UC MASTER GARDENERS NAPA COUNTY

HEALTHY GARDEN TIPS

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GARDENING IN HARMONY WITH OUR CLIMATE

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What Is Our Climate? There are five regions of the world that enjoy the benefits and stresses of a Mediterranean climate: California, Chile, South Africa, W. Australia and the Mediterranean Basin. The dominant features are wet, mild winters when most rainfall occurs, and hot, dry summers with very little rainfall. A short spring and long autumn are the transitions between the rainy winter season and dormant summer season. Winter rains quickly bring green grass, bulbs, and flowering fruit trees. The progression of spring-like growth and bloom is early and fast. By May, most grasses and bulbs have gone dormant. By mid-summer, when water is scarce and the sun fierce, some trees are dormant or dropping leaves and most annuals have gone to seed. Landscapes depend on drought-tolerant native plants and water-wise irrigation.

Vegetation: Plants of the Mediterranean climates are often hardy and well-adapted to the rhythms of the seasons. They can stand wet feet in the winter, and thrive with no water in the summer. They are often evergreen and can provide year-round interest with winter bloom, berries, colorful bark, and interesting leaves. There are plants suited to every possible microclimate from boggy creek beds to dry shade. The gardener's job is to understand the microclimates of the areas to be landscaped, and then find the right plants for the right place.

What Are The Challenges? Summer, the season we usually refer to as "the growing season" is actually the season when landscapes are least likely to be growing. The cloudless skies and high temperatures can stress plants severely. We face dwindling water resources and increasing energy costs in this County. We have been cavalier about our plant choices, often duplicating gardens from more temperate climates when we should have been planting in harmony with our Mediterranean climate. We have built our communities and gardens without thinking of the dangers of soil erosion from wind and winter water or fire dangers in the dry season. We need to be aware, pay attention, and support our environment with wise gardening practices.

How to Plants Resist Drought? Over time natives have adapted to local environments. We can learn much about the coping strategies plants have developed by examining their leaves and roots:

Needle-like leaves: Give plants the ability to withstand sun, wind and drought. They have small surface and thick, waxy skin that helps seal in moisture and prevent drying. Also, leaves are arranged to shade each other from the full force of the sun. Examples: *Armeria, Berberis, Stenophylla, Pinus, Rosmarinus.*

Scale-like Leaves: Give plants ability to withstand sun, wind, and drought . They provide tough protection. Examples: *Cupressus, Erica, Juniperus, Thuja occidentails.*

Leathery Leaves: Give plants ability to inhibit moisture loss with tough skin withstanding sun, wind, and drought. Shiny surface means coating of salt washes off, making these good coastal residents. Examples: *Arbutus, Aucuba, Elaeagnus, Hedera, Pittosporum*.

Filligree Leaves: Because of less surface area small leaves give plant ability to inhibit loss of moisture (transpiration) especially when grown over dry, hot soil. Examples: *Achillea, Artemisia absinthium, Eschscholzia, Romneya*.

Hairy Leaves: A dense covering of fine hairs gives felty appearance and protects the leaf surface from sun, wind and salt. Hairs lower temperature within leaves, reduce moisture loss, limit drying effect of wind, trap drops of moisture from dew creating a zone of higher humidity which decreases transpiration. Hairs can act as a screen to stop sunlight before it strikes the plant. Woolly or velvety coat on leaves can be deterrent to browsing animals. Hairs are often gray or silvery which deflects sun's glare so plant absorbs less heat. Examples: *Artemisia, Brachyglottis, Convolvulus cneorum, Stachys, Phlomis, Salvia, Lavendula.*

Wax-coated Leaves: Gives plants protection from wind, sun and drought. Can give a bluish appearance. Examples: *Eucalyptus, Othonna cheirifolia, Ruta.*

Fleshy Leaves: Water-retentive leaves are tightly clustered making little leaf surface available to sun. They collect and store water. Hardened skin seals in moisture. Examples*: Calandrinia, Mesembryanthemum, Portulaca, Sedum, Sempervivum.*

Long Tap Roots: Help plant capture moisture not available at soil surface. These plants are difficult to move. Examples: *Cytisus, Eryngium, Indigofera, Lupinus, Papaver, Romneya.*

Sinuous Roots: These fine fibrous roots help to cope with shallow soil and rocky conditions by penetrating deep into cracks and crevices, following narrow seams of soil which provide some moisture and humus. Examples: *Cistus, Lavandula, Phlox subulata, Ruta, Salvia, Tamarix.*

Water-storing Roots: Help plants survive periods of drought by storing water in plump, fleshy roots. Examples: *Agapanthus, Eremurus, Hemerocallis, Kniphofia, Liriope*.

Other ways plants resist drought are by going dormant. (Examples: Bulbs, grasses, annuals, and some trees), being in their natural habitat. (Examples: *Arctostaphyllus, Eschscholzia, Aesculus*), having pungently scented leaves which release volatile oils in the heat to act as a physical sunscreen around the plant. (Examples: *Lavandula, Rosmarinus*), growing in low, scrubby hummocks to crouch from wind, hide roots. (Examples: *Armeria maritima, Ceonothus*), loving the sun. (Examples: *Cistus, Convolvulus, and Sunflowers.)*

Planting Strategies: If the gardener understands microclimates, makes good site choices for plants, chooses drought-tolerant plants, plants in the fall and mulches heavily the landscape will get off to a good start. This requires thinking about reducing turf areas and increasing hardscapes such as paths, gravel areas and stonework. It also means planting by water necessity –hydrozoning so that plants of similar water needs are planted together to use water efficiently with the appropriate irrigation system.

Beneficial Results: Understanding our Mediterranean climate and gardening in harmony with its requirements can lead to the minimal use of fertilizers, low maintenance gardens and cost efficiency since less money is spent on maintenance and replacement of inappropriate plant materials. The result is a sustainable, enjoyable landscape which reflects our regional Napa Valley, California environment. And, best of all, more time for the gardener to enjoy the garden.

Additional Reading:

Mediterranean Gardening: A Waterwise Approach. Heidi Gildemeister . University of California Press, Berkeley, 1995.

Plant Life in The World's Mediterranean Climates. Peter R. Dallman. California Native Plant Society, University of California Press, Berkeley, 1998

Water Efficient Landscapes, State of California Department of Water Resources, June 2002.

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