Myrtle
Nandina domestica	Heavenly Bamboo
Nerium oleander	Oleander
Osmanthus spp.	Osmanthus
Paeonia suffruticosa	Tree Peony
Phlomis fruticosa	Jerusalem Sage
Phormium tenax	New Zealand Flax
Plumbago auriculata	Cape Plumbago
Podocarpus spp.	Yew Pine
Potentilla spp. (deciduous types)	Cinquefoil
Prunus caroliniana	Carolina Laurel Cherry
Punica granatum 'Nana'	Dwf. Fl. Pomegranate
Rhododendron spp. (large leaved)	Rhododendron
Rhus ovata (CN)	Sugar Bush
Ribes spp. (some CN)	Currant
Romneya coulteri (CN)	Matilija Poppy
Rosmarinus officinalis	Rosemary
Salvia spp.	Sage

Santolina spp.
Sollya heterophylla
Syringa vulgaris
Teucrium spp.
Viburnum tinus
Viburnum burkwoodii
Viburnum davidii
Yucca spp.

Santolina
Australian Bluebell
Lilac
Germander
Laurustinus
Viburnum
Viburnum
Spanish Bayonet

Ground Covers

Ajuga spp.
Arctostaphylos uva-ursi (CN)
Armeria maritima
Asarum caudatum (CN)
Campanula isophylla and others
Cerastium tomentosum
Cymbalaria muralis
Duchesnea indica
Erigeron karvinskianus
Fragaria chiloensis
Galium odoratum
Hedera helix
Hypericum calycinum
Juniperus spp.
Lamium spp.
Laurentia fluviatilis
Liriope spp.
Lysimachia nummularia
Mentha requienii
Ophiopogon japonicus
Osteospermum fruticosum
Raoulia australis
Scaevola 'Mauve Clusters'
Soleirolia soleirolii
Stachys byzantina
Teucrium chamaedrys 'Prostratus'
Verbena tenuisecta
Vinca major
Viola odorata

Carpet Bugle
Bearberry
Sea Thrift
Wild Ginger
Campanula
Snow in Summer
Kenilworth ivy
Mock Strawberry
Mexican Fleabane
Ornamental Strawberry
Sweet Woodruff
English Ivy
Aaron's Beard
Juniper
Dead Nettle
Blue Star Creeper
Lily Turf
Moneywort
Corsican Mint
Mondo Grass
African Daisy
Raoulia
Mauve Clusters
Baby Tears
Lamb's Ears
Prostrate Germander
Verbena
Periwinkle
Sweet Violet

Vines

Clematis spp.
Gelsemium sempervirens
Jasminum spp.
Solanum jasminoides
Trachelospermum jasminoides
Wisteria spp.

Clematis
Carolina jessamine
Jasmine
Potato Vine
Star Jasmine
Wisteria

Perennials

Acanthus mollis	Bear's Breech
Achillea spp.	Yarrow
Aconitum spp.	Monkshood
Agapanthus spp.	Lily of the Nile
Anemone hybrida	Japanese Anemone
Artemesia spp.	Artemesia
Aquilegia spp.	Columbine
Arabis spp.	Rockcress
Bamboo	Bamboo
Cactaceae spp.	Cactus
Centranthus ruber	Red Valerian
Chrysanthemum maximum	Shasta Daisy
Coreopsis spp. (except C. gigantea)	Coreopsis
Cyperus spp.	Cyperus
Digitalis spp.	Foxglove
Eschscholzia californica (CN)	California Poppy
Euphorbia spp.	Euphorbia
Filipendula spp.	Filipendula
Gaillardia grandiflora	Blanket Flower
Grasses, Ornamental	Ornamental Grasses
Helleborus spp.	Hellebore
Hemerocallis spp.	Daylily
Hosta spp.	Plantain Lily
Lychnis coronaria	Crown-Pink
Mimulus spp.	Monkeyflower
Monarda spp.	Bee Balm
Myosotis spp.	Forget-me-not
Nepeta spp.	Catmint
Papaver orientale	Oriental Poppy
Penstemon spp.	Beard Tongue
Rudbeckia hirta	Gloriosa Daisy
Scabiosa spp.	Pincushion Flower
Senecio cineraria	Dusty Miller
Silene acaulis	Cushion Pink
Sisyrinchium spp.	Blue-eyed Grass
Zauschneria spp. (CN)	California Fuchsia

Annuals

Ageratum houstonianum	Ageratum
Calendula officinalis	Calendula
Catharanthus roseus	Vinca
Helichrysum spp.	Strawflower
Impatiens wallerana	Impatiens
Leonotis leonurus	Lion's Tail
Lupinus spp.	Lupine
Zinnia spp.	Zinnia

Bulbs and Fleshy Roots

Allium (some)	Ornamental Allium
Amaryllis belladonna	Naked Lady
Arum spp.	Arum
Brodiaea spp. (CN)	Brodiaea
Begonia (tuberous)	Tuberous Begonia
Cyclamen spp.	Cyclamen
Dicentra formosa (CN)	Calif. Bleeding Heart
Dicentra spectabilis	Common Bleeding Heart
Freesia spp.	Freesia
Iris spp.	Iris
Ixia spp.	African Corn Lily
Leucojum spp.	Snowflake
Narcissus spp.	Daffodil
Tulipa spp.	Tulip

Most Ornamental and Native Grasses

spp. denotes no specific species
CN denotes California Native

This list of plants is a general guide and is not a guarantee of deer resistance. Plant hardiness is based on Sunset Western Garden Book Climate Zones 7 and 9 (Amador County zones).

Sources: "Sunset Western Garden Book", Deerproof Plants; "Deer Resistant Plants for Ornamental Use" Leaflet #2167 University of California; Horticulture Magazine "Co-Existing with Deer" by Mary Lynn Cox; Pacific Horticulture Magazine list of plants that usually escape deer damage.

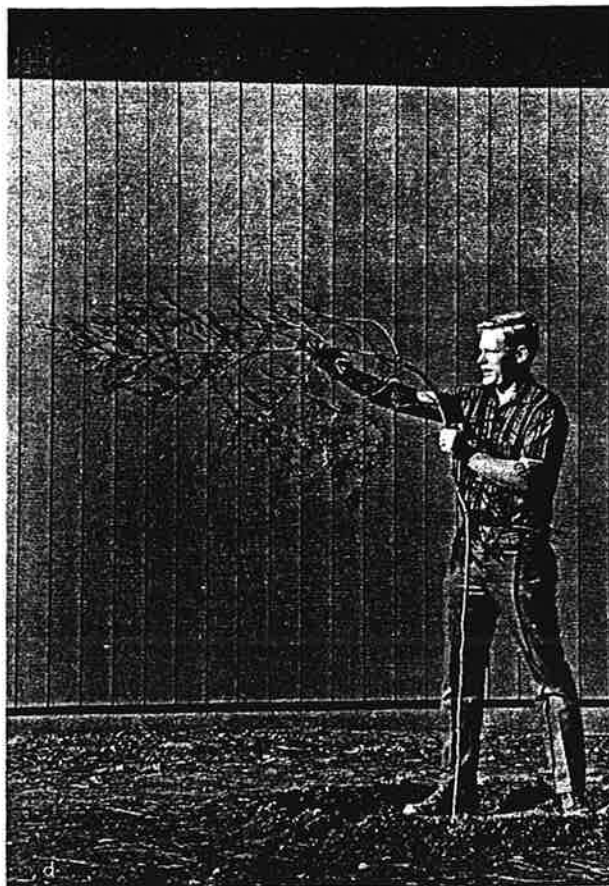
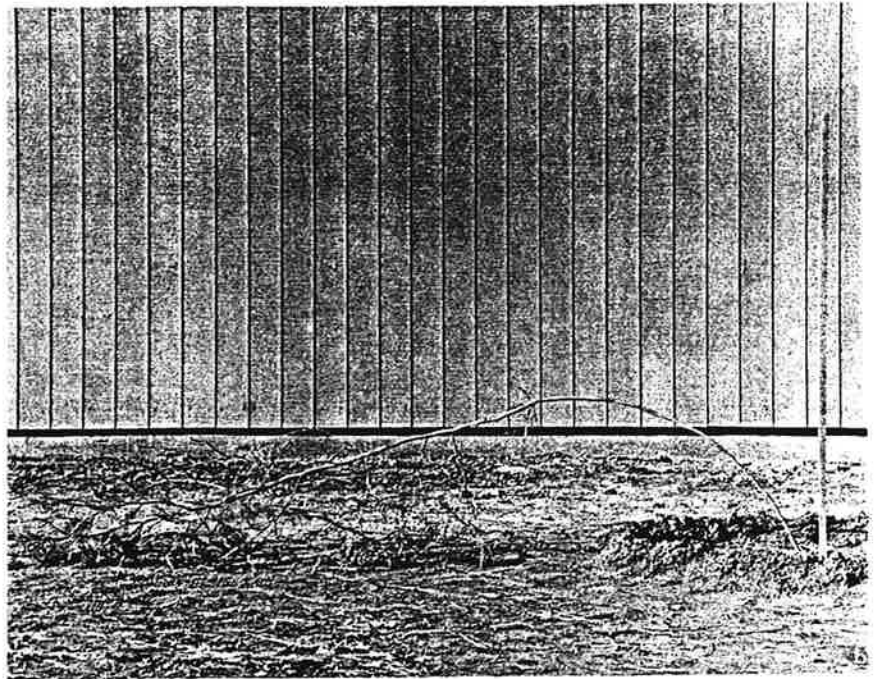
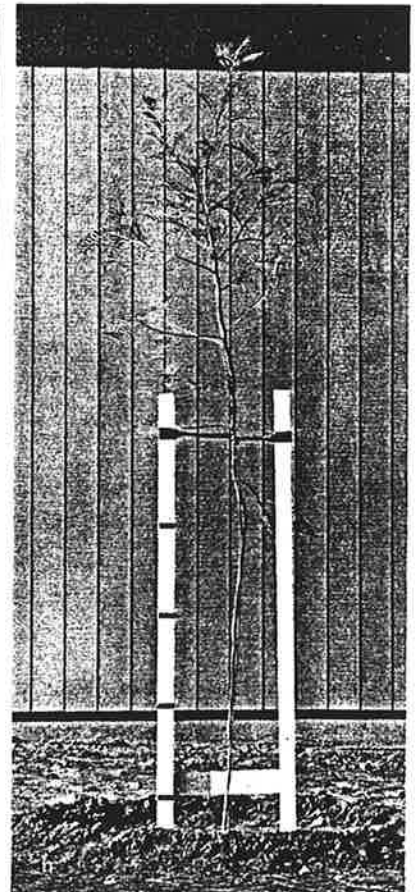
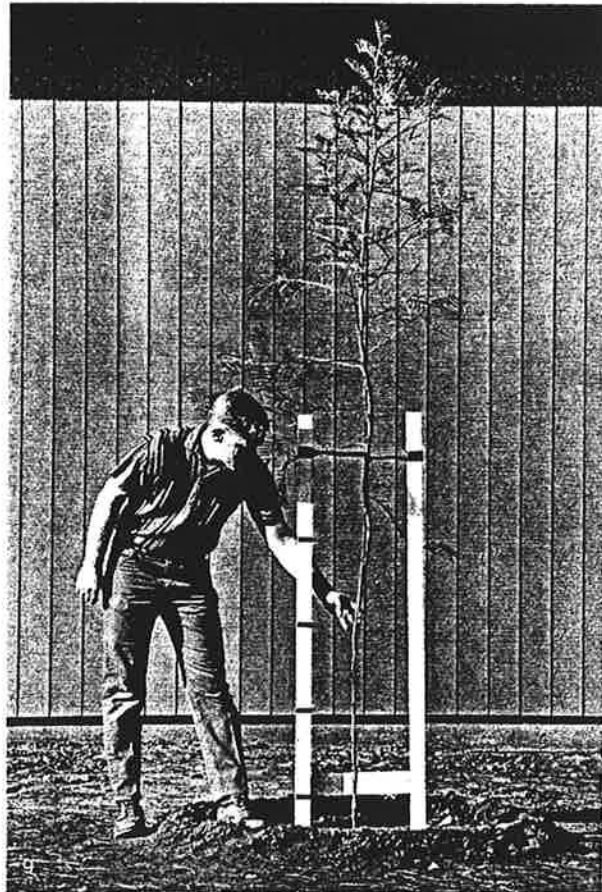
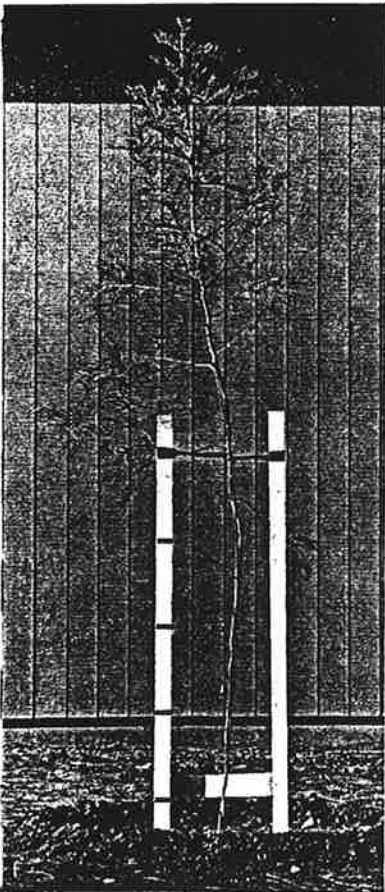
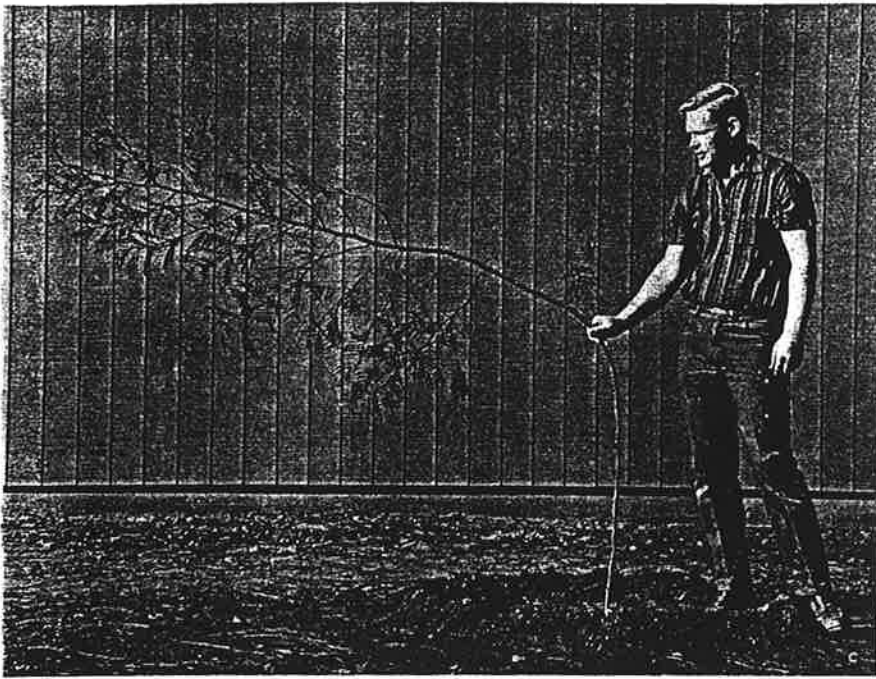


FIGURE 6. (a) Green wattle, *Acacia decurrens*, with stake to which it was tied during container production; (b) untied, it can not stand upright; (c) holding the trunk at 3 feet is not high enough to support the tree upright; (d) holding the tree at 4½ feet the top is bent; (e) when the top is released, it returns to upright; (f) the tree is tied to the stakes at this height. A 6-foot, 1/8



inch spring-steel rod is used to strengthen the spindly trunk (in fact the trunk caliper is greater at 6 feet than at 3 feet); (g) a second tie at 2½ feet as indicated by the man's hand will straighten the slight bend in the trunk; (h) pruning back the leader to a more upright lateral and light heading of some laterals develop a tree with better proportions and less trunk curvature.

