

# UC Landscape Plant Irrigation Trials

Jared A. Sisneroz  
Staff Research Associate  
UC Davis Plant Sciences  
jasisneroz@ucdavis.edu

Lorence R. Oki  
Landscape Horticulture  
CE Specialist  
UC Cooperative Extension  
lroki@ucdavis.edu

Dave Fujino  
Executive Director  
California Center for Urban  
Horticulture (CCUH)  
dwfujino@ucdavis.edu

Karrie Reid  
Project Lead  
UCCE Advisor  
San Joaquin County  
skreid@ucanr.edu

## Industry Cooperators

Blooms of Bressingham  
Golden State Bulb Company  
Kurapia Green Produce  
San Marcos Growers  
Tree of Life

Ball Ornamentals  
Newflora  
Plant Development Services  
Star Roses and Plants  
University of Florida

First Step Greenhouses  
Hines Horticulture  
PWEuroAmerican  
Takao Nursery  
UC Davis Arboretum

This project is funded by industry cooperators, California Association of Nurseries and Garden Centers (CANGC), the Saratoga Horticultural Research Foundation and The Elvenia J Slosson Foundation.

## Methods

- The trial spans two years, with plants planted in the fall and spring, undergoing one summer of establishment irrigation then one of deficit irrigation.
- In the first year plants are established with regular irrigation (roughly weekly during the summer with 8.3 gallons applied during each event)
- During their second summer irrigation is based upon deficit ET
- For each irrigation event 16.6 gallons is supplied to fully saturate the root zone to 18"
- 4 treatments based on 20%, 40%, 60% and 80% of reference ET with 6 reps per treatment
- Monthly plant growth measurements (l x h x w) are used to calculate a Plant Growth Index (PGI= [(l+w)/2 + h]/2)
- Monthly aesthetic ratings for foliage quality, flower quantity, vigor, health and overall appearance rating (OAR) on a 1-5 scale (1: very poor, 5: excellent)
- Plants were grown in Yolo Clay Loam in either Full Sun or 50% Shade, irrigated with drip emitters and beds were covered with 2-3" of mulch
- Irrigation recommendations are based upon a combination of plant quality and PGI results

## Results Key

- Botanical Name** lists the genus and species of each trial subject and the cultivar and the plant patent designation (if applicable)
- Common Name** includes common names and any marketing names a plant may be listed for sale as in a nursery, i.e. *Lonicera periclymenum* 'Inov 86', will be marketed as *Lonicera periclymenum* 'Peaches and Cream'
- OAR** (Overall Appearance Rating) is the mean of the monthly overall appearance ratings for the recommended irrigation treatment for each species during the deficit period
- Recommended Treatment ET%** corresponds to the treatment where a species performed the highest in our field trial
- Suggested Irrigation Frequency** provides watering guidelines for each species when planted as part of a landscape, when using these guidelines for irrigation scheduling it is important to water deeply, fully saturating the root zone and use a thick layer of mulch
- Year Trialed** lists when a selected species was trialed, for more information about a species please visit: [ccuh.ucdavis.academia/plant-trials](http://ccuh.ucdavis.academia/plant-trials)

## 50% Shade Results

<i>Botanical Name</i>	<b>Common Name</b>	<b>OAR (1: very poor 5: excellent)</b>	<b>Recomended Irrigation ET%</b>	<b>Suggested Irrigation Frequency (wks)</b>	<b>Year Tried</b>
<i>Abelia 'Abelops'</i>	Sunshine Daydream Abelia	4.5	20-80%	3-8	2011
<i>Berberis aquifolium 'Compacta'</i>	Compact Oregon Grape	4	40%	6	2013
<i>Ceratostigma plumbaginoides</i>	Dwarf Plumbago	3.4	20-80%	3-8	2013
<i>Cyrtomium falcatum</i>	Japanese Holly Fern	3.7	20%	8	2013
<i>Daphne odora 'Aureomarginata'</i>	Variegated Daphne	3.5	20-60%	4-8	2013
<i>Festuca californica</i>	California Fescue	3.8	20-40%	4-8	2013
<i>Helleborus 'Red Lady'</i>	Lenten Rose	4.2	40-60%	4-6	2011
<i>Heuchera maxima</i>	Coral Bells	4.1	20-60%	4-8	2011
<i>Hypericum 'Seifire'</i>	Ignite Red St. John's Wort	4.2	20%	8	2011
<i>Ligustrum sinense 'Sunshine'</i>	Sunshine Privet	4.9	20-80%	3-8	2011
<i>Neomarica caerulea</i>	Walking Iris	3.8	20%	8	2013
<i>Osmanthus heterophyllus 'Purpureus'</i>	Hybrid Tea Olive	1.4	40%	6	2011
<i>Ribes viburnifolium</i>	Evergreen Currant	1.9	20-80%	3-8	2011
<i>Sollya heterophylla</i>	Bluebell Creeper	4.1	20-80%	3-8	2013

## Full Sun Results

<i>Botanical Name</i>	Common Name	OAR (1: very poor 5: excellent)	Recomended Irrigation ET%	Suggested Irrigation Frequency (wks)	Year Trialed
<i>Acacia boormanii</i>	Snowy River Wattle	4.9	20%	8	2007
<i>Aquilegia eximia</i>	Serpentine Columbine	-	60-80%	2-3	2007
<i>Arctostaphylos densiflora</i> 'Howard McMinn'	Howard McMinn Manzanita	3.8	40%	4	2007
<i>Aster</i> 'Purple Dome'	New England Aster	4.2	40-60%	3-4	2007
<i>Bouteloua gracilis</i>	Blue Gramma Grass	-	20-60%	3-8	2007
<i>Buddleia</i> 'Podaras #8'	Flutterby Petite® Blue Heaven Butterfly Bush	4	60%	3	2007
<i>Buddleia</i> 'Purple Splendor'	Purple Splendor Butterfly Bush	4.3	20-40%	4-8	2009
<i>Buddleia</i> 'Podaras #13'	Flutterby Petite™ 'Tutti Fruitti' Butterfly Bush	3.9	80%	2	2009
<i>Bulbine</i> 'Tiny Tangerine'	Bulbine	4.6	20%	8	2009
<i>Calamagrostis × acutiflora</i> 'Karl Foerster'	Karl Foerster Feather Reed Grass	4.7	20-80%	2-8	2009
<i>Carex spissa</i>	San Diego Sedge	-	20-80%	2-8	2009
<i>Ceanothus × pallidus</i> 'Marie Simon'	Marie Simon Ceanothus	4.4	20-40%	4-8	2009
<i>Ceanothus</i> 'Concha'	Concha Ceanothus	3.9	20%	8	2009
<i>Ceanothus maritimus</i> 'Valley Violet'	Valley Violet Ceanothus	-	20-60%	3-8	2009
<i>Cerastium tomentosum</i>	Snow-in-Summer	3.1	20-80%	2-8	2011
<i>Ceratostigma plumbaginoides</i>	Dwarf Plumago	3.9	80%	2	2011
<i>Cercocarpus betuloides</i> var. <i>blancheae</i>	Island Mountain Mahogany	4.4	20%	8	2011
<i>Cordyline</i> 'Purple Sensation'	Cabbage Tree	2.6	20%	8	2011
<i>Delosperma cooperi</i>	Hardy Ice Plant	4.1	20%	8	2011
<i>Dianthus</i> 'KLEDG10119'	Dianthus EverLast™ Orchid	3.7	40-60%	3-4	2011
<i>Epilobium</i> 'Sidewinder'	Sidewinder California Fuchsia	4.4	20-80%	2-8	2011
<i>Epilobium</i> 'Sierra Salmon'	Sierra Salmon California Fuchsia	3.7	20-80%	2-8	2011
<i>Escallonia fradesi</i> 'Jamie'	Pink Whisper Escallonia	2.7	40%	4	2013
<i>Fallugia paradoxa</i>	Apache Plume	-	40-60%	3-4	2013
<i>Geranium</i> 'Gerwat'	Rozanne Geranium	3.7	60-80%	2-3	2013
<i>Helichrysum</i> 'Blorub'	Ruby Clusters Strawflower	3.9	40- 80%	2-3	2013
<i>Heuchera rosada</i>	Alumn Root	-	40-60%	3-4	2013

## Full Sun Results (cont'd)

<i>Botanical Name</i>	Common Name	OAR (1: very poor 5: excellent)	Recomended Irrigation ET%	Suggested Irrigation Frequency (wks)	Year Trialed
<i>Iris</i> 'Canyon Snow'	Canyon Snow Iris	3.9	60%	3	2013
<i>Isomeris arborea</i>	Bladderpod	3.6	20%	8	2013
<i>Kniphofia</i> 'Christmas Cheer'	Christmas Cheer Red Hot Poker	3.3	40-80%	2-4	2013
<i>Kniphofia</i> 'Elvira'	Elvira Red Hot Poker	3.3	60-80%	2-3	2013
<i>Leucophyllum langmaniae</i> 'Lynn's Legacy'	Lynn's Legacy Texas Ranger	4.8	40%	4	2013
<i>Lippia nodiflora</i> 'Campagna Verde'	Kurapia	4.2	20-40%	4-8	2013
<i>Lomandra confertifolia</i> 'Seascape'	Seascape Mat Rush	3.5	40-80%	2-4	2013
<i>Lomandra longifolia</i> 'Lomlon'	Bushland Green/Lime Tough Mat Rush	4.3	20-40%	4-8	2014
<i>Lonicera periclymenum</i> 'Inov 86'	Peaches and Cream Honeysuckle	3.4	60%	3	2014
<i>Mimulus</i> 'Curious Georgie Boy'	Curious Yellow Monkeyflower	3.2	20%	8	2014
<i>Miscanthus sinensis</i> 'Little Zebra'	Eulalia	4.2	40-60%	3-4	2014
<i>Muhlenbergia dubia</i>	Pine Muhly	4.3	20%	8	2014
<i>Penstemon heterophyllus</i> 'Margarita BOP'	Margarita B.O.P Foothill Penstemon	4.8	20%	8	2014
<i>Phlomis purpurea</i>	Purple Phlomis	3.8	20-60%	3-8	2014
<i>Rosa</i> 'Korbin'	Iceberg Rose	4.2	60%	3	2014
<i>Rosa</i> 'Pink Grüss an Aachen'	Pink Grüss an Aachen Rose	3.6	40-80%	2-4	2014
<i>Salvia microphylla</i> 'Hot Lips'	Hot Lips Sage	4	40-60%	3-4	2014
<i>Saponaria × lempergii</i> 'Max Frei'	Soapwort	3.9	40%	4	2014
<i>Teucrium chamaedrys</i> 'Prostrata'	Dwarf Germander	4.2	60%	3	2014
<i>Teucrium fruticans</i> 'Azureum'	Bush Germander	3.9	20-40%	4-8	2014
<i>Trachelospermum</i> 'Sassy'	Sassy Sarsparilla Jasmine	-	-	Not Recomend- ed in Full Sun	-