UC Landscape Plant Irrigation Trials
Final Report 2016-2018

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Overview

These are the results from 2-year perennial plant trials conducted from 2016-2018 at the UC Landscape Plant Irrigation Trials (UCLPIT™) field on the UC Davis campus in USDA climate hardiness zone 9b, USDA heat zone 8, Sunset climate zone 14. The field soil is Yolo silty clay-loam with a plant available water supply of approximately 3.7" in the top half meter of soil. Irrigation is applied to target a root zone volume equal to a 1m-wide circle ½ m deep which holds approximately 19.4 gallons of plant available water. Irrigation treatments were applied to coincide with the Water Use Classification of Landscape Species levels of High, Moderate/Medium, and Low. The field was maintained free of weeds manually in sensitive areas and by herbicide applications where there was no risk of damage from drift. Pre-emergent herbicides were used only on the perimeter of the field and not between rows to evaluate the potential for re-seeding. We applied no insecticides, miticides, fungicides, or fertilizers.

Three Open House ratings events for landscape and horticultural professionals and UC Master Gardeners were held in early May, mid-July, and late September, with 64, 36, and 88 attendees respectively, at each event. Participants rated one representative plant of each cultivar on each treatment or three plants per cultivars, usually the best examples, and these results are incorporated into the report. Differences between open house attendees' ratings and the trials staff are sometimes attributable to this fact: while they were looking at one good plant, we rated and averaged all eight.

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We would like to acknowledge the efforts of the following people who made these trials possible: Shirley Alvarez, Cheryl Gartner, Bridget Giffei, and Dan Rivers.

Table 1. Average overall appearance ratings from April to October 2018 for 18 perennial landscape plant cultivars on 3 ETo-based irrigation treatments.

PLANT NAME		Average Overall Appearance Rating Scale is 1-5 (1 is low, 5 high)			We Recommend
SUN	**ETo%**	**80**	**50**	**20**	
Dianella revoluta 'DR5000' - Little Rev™		3.7	3.7	3.6	**50-20**
Dietes bicolor 'African Gold'		4.2	4.2	4.1	**20**
Distylium 'Vintage Jade'		2	2.3	2	**NR***
Lagerstroemia indica 'Deleb' - Delta Eclipse™		4.2	4.2	4.1	**20**
Lagerstroemia 'Purple Magic'		4.1	4.1	4.1	**20**
Lomandra fluviatilis 'ABU7' - Shara™		3.9	3.9	3.7	**20**
Nandina domestica 'Sunset Boulevard'		2.5	2.5	2.3	**NR***
Rosa 'KORbatam' - Winter Sun™ Eleganza®		3.3	3.3	3.4	**20**
Rosa 'Meikokan' – Tequila Supreme®		3.7	3.6	3.5	**20**
Rosa 'Meisentmil' - Lemon Drift®		3.9	3.7	3.6	**20**
Rosa 'Radcon' – Pink Knock Out® rose		4.1	4.1	4.3	**20**
Tulbaghia 'Ashanti'		3.8	3.6	3.7	**20**
Vitex agnus-castus 'PIIVAC-I' – Delta Blues™		4.2	4.2	4.3	**20**
Westringia fruticosa 'NFL25' Mundi		3.7	3.6	3.7	**20**
SHADE					
Abelia grandiflora 'Wevol' Bella Donna		2.5	2.5	2.4	**NR***
Ceanothus griseus var. *horizontalis* 'MATCEA01' Highlights™		3.8	3.9	3.8	**20**
Illicium parviflorum 'PIIIP-I' BananAppeal®		2.4	2.1	1.8	**NR***
Lomandra longifolia 'LM300' Breeze™		3.7	4.2	3.7	**50**

***Not recommended in our region**

Table 2. 2018 Deficit Irrigation Frequency Details between April 23 and October 5

ETo %	# of Irrigations	Avg. Interval (days)	Dates of Irrigation (all treatments irrigated fully on 4/23)	Total Water Applied	
SUN				in.	gal.
80	10	15	5/10, 5/25, 6/07,6 /20, 7/03, 7/17, 7/29, 8/13, 8/29, 9/18	30.9	160.2
50	6	23	5/19, 6/11, 7/02, 7/23, 8/16,9 /12	19.6	101.6
20	2	54	6/25, 8/20	8.4	43.6
50% SHADE					
80	4	39	6/22, 7/27, 8/29, 9/27	11.2	58.1
50	5	68	7/16, 9/5	5.6	29.0
20	0				

RESEARCH METHODS

Twenty-four plants of each cultivar or species (Table 1) were placed 2 meters apart in rows 2 meters apart. The 1m-wide rows were covered with 2 to 3 inches of chipped-wood mulch, and a ring of inline drip tubing was laid beneath the mulch in the root zone of each plant. Each drip tubing ring had 4 emitters, 6" apart, each rated at 0.8gph, for a total of 3.2gph per plant. Plants were placed according to a randomized complete block pattern in two blocks (north and south) to provide 8 of each species on each of 3 irrigation treatments. The four species under 50% shade cloth were in one randomized complete block.

All plants except roses were planted in October or November 2016. All roses were installed in February 2017 from bareroot stock. Irrigation treatments were based on percentages of reference evapotranspiration, or ETo as described in Water Use Classification of Landscape Species IV (http://ucanr.edu/sites/WUCOLS). Immediately following planting and during the first irrigated growing season (from the cessation of rain in spring to recurrence in fall) all plants were irrigated at 100% of ETo when 25% of plant available water was depleted. This encourages establishment of a deep, healthy root system without imposing stress. During the subsequent irrigated growing season, rain was sufficient for plant need through the middle of April, and all plants were fully watered April 23 to begin the deficit irrigation schedules. From May through October 2018, all plants received the same amount of water when irrigated to replace 75% of plant available water in the root zone, but how often they received it was determined by their designated water-use percentage of ETo. The hypothesis is that plants using water at a lower rate than the reference plant will take longer to use up the plant available water in the soil, or if all available water is used, they can withstand the drought condition until water is provided again. Data from the local California Irrigation Management System (CIMIS) Davis station (#6) was used in a water budget to determine the irrigation timing for each treatment (https://cimis.water.ca.gov/). The budget in shade is adjusted for lower solar radiation. The percentages of ETo used in this trial were 20%, 50%, and 80%, which correspond respectively to the WUCOLS Low, Moderate, and High water-use categories.

Plant width, length, and height measurements were taken monthly during treatments. A plant growth index (PGI) was calculated to quantify the growth of plants using the formula **[(l +w)/2 +h]/2,** where l, w, and h represent length, width, and height of the plant. To account for differences in initial plant size a relative PGI was calculated for each plant each month during the deficit irrigation treatments using the formula $\mathbf{PGI_m/PGI_i}$, where PGI_i stands for the initial PGI, and PGI_m stands for the month's PGI. Qualitative performance ratings (on a scale of 1-5) were taken monthly in the following categories: foliage appearance, flowering abundance, pest tolerance, disease resistance, vigor, and overall appearance (the "WOW" factor). Flowering in the grasses is counted as coverage when either the flower head or seed spike remains attractive and ornamental. A description of the ratings criteria is shown in Table 3.

Since mortality led to uneven "n" values for some species, weighted means were used in data analysis across and between treatments using ANOVA and Tukey's HSD post-hoc at $p \leq 0.05$ and $p \leq 0.01$.

Table 3. Description of quality ratings criteria

RATING	5	4	3	2	1
Foliage	perfect to excellent; plant is in full leaf with no signs of leaf burn, disease or insect damage, and has an appealing shape and uniformity	same as 5 except for minor tip burn, edge damage, or minor damage to only a few leaves that does not much affect the overall appearance	acceptable but not its best; non-uniform; minor damage to all leaves that is less evident from a distance, or severe damage to no more than 25% of plant	unacceptable; moderate damage to most of the plant or major damage to more than 25%; plant is declining and may not recover; may be extremely non-uniform	unacceptable; close to dead
Flowering	full bloom; the height of bloom for the species	61-80% of plant in bloom	41-60% of plant in bloom	21-40% of plant in bloom	1 bloom open to 20% in bloom
Pest Tolerance/ Disease Resistance	no visible damage	minor to moderate damage to one or two leaves or stems, or only very minor damage to a few leaves (<25%)	minor damage to many of the leaves or flowers; appearance still acceptable from a distance (25-50%)	major damage; appearance unacceptable (51-75%)	severely damaged and probably dying (>75% affected)
Vigor	pushing out a lot of new growth from every growing point	pushing out new growth from many growing points (50-75%)	Plant is surviving and healthy, but not pushing out much new growth, if any (<50%)	Plant is very small for the species or unhealthy, and declining	Plant is barely alive; close to death
Overall Appearance	**An impressive plant**; everything works together: flowers (if present), leaves, the shape and condition of the plant are all very appealing. It has the WOW factor that makes it an attractive garden plant, even if each individual factor isn't perfect.	**A very attractive plant**; may be a 5 when in bloom, or just a very nice plant that lacks the WOW factor, or is not quite at its prime.	**An acceptable plant**; may be past or not quite to its prime; might be better if more uniform; may be described as an 'okay' plant.	**Unacceptable plant** for any of the above reasons	**Completely unacceptable** and not likely to improve

GENERAL NOTES

For the most part, photos of plants in Appendix B are the specimens rated by Open House Ratings Days participants. These plants were flagged in late April and photographed as the representative plant for each cultivar. Additional specimen photos were taken when something of interest was being captured. Many of the photographs displayed in this report are from September or October to show their appearance after the maximum amount of deficit irrigation treatment effects. Species where flowering is a significant portion of their ratings are shown during their peak bloom time. Additional photos are occasionally added to illustrate points in the narrative as a matter of interest. Ratings and/or measurement data sometimes begins in April and sometimes May or later. Anytime these tables begin after April it is due to pruning that delayed the start of the relative plant growth measurements' starting point.

FULL SUN RESULTS

***Dianella revoluta* 'DR5000' - Little Rev™ flax lily Final W x H: 73 cm (29") x 56 cm (22")**

Little Rev flax lily is a small grass-like plant, possessing an architectural form due to its stiff, upright, blue-green leaves (Figures 18a-18c). When averaged over the entire growing season, there was no statistical difference between treatments in any of the aesthetic ratings for Little Rev, and plants were rated good to very good (3.5- 4) on their overall appearance with excellent pest and disease resistance on all irrigation levels (Table 7a). Only in October, at the end of the trial period, were there any significant differences: Foliage ratings of the Low treatment were lower than both the High and Moderate treatment plants, and the Overall Appearance rating on the Low treatment was significantly lower than the Moderate treatment plants. Beginning in June, the relative plant growth rate of the Low treatment was significantly lower than the Moderate and High treatments, though all treatments' absolute size ended statistically very close (Figures 1a-1b). Under these soil and climate conditions this cultivar could be grown acceptably on any of the WUCOLS irrigation levels in this trial, but we recommend irrigating it according to the Moderate category for optimal appearance or Low for acceptable performance, except in years where fall and winter rains may be delayed which could further negatively impact the plant's appearance. Flowering occurred from May to July, with 14 of 24 plants producing at least one flower spike. The average flowering rating on all treatments was 1, with only one individual plant ever achieving a rating of 2. From a landscape management perspective, this is a potential benefit as this cultivar, grown mainly for foliage, may require little maintenance to remove spent flowers.

Participants at the open house events appreciated the "attractive plant shape," "stiff structure," and "healthy clumping," suggesting possible uses in group plantings or containers. The mean overall appearance rating at the open house events was between 3 and 4 at all three events and on all treatments (Table 7b). Like other cultivars of *Dianella* we have tested, Little Rev develops some browning at the leaf tips. This seems to be a natural habit of the plant rather than a symptom of stress. That said, open house participants consistently commented on "minor leaf tip browning" at all three events noting, "if not for brown tips, foliage would be '5'."

***Dietes bicolor* 'African Gold' - Pure Gold Dietes** **Final W x H: 164 cm (64") x 99 cm (39")**

Pure Gold is a newer cultivar of the landscape stalwart *Dietes bicolor*, commonly called fortnight lily. The unique selling point of this cultivar is brighter yellow petals than the species with flecks of orange around the rich dark brown eyes of the three lower petals (Figure 19a). There were no significant differences in growth between treatments (Figures 2a-2b). There were also no differences between treatments in any of the aesthetic ratings, except in the month of July when the foliage ratings on the Low treatment briefly dropped significantly lower than the Moderate treatment plants (Table 8a). One of the two irrigation applications for the Low treatment was in early July, and subsequently, plants recovered comparable appearance to the higher irrigation treatments by the August rating date. With comparable growth data and very good appearance on all irrigation levels, Pure Gold is a highly recommended plant for the Low water use category.

Before Pure Gold had bloomed, participants at our Spring Open House expressed skepticism over the need for another *Dietes*, which they viewed as a trite and unimpressive landscape plant. As the plants began to bloom this sentiment changed, and folks who had previously expressed their lack of interest in this genus as a whole began to express appreciation of the "attractive shape, nice looking flowers, abundant blooms," and "vibrant color combination." Overall Pure Gold scored well at all three public events, with Overall Appearance scores in the high 3s and low 4s (Table 8b). The consensus was that the plants seem "to always look reasonably good. Not a wow but a good landscape plant."

***Distylium* 'Vintage Jade'** **Final W x H: 99 cm (39") x 51 cm (20")**

This genus has been the focus of increased breeding efforts over the past 10-15 years as an alternative to evergreen shrubs such as *Euonymus* or *Rhaphiolepis*. While uncommon in California, *Distylium* cultivars are increasingly utilized in landscapes in the Southeastern US. In this trial, there were no significant differences between treatments in relative plant growth (Figures 3a-3b). In aesthetic ratings over the whole season, the Moderate treatment outperformed the Low treatment in Foliage quality and rated significantly better Overall Appearance than both Low and High treatment plants (Table 9a). These ratings were consistently so low after spring, however, that it never achieved a really acceptable landscape appearance, leading trials staff to conclude that this plant does not perform well in full sun in California's Central Valley. Because of this, *D.* 'Vintage Jade' is currently under evaluation under 50% shade cloth for the 2019 season to see if it may perform better in that environment.

Open house participants appreciated the "interesting form" and shape that "may make a good hedge," but as the season progressed, the foliage on Vintage Jade tended to bleach to yellow and older foliage at the base dropped resulting in a sparse, lanky appearance. This condition resulted in low overall ratings (Table 9b).

***Lagerstroemia indica* 'Deleb' - Delta Eclipse™ crape myrtle** **Final W x H: 101 cm (40") x 101 cm (40")**

The unique selling point of Delta Eclipse is the rich, dark foliage, which open house participants described variously as red, red-brown, purple, burgundy, and a "good chocolate color with a bit of sheen." When contrasted with the orchid pink flower color, it made quite a striking display in bloom (Figure 21a). The foliage color remained throughout the season,

neither bleaching out or turning green as can occur in other species with dark foliage. Flowering started in July and continued through October with peak bloom occurring in August and September (Table 10a). Three individuals flowered early in May and June. Trials staff and several open house participants noticed that some plants had dried and curled leaf edges late in the season. Delta Eclipse was popular at events, being the second and third most favorite plant of the Summer and Fall Open Houses, respectively (Table 10b). There was no difference in growth between treatments (Figures 4a-4b). Final size (above) is not reflective of eventual size of this woody perennial. Delta Eclipse was scored high in all aesthetic rating categories, with no differences observed between treatments. An additional bonus was that dead flowers were quickly self-cleaning leaving shiny reddish seed pods, giving the plant a tidy appearance even after blooming. Due to the lack of difference in performance between treatments, we recommend Delta Eclipse as an excellent performer for Low water.

***Lagerstroemia* 'Purple Magic' – Purple Magic crape myrtle** **Final W x H: 70 cm (27”) x 63 cm (25”)**

Participants at the Spring Open House commented on the “beautiful foliage/high gloss” with a “contrast between new and older foliage” due to red-colored new growth. Orchid purple flowers emerged in July with heavy bloom occurring through early September and lighter bloom continuing into October (Figure 22a). Participants at the Summer Open House highlighted the “large flowers on such a compact plant.” The foliage remained clean and healthy as the season progressed. The persistence of spent flowers affected Overall Appearance scores from both Fall Open House participants and trials staff for this cultivar. We found no difference in aesthetic ratings between any treatments (Table 11a). Final size (above) is not reflective of eventual size of this woody perennial and there were no differences in growth between treatments except a brief difference between the High and Moderate treatments in the month of August (Figures 5a-5b). With excellent performance on all irrigation treatments, we recommend this plant be irrigated according to the WUCOLS Low category.

***Lomandra fluviatilis* 'ABU7' - Shara™ Lomandra** **Final W x H: 129 cm (51”) x 53 cm (21”)**

Shara developed a tidy, compact form, with fine-textured foliage that was spikey yet soft (Figure 23c). Open house participants liked how the “graceful” foliage “catches the breeze easily” and the “way it moves in the breeze.” Since seedheads on ornamental grasses function as flowers and are viewed positively, we rated these persistent structures as flowers in our Floral ratings. Open house participants displayed a wide range of preferences for the seedheads, ranging from “interesting” to messy, or simply negating to rate them as flowers. Although plants developed brown forked tips, this is a habit of the species rather than a sign of stress. Throughout the season, Shara was colored medium green with some yellow and gold colored foliage distributed throughout the canopy, which was viewed as seasonally relevant “gold overtones” at the Fall Open House. The coloration, along with the consistent, uniform habit resulted in Shara ranking as the third favorite plant at the open houses (Table 12b). There were no significant differences between treatments in growth measurements or aesthetic ratings and we recommend irrigating Shara according to the WUCOLS Low Category (Figures 6a-6b; Table 12a).

***Nandina domestica* 'Sunset Boulevard' Final W x H: 23 cm (9") x 18 cm (7")**

This cultivar of *N. domestica* never reached its full potential in our trials. Though a striking red coloration was observed during the preceding winter, foliage was often discolored due to sun and stress in the deficit season (Figure 24a). These plants also displayed a lack of vigor, with mean monthly scores of 3 or above occurring only 4 times for all treatments over the deficit season (Table 13a). Open House participants in the spring listed Sunset Boulevard as "too small to evaluate" while others were "still under-impressed with this plant" in the fall (Table 13b). No difference was observed in growth measurements or aesthetic ratings between treatments (Figures 7a-7b). Based on its unacceptable Overall Appearance scores throughout the season on all treatments, we would not recommend planting Sunset Boulevard in the full sun in this region. Staff did install several plants in the 50% shade field to observe any differences that might occur. Although a full evaluation would be necessary for meaningful comparison, anecdotally plants in the shade were slightly larger, and possessed slightly higher foliage quality scores. It has been suggested and is possible that the small size of the stock we received may have been an indicator of weak plants, and a repeated trail with larger, sturdier stock might yield different results.

***Rosa* 'KORbatam' - Winter Sun™ Eleganza® rose Final W x H: 106 cm (42") x 88 cm (35")**

Winter Sun is a hybrid tea rose with fragrant, cream yellow flowers and an upright form characteristic of this class of roses (Figure 25a). Just coming into bloom during the Spring Open House, participants admired the "big pale yellow" blooms with "a tinge of pink," and a "nice scent." Trials staff did not deadhead the plants, and Winter Sun proved to be a prolific hip producer, either adding to or detracting from the appearance ratings depending upon individual preference. Open house participants generally disapproved of the green hips in the summer, while appreciating them once they changed to warmer yellow or orange in the fall. Flowers on Winter Sun do fade with age, and personal preferences of the open house raters ranged from "interesting color change," to "unattractive, insipid white" blooms.

Foliage quality began to decline early in the summer with thrips and aphid feeding especially heavy on this cultivar (Table 14a). One Fall Open House participant commented that "the leaves would have rated higher if not so 'gleaming' with honeydew." Plants had very good Overall Appearance ratings early on then fell to acceptable/average by mid-summer due to this pest pressure and a tendency for individual plants to have non-uniform (lop-sided) growth (Figures 25b-25f). Unlike true shrub roses, this hybrid tea really declined in its performance as a landscape placeholder by the middle of September. Growth measurements and aesthetic ratings data indicated performance was consistent across all treatments leading us to recommend irrigating this rose cultivar according to the Low category of WUCOLS (Figures 8a-8b).

***Rosa* 'Meikokan' – Tequila Supreme® rose Final W x H: 126 cm (50") x 85 cm (33")**

The color of the blooms on this vigorous and dense shrub rose is unique and eye-catching, and the ruffled petals just add to the appeal (Figure 26a). Open House participants mostly commented on this aspect of the plants. Tequila Supreme was third on the Favorite Plant of the Open House list at our summer event. Minor black spot and leaf spot early in the season affected foliage, but by midsummer these leaves had mostly fallen. Later in the

summer, aphids became an issue and heavy honeydew made the leaves really shiny and created a halo of stickiness on the ground surrounding the shrubs. Fortunately these issues had no real effect on plant vigor, though open house participants found this undesirable. Overall plant appearance was very good to good through September on all irrigation treatments, with this rating dipping in October as plants showed an early finish to the season (Table 15a). One peculiar aspect of this shrub rose was the tendency to throw a long branch sideways; it could have been that these long canes grew straight up but couldn't support themselves and fell sideways by the time we saw them in the field. Because this is a "no summer pruning" trial, this natural habit of the plant detracted somewhat from the uniformity and otherwise great overall appearance of the shrubs. With some minor management of this habit, this heavily flowering cultivar would make an excellent addition to any landscape. There were no significant differences in growth or overall appearance between the irrigation levels (Figures 9a-9b). We recommend irrigating according to the WUCOLS Low category.

***Rosa* 'Meisentmil' - Lemon Drift® rose** **Final W x H: 110 cm (43") x 48 cm (19")**

Lemon Drift is a prolifically blooming groundcover rose that performed at a very good level on all irrigation treatments with no significant differences in overall appearance between treatments (Table 16a; Figures 10a-10b). Only with the second flush of blooms in September did the High treatment display a significantly greater percentage of bloom than the Low treatment. This low-grower kept a dense habit with a modest spread that had no differences in growth between treatments (Figures 10a-10b). The only downside to this cultivar is that it does not self-clean, and after a large flush of blooms, the remaining calyces can create a somewhat messy appearance that some open house raters found unappealing. In the fall when the hips were more fully formed, with coloration changing from green to red/orange, the opinion of the hips once again varied from "a good thing" to "unattractive". Most found the habit to be tidy and attractive and appreciated the delicate yellow color of the blooms. We recommend irrigating this plant according to the WUCOLS Low category.

***Rosa* 'Radcon' – Pink Knock Out® rose** **Final W x H: 159cm (63") x 100 cm (39")**

Pink Knock Out was a truly superior shrub rose in our trials. With mostly clean, dark green foliage and consistently rounded, uniform habit, it bloomed throughout the season with the largest flushes in May, July, and August, and a decent showing of blooms in other months as well (Table 17a). Early thrips damage mostly disappeared and only lower interior (and therefore unnoticeable) foliage showed any signs of damage. All ratings were very good throughout the season with no significant differences between treatments in any month or over the whole period (Table 17a). It is worth noting that, though the differences are not significant, the ratings for the Low water treatment were marginally the highest for the Vigor, Flowering, and Overall Appearance categories. There were no significant differences in growth between treatments, making this plant an excellent choice for a medium-sized pink flowering shrub in the Low water WUCOLS category (Figures 11a-11b).

As with most really floriferous plants, the one drawback was the period immediately following a heavy bloom before spent petals or calyces had fallen. In the fall, many open house participants appreciated the way the dark pink and faded, pale pink flowers adorned the shrub at one time. However, most made some notice of the undesirable habit of holding dead petals

and calyces too long, even if they otherwise like the plant (Figure 28d). If this were intolerable, it could be managed fairly easily by brushing the plants with a leaf rake. When queried about which cultivar open house participants would recommend in a professional capacity, Pink Knock Out was the second most common response at the Spring and Summer Open Houses. Additionally Pink Knock Out was the second on the list of favorite plants at the Spring Open House.

***Tulbaghia* 'Ashanti' society garlic** **Final W x H: 49cm (19") x 31 cm (12")**

This small cultivar of society garlic has softer, slightly blue-gray tinged foliage and the flowers are a paler lavender color than the species (Figures 29a). Plants started off the season healthy and full of blooms. It was rated very good in all quality categories on all irrigation treatments through July (Table 18a). Trials staff did not observe any of the garlic fragrance commonly associated with *Tulbaghia* when removing spent flower heads in the early spring or collecting growth data. Some of the typical garlicky aroma was noticed when removing the plants in October, though our observation is that this cultivar is less pungent than *T. violacea*. Beginning in August, Overall Appearance ratings began to slip, especially on the Low irrigation level and by September all treatment levels had fallen to just acceptable or below (Table18a). The main detriment to this plant's appearance is a side effect of its incredible floriferousness: without deadheading, there are just too many dead flower stalks mixed in with the living ones, which mars the appearance of the plants. Also, as the season progressed, foliage around the perimeter began to die leaving a ring of yellowed leaves at the base. These two factors contributed to the low scores in September and October which brought the yearly average appearance score down to good, rather than the very good-to-excellent level at which plants began the season. None of these ratings nor the growth were affected by irrigation level, so we recommend irrigation according the WUCOLS Low Category (Figures 12a-12b).

Fall Open House participants almost universally complained of the detrimental aspect of the dead flower stalks and that it would need "judicious pruning".

***Vitex agnus-castus* 'PIIVAC-I' – Delta Blues™ chaste tree** **Final W x H: 237cm (93" – 7'9") x 197 cm (78"- 6'5")**

Delta Blues chaste tree was the star of the 2018 trial year: a crowd favorite at the open houses and with staff. Open house participants were universally enthusiastic about this smaller version of the chaste tree with remarks including "would buy", "spectacular specimen", and "WOW!" It was the plant most people said they would use or recommend to clients with the space for it. This large, informally shaped shrub began blooming in June and was smothered in large purple panicles by July (Figure 30a). It continued to bloom lightly through the rest of summer with a final surge of bloom in October. Plants were untouched by disease and displayed only minor insect damage later in the season which did not affect overall appearance ratings that ranged from very good to WOW (excellent) throughout the season on all irrigation levels (Table 19a). There were no growth differences between treatments, with those on the Low irrigation level having a slightly, if insignificantly, higher overall appearance rating than the other treatments (Figures 13a-13b). This is definitely an excellent large flowering shrub for the Low water landscape, and like other *Vitex*, could be pruned early on to shape into a small tree as well.

***Westringia fruticosa* 'NFL25' Mundi low coast rosemary** **Final W x H: 81cm (32") x 25.5 cm (10")**

Mundi is a groundcover version of coast rosemary that got off to a slow start in our trial but filled out for generally good appearance by May. For the rest of the season it continued to improve to and became quite a good-looking foliage plant that would be useful in the front of a border or anywhere a low green covering was needed (Figures 31b). People at the open houses universally loved this plant. It was admired for the clean foliage, nice dense form, and versatility in landscape design. "Lovely texture," "exciting groundcover option," "fantastic foliage, "neat and cute" and "would buy" were among the praises for this tidy version of *Westringia fruticosa.* Foliage was unbothered by pests or disease and maintained a healthy, dark green appearance that staff consistently rated high. There were no significant differences between treatments for any categories (Table 20a). Although plants on the Low treatment had a slower relative growth rate than the other two treatments, this difference was not statistically significant, and we recommend irrigation at the WUCOLS Low category level (Figures 14a-14b).

50% SHADE RESULTS

***Abelia grandiflora* 'Wevol' Bella Donna** **Final W x H: 54cm (21") x 26 cm (10")**

Overall, we feel this cultivar of *Abelia* never reached its full potential in our trials, though several individuals did reach acceptable overall appearance ratings. While Bella Donna does have nicely scented flowers, the unique selling point for this species is the attractive foliage variegation, with green leaves fringed with a warm white or light green margin. Staff and open house participants appreciated the graceful form and nice variegation balance of this cultivar. As one participant remarked, "When it is happy it is great!" The main reservation with this species is its tendency to push out tight clusters of leaves while leaving long patches of bare stems that never seemed to fill in, which, combined with its small delicate leaves, resulted in non-uniform plants.

After consulting with our cooperator in April regarding the sparse habit, trials staff pruned all individuals in an attempt to encourage branching and create a denser canopy. While deficit irrigation treatments were started in April, the reference month for beginning the PGI and RPGI measurements for this cultivar is May because of this pruning (Figures 15a-15b). The individuals on the High-water treatment were significantly larger than the Low treatments in October. For the most part, there were no significant differences either over the season or on a monthly comparison for any of the aesthetic parameters except for October's Overall Appearance rating when the High treatment was rated significantly higher than the Moderate treatment (Table 21a). At the open house events, participants rated Bella Donna in the same range as trials staff (Table 21b). Due to the growth difference among the treatments, trials staff would recommend that this plant be irrigated with at least the Moderate WUCOLS level or even High, though we would not recommend it at all in the growing conditions of this trial.

***Ceanothus griseus* var. *horizontalis* 'MATCEA01' Highlights™ ceanothus** **Final W x H: 305 cm* (120" – 10'*) x 113 cm (45")**

Highlights™ Ceanothus was so vigorous that we had to perform emergency pruning in June as the plants were commingling and encroaching on their neighbors. Although plants were pruned to 1-meter diameter circles, this did not hamper their performance or growth throughout the remainder of the summer and into the fall. There was a scattering of flowers in late March and April in shades reminiscent of worn denim, but the draw of this plant was the rich foliage variegation and vigorous sprawling growth habit (Figure 33b). This was the participants favorite plant at the April Open House and the one most had listed they would recommend. Participants valued the "bright, shiny – almost glowing" "lush foliage," with one individual remarking it was the "find of the trial," though they also remarked "the growth seems quick." As other plants came into their own over the season, Highlights was elbowed out of the favorites spotlight, but participants continued to rate the plant highly, with most scoring the plant 4 or 5 on Overall Appearance at the July and September Open Houses (Table 22b).

Due to pruning the plants in late June, the reference month for beginning the RPGI calculation for this cultivar is July (Figure 16b). At the end of the deficit season, the Low treatment had the largest RPGI though this was not statistically significant, showing that summer water is not critical for this plant's growth or health. Aesthetically the treatments were comparable for the Overall Appearance, Foliage and Vigor ratings (Table 22a). There was a slight decline (from very good to good) in average overall appearance on the Low water treatment beginning in September, but this rating was impacted by two individuals that died in the following month. Since the Low treatment in the shade house was not irrigated over the entire season, this could be the cause of death of these two plants, though the surviving individuals on this treatment were rated between 3 and 5. Despite the mortality on the treatment, trials staff recommend irrigating Highlights™ at the Low level, though providing one irrigation in the late spring and/or mid/late summer could prevent the kind of stress in inland areas that leads to mortality of weaker individual plants.

***Plant width is final 2nd year width after pruning in late June to 1m-wide circle. A much larger width would undoubtedly have been attained without pruning.**

***Illicium parviflorum* 'PIIIP-I' BananAppeal® Final W x H: 37 cm (14") x 34 cm (13")**

Trials staff were excited to learn a new genus and family when we received a request to evaluate this cultivar. *Illicium parviflorum* is in the Schisandraceae and according to the NCRS Plants Database is native to Florida and Georgia. Staff had high hopes for this species as the bright yellow-chartreuse color brightened up our shadehouse enough to elicit many inquiries about the plant during its establishment period. In addition to its bold foliage color, the leaves when crushed reminded some participants of Necco wafers, earning it the sobriquet, Dwarf Anise Tree. Unfortunately, this cultivar did not perform well in the trials during the deficit period, with most individuals on the Low treatment perishing between July and August 2018, with the sole survivor succumbing in September. While all of the plants on the High and Moderate irrigation treatments lived to the end of the deficit period, they merely survived, with only several individuals approaching an acceptable overall appearance rating (Table 23a).

Because of the total mortality, the Low treatment is excluded from comparisons. There was no significant difference in relative growth between the High and Moderate treatments, because from April to October the plants did not grow at all (Figures 17a-17b). Regarding the aesthetic ratings, neither treatment was significantly different from the other for any of the

categories evaluated. During the deficit season, mean and median overall appearance ratings generated from the open house data were mostly below 3 for all treatments at all three events (Table 23b). Due to its humid tropical/subtropical origin, it is the opinion of trials staff that this plant is not well matched to this region's low humidity and the long dry-down period between irrigation events in this trial.

***Lomandra longifolia* 'LM300' Breeze™ Final W x H: 164 cm (65") x 71 cm (28")**

After previously evaluating this plant in the full-sun field, where we noted uneven performance, trials staff were interested to see if the plant would perform better in this region when grown under 50% shade. While in the full sun, plant performance ran the gamut from brilliant to dead; in the 50% shade, plant performance was uniform across the cultivar for all treatments. Breeze™ was well received by Open House participants who praised the "beautiful, green, lush," "vibrant foliage" and how the "full form [and] arching leaves" would add texture to a landscape. Due to these virtues, Breeze™ scored a place at every Open House on the list of plants participants were most likely to recommend to clients. As with all *Lomandra* cultivars we have evaluated in our trials, Breeze™ developed brown forked leaf tips, which caused some participants to adjust their ratings down. In the past, trials staff have listed this as a criticism of these *Lomandra* cultivars, but after further exposure to the genus, we have learned this is not a sign of stress or response to Boron in the irrigation water, but rather the nature of the plant.

There was no significant difference in relative growth rate between the treatments. The plants on the Moderate or 50% of ETo treatment began the irrigation season in April with a significantly higher overall appearance rating than the other two treatments. This significant difference did not carry through to the individual Foliage, Flower, or Vigor categories. Although the significance of the difference disappeared in May, both the trials staff and the Open House participants consistently gave the Moderate treatment a mean OA rating that was higher than the other two treatments. Since Breeze only consistently attained a 4 on the OA rating on the Moderate irrigation level, we recommend this irrigation level for best appearance. Since there was no difference in relative growth rates between treatments, and Breeze™ did perform well at 20% of ETo, it could be expected to perform acceptably at this level as well, though a midsummer soaking might encourage long-term vigor.

Appendix A
DATA TABLES & CHARTS

2018 Open House Ratings Events (Top: spring; bottom: summer)

All photos: Karrie Reid; may be used by permission with photo credit; contact skreid@ucanr.edu.

Table 7a. *Dianella revoluta* 'DR5000' Little Rev™ average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	3.3	3.8	3.4	3.5	3.9	4.0	4.0	3.7
	50	3.3	3.4	3.8	3.7	4.0	3.9	4.1	3.7
	20	3.3	3.6	3.6	3.6	3.9	3.9	3.7	3.6
Foliage	80	3.3	3.8	3.5	3.6	3.8	4.4	4.1[a]	3.8
	50	3.3	3.5	3.9	3.6	3.9	4.4	4.1[a]	3.8
	20	3.3	3.6	3.6	3.4	4.0	4.1	3.6[b]	3.7
Flower	80			1.0	1.0				1.0
	50		1.0	1.0					1.0
	20		1.3	1.0	1.0				1.1
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	4.9	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	4.9	5.0	5.0	5.0
Disease Resistance	80	5.0	4.9	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	4.9	4.8	5.0	5.0	4.9
	20	5.0	4.7	5.0	5.0	4.9	5.0	5.0	4.9
Vigor	80	4.1	4.5	4.9	4.5	4.8	4.8	4.6	4.6
	50	4.4	4.4	4.6	4.9	4.8	4.8	4.4	4.6
	20	4.1	4.3	4.3	4.6	4.3	5.0	4.4	4.4

Ratings with different superscripts are significantly different using ANOVA and Tukey's Post-Hoc, p≤ .05.

Table 7b. Open House participant ratings for *Dianella revoluta* 'DR5000' Little Rev™ on 3 ETo -based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	5	5	4	5	5	5	5	5
	Mean	3.3	3.3	3.5	3.5	3.2	3.6	3.5	3.7	3.6
	Median	3	3	4	4	3	4	4	4	4
	Min	2	2	2	2	1	2	2	2	2
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	3.3	3.3	3.5	3.7	3.4	3.8	3.5	3.7	3.7
	Median	3	3	3	4	3	4	4	4	4
	Min	2	2	2	2	2	2	2	2	2
Floral Display	Max	0	0	4	1	0	2	5	5	2
	Mean	0.0	0.0	1.3	0.1	0.0	0.1	0.1	0.1	0.1
	Median	0	0	1	0	0	0	0	0	0
	Min	0	0	0	0	0	0	0	0	0

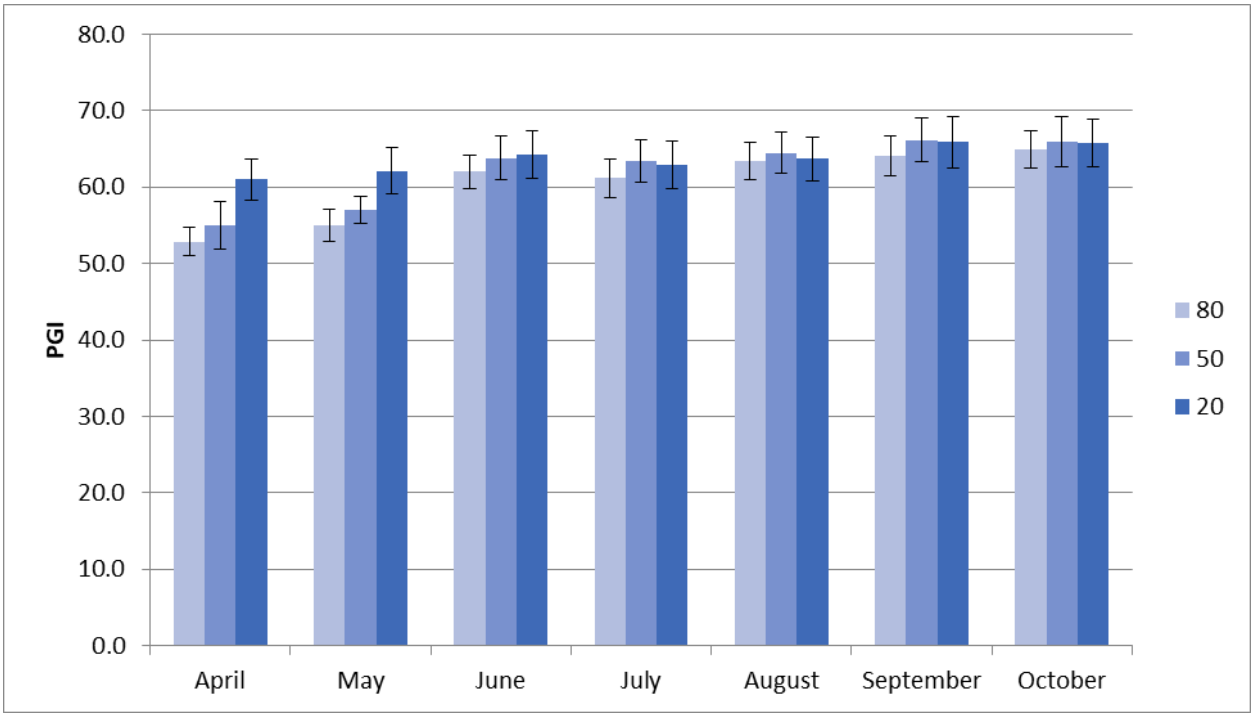

Figure 1a. *Dianella revoluta* 'DR5000' Little Rev™ average monthly plant growth index on 3 ETo -based irrigation treatments in 2018. Bars represent ±1 SE.

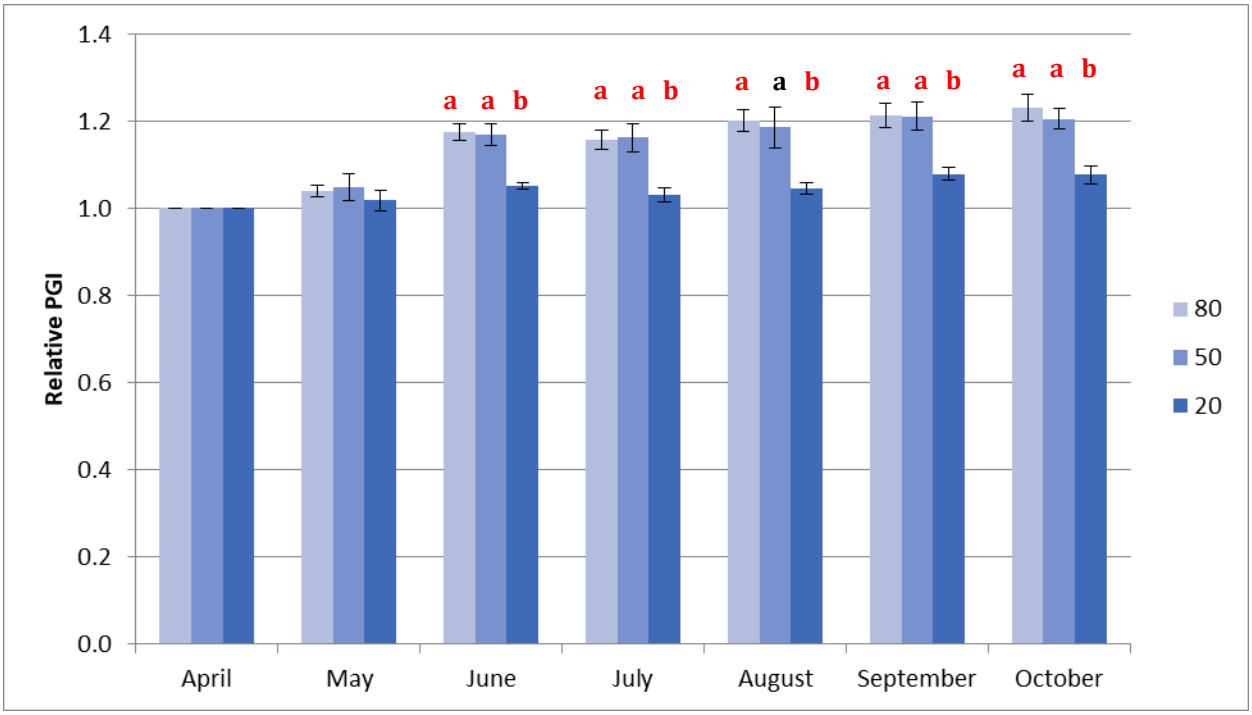

Figure 1b. *Dianella revoluta* 'DR5000' Little Rev™ average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. Bars with different letters represent significant difference using ANOVA and Tukey's Post-hoc at p≤ 0.05 (in black) or p≤0.01(in red).

Table 8a. *Dietes bicolor* 'African Gold' - Pure Gold Dietes™ average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	3.3	3.9	4.4	4.6	4.6	4.4	4.5	4.2
	50	3.6	4.1	4.5	4.6	4.6	4.4	3.9	4.2
	20	3.6	4.1	4.4	4.5	4.1	4.0	3.8	4.1
Foliage	80	3.4	4.0	4.1	3.8[ab]	3.9	4.0	3.9	3.9
	50	3.5	4.3	4.4	4.1[a]	4.4	3.9	3.8	4.0
	20	3.5	4.1	4.1	3.4[b]	3.8	3.9	3.4	3.7
Flower	80		1.0	2.4	2.8	2.3	1.9	1.7	2.0
	50		1.1	2.9	3.0	3.0	2.0	1.4	2.2
	20		1.3	3.3	2.9	2.5	1.5	1.3	2.1
Pest Resistance	80	4.6	5.0	4.9	5.0	5.0	5.0	5.0	4.9
	50	4.3	5.0	5.0	5.0	5.0	5.0	5.0	4.9
	20	4.4	5.0	5.0	5.0	5.0	5.0	5.0	4.9
Disease Resistance	80	4.6	4.5	4.9	4.0	4.4	4.5	4.9	4.5
	50	4.9	4.8	4.8	4.6	4.6	4.5	4.5	4.7
	20	4.9	4.8	4.8	4.4	4.3	4.4	4.5	4.6
Vigor	80	4.3	4.8	4.8	4.8	4.8	4.9	5.0	4.7
	50	4.5	4.9	4.9	4.9	4.6	4.8	4.5	4.7
	20	4.5	4.9	5.0	4.8	4.4	4.6	4.4	4.6

Ratings with different superscripts are significantly different using ANOVA and Tukey's Post-Hoc, p≤ .01.

Table 8b. Open House participant ratings for *Dietes bicolor* 'African Gold' on 3 ETo -based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	**80**	**50**	**20**	**80**	**50**	**20**	**80**	**50**	**20**
Overall Appearance	Max	5	5	5	5	5	5	5	5	5
	Mean	3.8	3.7	4.0	3.9	4.1	4.1	3.5	3.5	3.9
	Median	4	4	4	4	4	4	4	3	4
	Min	2	2	2	3	2	3	2	2	2
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	3.9	3.9	4.1	4.0	3.9	4.4	3.6	3.6	4.0
	Median	4	4	4	4	4	4	4	4	4
	Min	2	2	3	2	2	4	2	2	2
Floral Display	Max	2	2	3	5	5	5	5	5	5
	Mean	0.1	0.2	0.3	3.2	3.7	2.9	1.8	2.0	1.8
	Median	0	0	0	3	4	3	2	2	1
	Min	0	0	0	1	1	1	0	0	0

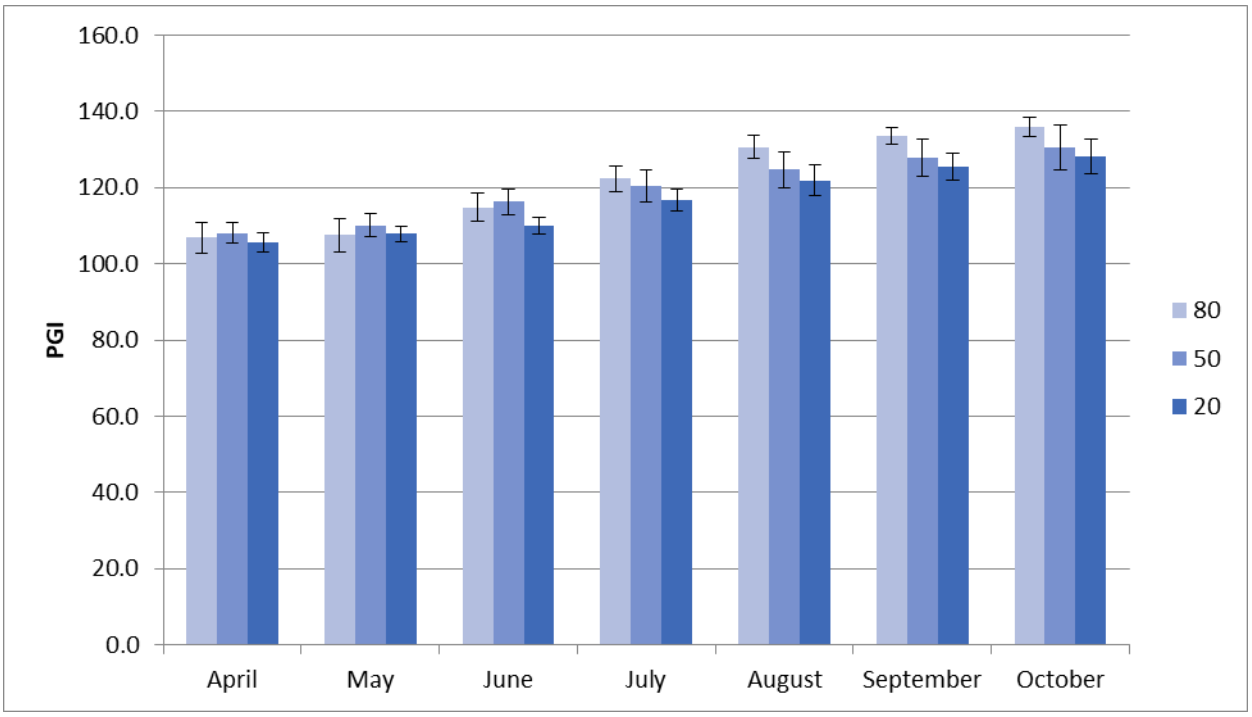

Figure 2a. *Dietes bicolor* 'African Gold' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE.

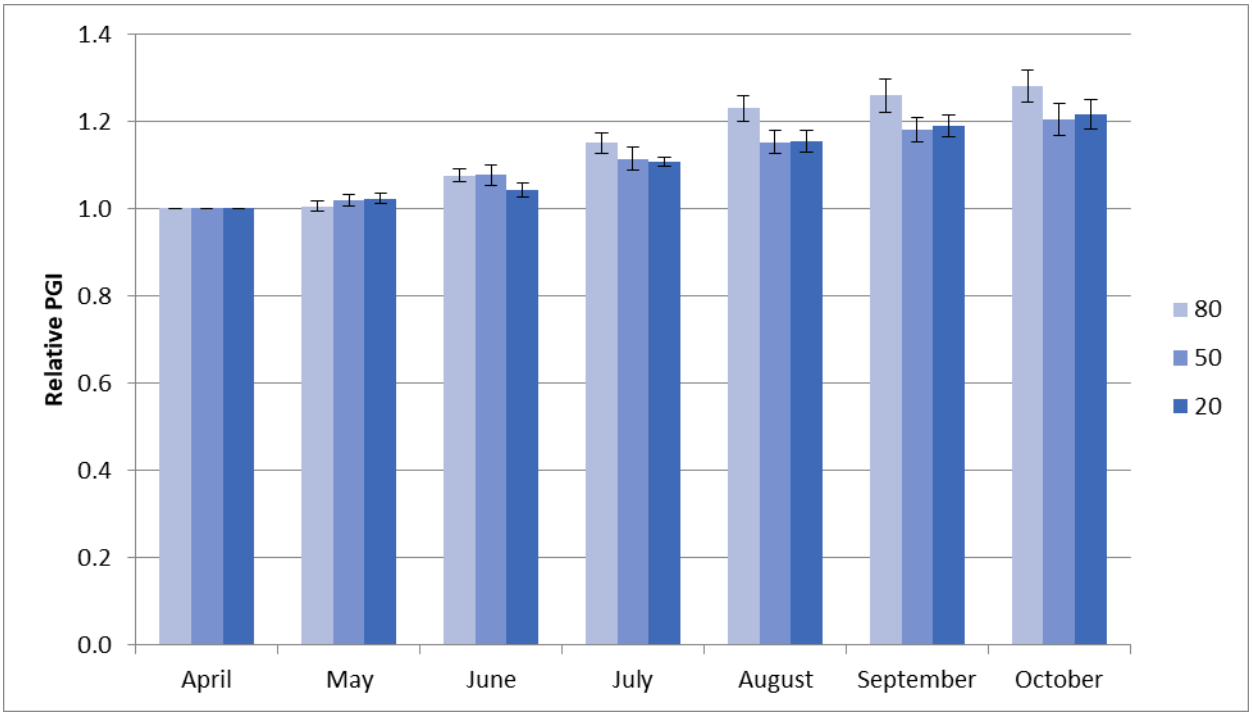

Figure 2b. *Dietes bicolor* 'African Gold' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 9a. *Distylium* 'Vintage Jade' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	2.8	2.1	1.9	1.9	1.9	1.9	1.8	2.0[b]
	50	3.0	2.8	2.3	2.0	2.0	2.0	2.0	2.3[a]
	20	2.7	2.3	1.9	1.8	1.9	1.8	1.8	2.0[b]
Foliage	80	2.8	2.1	2.0	1.9	1.9	2.0	1.8	2.1[ab]
	50	3.0	2.6	2.3	2.1	2.0	2.0	2.0	2.3[a]
	20	2.7	2.3	1.9	1.8	1.9	1.8	1.8	2.0[b]
Flower	80			2.0					2.0
	50								
	20								
Pest Resistance	80	5.0	5.0	5.0	4.9	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	4.9	5.0	5.0	4.9	5.0
	20	5.0	5.0	5.0	4.9	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	4.9	5.0	5.0	5.1	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	4.8	5.0	4.8	5.0	5.0	5.0	4.9
Vigor	80	3.4	3.1	2.8	2.3	2.5	2.4	1.9	2.6
	50	3.5	3.6	3.4	2.6	2.5	2.9	2.4	3.0
	20	3.1	3.0	2.6	2.1	2.7	2.5	2.1	2.6

Ratings with different superscripts are significantly different using ANOVA and Tukey's Post-Hoc, p≤ .05.

Table 9b. Open House participant ratings for *Distylium* Vintage Jade' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	**80**	**50**	**20**	**80**	**50**	**20**	**80**	**50**	**20**
Overall Appearance	Max	5	5	5	5	5	4	5	5	4
	Mean	3.8	3.7	3.0	3.4	3.0	2.4	3.5	3.9	2.6
	Median	4	4	3	3	3	2	4	4	3
	Min	2	2	1	2	1	1	2	3	1
Foliage Quality	Max	5	5	5	5	5	4	5	5	4
	Mean	4.0	3.9	3.1	3.4	3.2	2.5	3.6	4.1	2.6
	Median	4	4	3	4	3	3	4	4	3
	Min	2	3	2	2	1	1	2	2	1
Floral Display	Max	2	2	3	2	4	0	3	3	1
	Mean	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.1	0.0
	Median	0	0	0	0	0	0	0	0	0
	Min	0	0	0	0	0	0	0	0	0

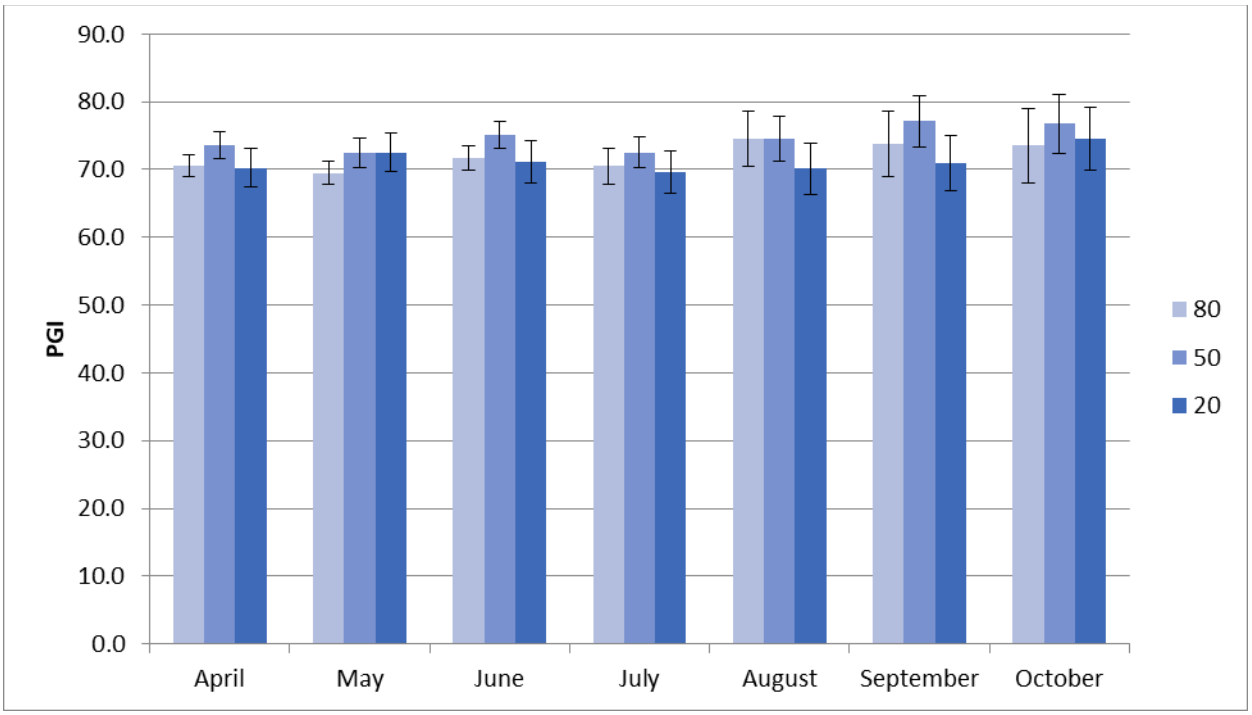

Figure 3a. *Distylium* 'Vintage Jade' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

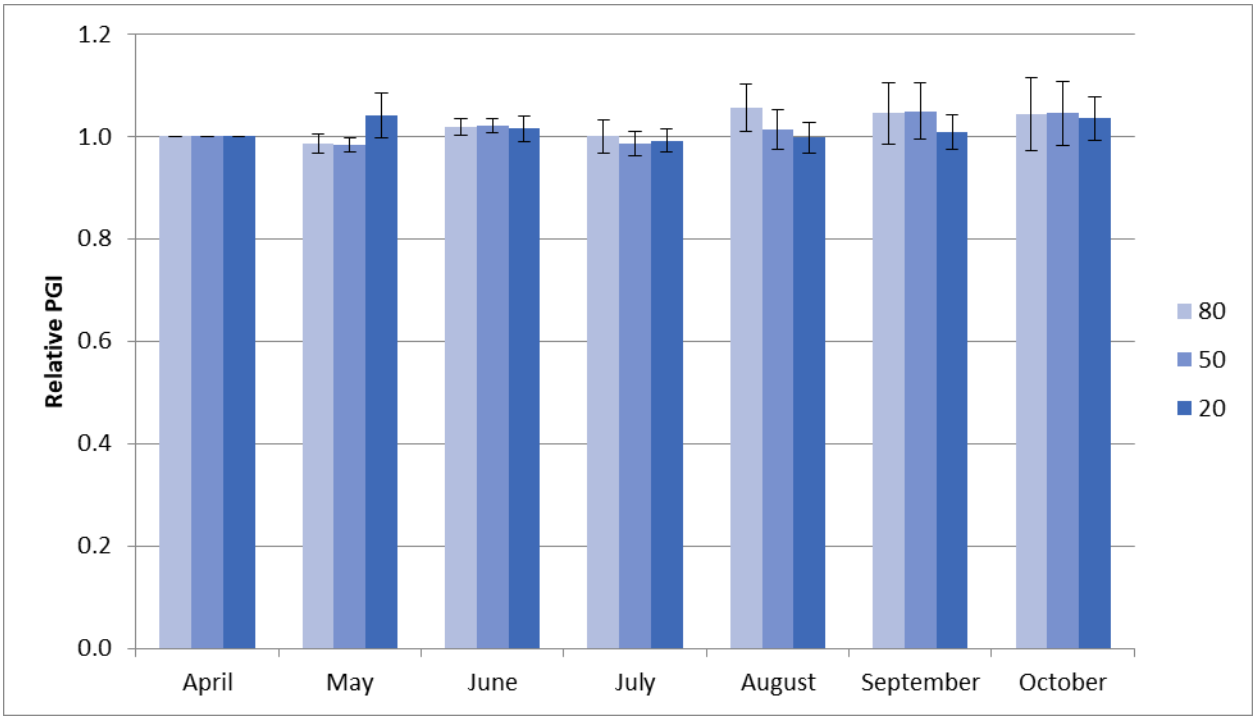

Figure 3b. *Distylium* 'Vintage Jade' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 10a. *Lagerstroemia indica* 'Deleb' average monthly quality ratings (scale of 1-5) on 3 ET_0-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	4.0	4.0	4.0	4.1	4.8	4.6	4.1	4.2
	50	3.6	4.1	4.0	4.1	4.8	4.6	4.3	4.2
	20	3.7	4.0	3.7	4.2	4.6	4.4	4.0	4.1
Foliage	80	4.9	5.0	5.0	5.0	5.0	4.9	5.0	5.0
	50	4.6	5.0	5.0	5.0	5.0	5.0	5.0	4.9
	20	4.9	5.0	4.6	5.0	5.0	4.7	4.7	4.8
Flower	80		5.0		1.0[b]	2.8	2.6	1.0	2.5
	50				1.0[b]	4.3	3.3	1.1	2.4
	20			3.0	2.0[a]	3.6	2.7	1.0	2.5
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	4.9	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	4.6	5.0	5.0	5.0	5.0	4.9
Vigor	80	4.9	5.0	5.0	5.0	5.0	4.6	3.6	4.7
	50	4.3	4.9	5.0	4.9	4.6	4.6	3.6	4.5
	20	4.1	5.0	5.0	4.9	4.4	4.6	3.7	4.5

Ratings with different superscripts are significantly different using ANOVA and Tukey's Post-Hoc, p≤ .01.

Table 10b. Open House participant ratings for *Lagerstroemia indica* 'Deleb' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	**80**	**50**	**20**	**80**	**50**	**20**	**80**	**50**	**20**
Overall Appearance	Max	5	5	5	5	5	5	5	5	5
	Mean	3.8	3.5	3.9	3.8	3.9	4.1	4.3	3.4	4.0
	Median	4	3	4	4	4	4	4	3	4
	Min	2	2	3	1	3	3	3	2	2
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	4.0	3.8	4.2	4.4	4.2	4.6	4.3	3.7	4.2
	Median	4	4	4	5	4	5	4	4	4
	Min	2	2	2	1	2	4	3	2	2
Floral Display	Max	2	1	0	0	5	4	5	5	5
	Mean	0.0	0.0	0.0	0.0	1.7	1.2	3.4	2.4	2.9
	Median	0	0	0	0	1	1	4	2	3
	Min	0	0	0	0	0	0	0	0	0

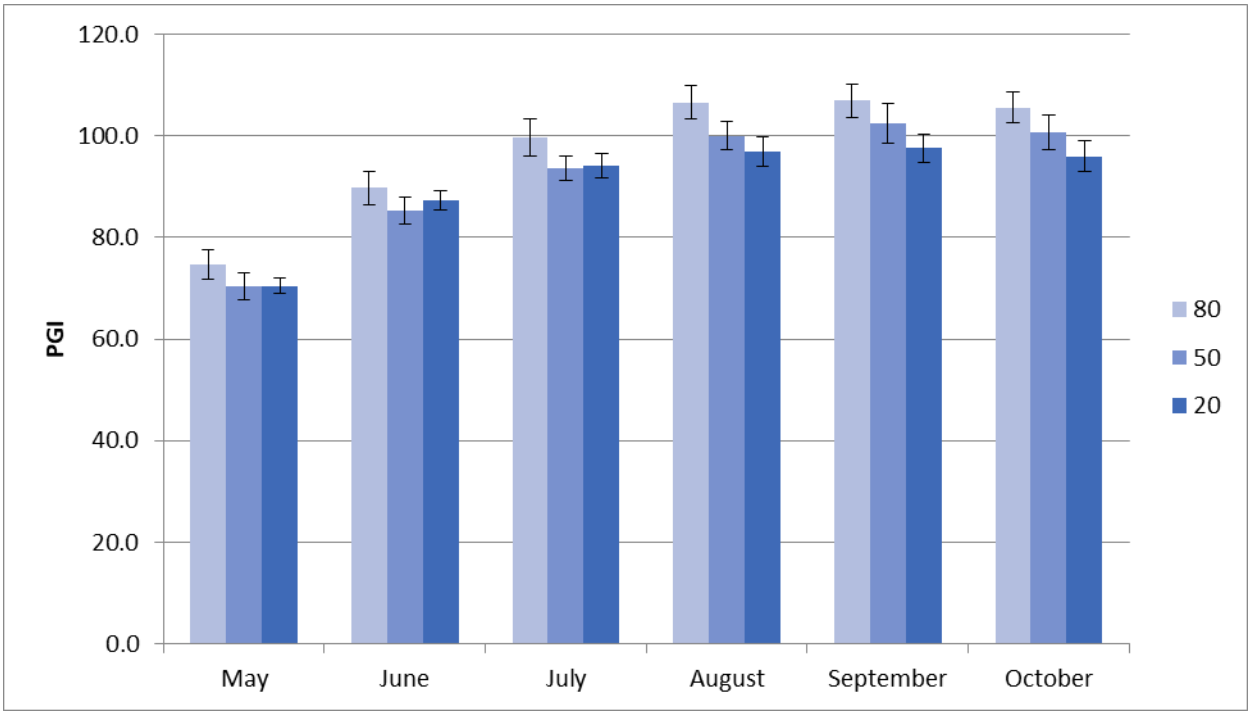

Figure 4a. *Lagerstroemia indica* 'Deleb' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

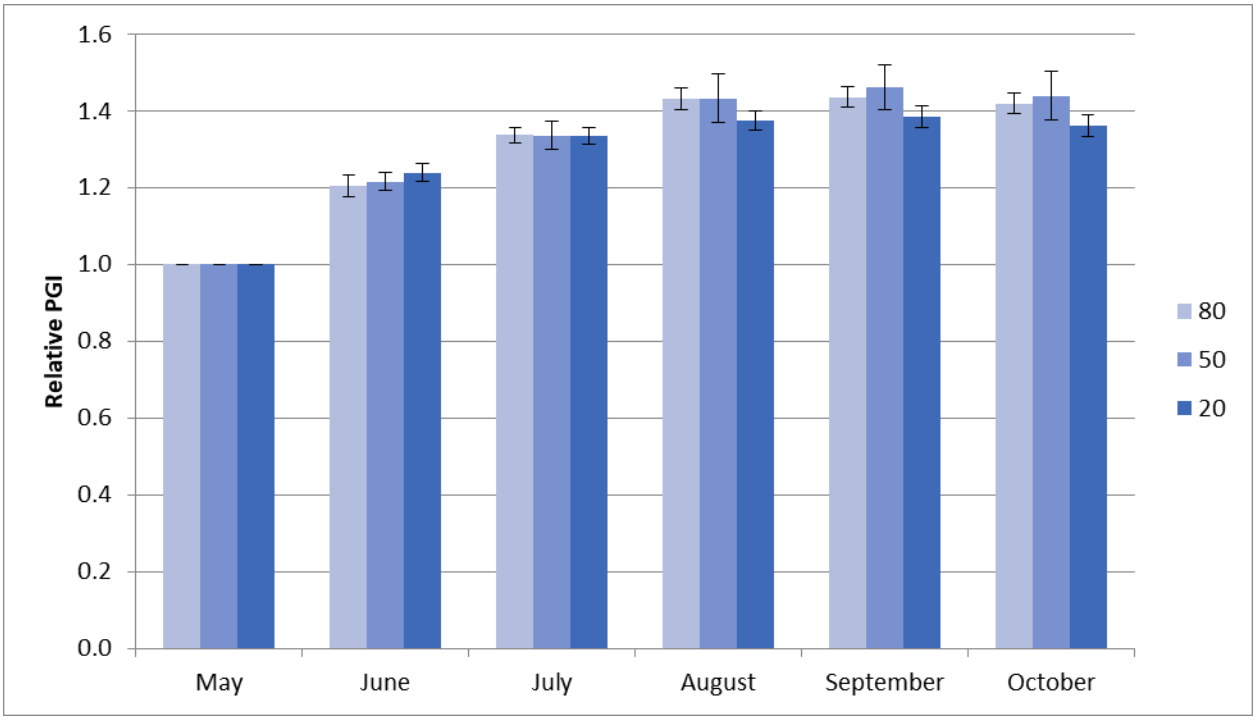

Figure 4b. *Lagerstroemia indica* 'Deleb' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 11a. *Lagerstroemia* 'Purple Magic' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	3.6	3.9	4.1	4.9	4.9	4.1	3.3	4.1
	50	3.9	3.9	4.0	4.8	4.9	4.1	3.4	4.1
	20	3.4	4.0	4.0	4.8	4.8	4.3	3.4	4.1
Foliage	80	4.7	5.0	5.0	5.0	5.0	4.6	4.3	4.8
	50	4.9	5.0	5.0	5.0	4.9	4.3	4.0	4.7
	20	5.0	4.9	5.0	5.0	5.0	4.8	4.4	4.9
Flower	80			3.0	4.3	4.7	2.6	1.2	3.2
	50				3.9	4.4	2.7	1.3	3.1
	20				4.3	4.0	2.9	1.5	3.2
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	4.6	5.0	4.9
	50	5.0	5.0	5.0	5.0	5.0	4.7	5.0	5.0
	20	5.0	4.9	5.0	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vigor	80	4.0	4.9	5.0	4.7	4.3	4.3	3.3	4.3
	50	4.4	4.6	4.9	4.7	4.1	3.9	3.4	4.3
	20	3.8	4.9	4.8	4.6	3.6	4.0	3.1	4.1

Table 11b. Open House participant ratings for *Lagerstroemia* 'Purple Magic' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	5	5	5	5	5	5	5	5
	Mean	4.2	3.8	3.9	3.7	4.2	4.0	3.4	3.4	3.4
	Median	4	4	4	4	4	4	3	3	3
	Min	2	2	2	2	2	2	2	2	2
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	4.5	4.2	4.1	4.3	4.4	4.4	3.7	3.7	3.9
	Median	5	4	4	4	5	5	4	4	4
	Min	2	3	3	3	2	3	1	2	2
Floral Display	Max	4	0	1	5	5	5	5	5	5
	Mean	0.1	0.0	0.0	3.2	4.0	3.4	1.6	2.3	1.5
	Median	0	0	0	3	4	4	1	2	1
	Min	0	0	0	1	1	1	0	0	0

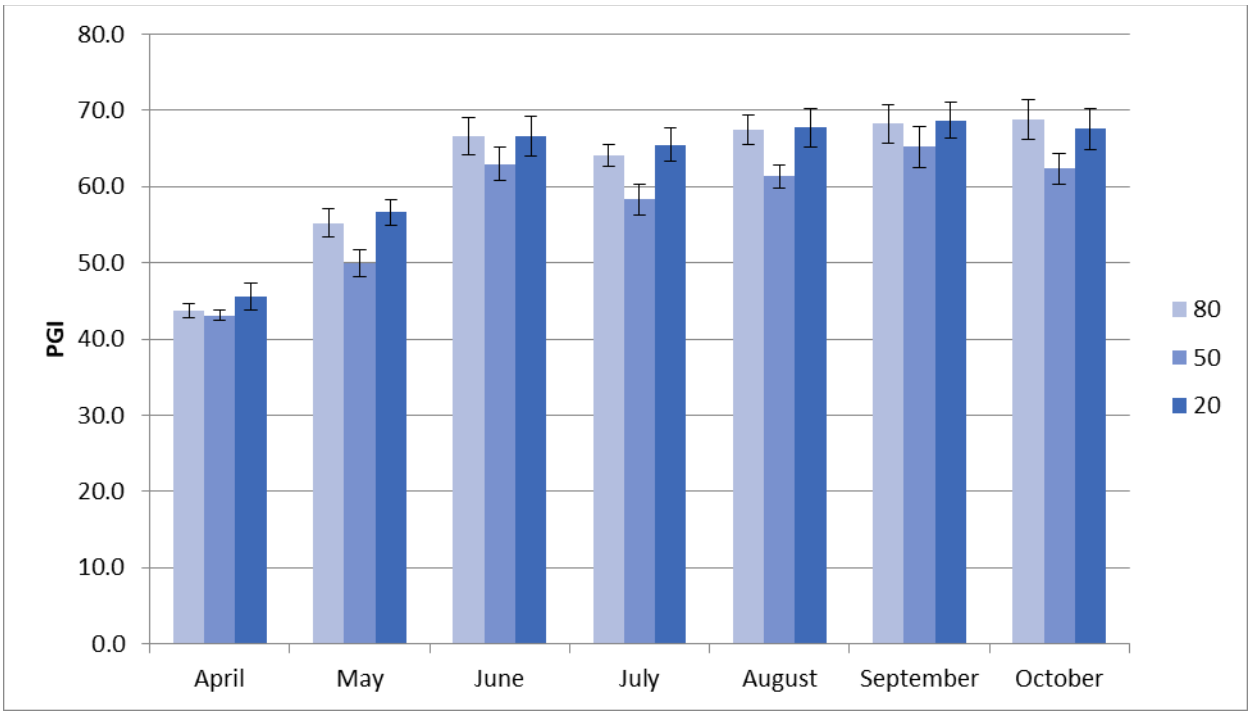

Figure 5a. *Lagerstroemia* 'Purple Magic' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE.

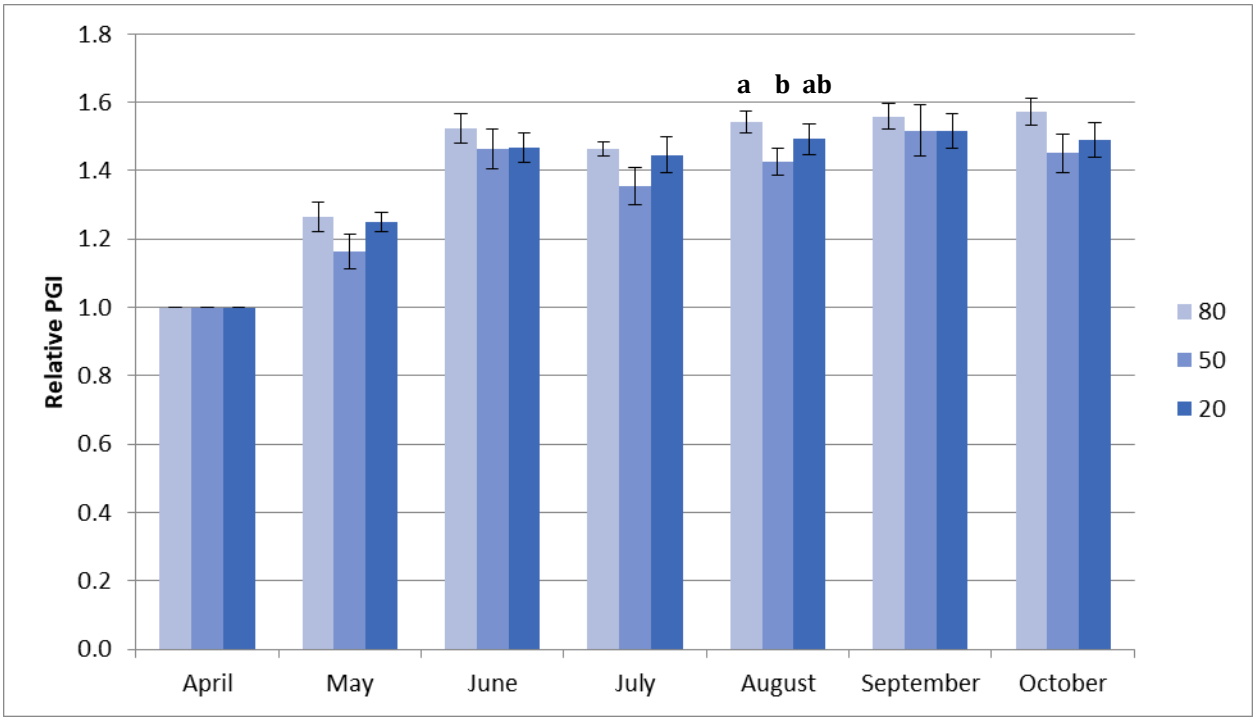

Figure 5b. *Lagerstroemia* 'Purple Magic' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. Bars with different letters represent significant difference using ANOVA and Tukey's Post-hoc at p≤ 0.05.

Table 12a. *Lomandra fluviatilis* 'ABU7' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	3.1	4.4	3.7	3.8	4.4	4.5	3.9	3.9
	50	3.3	4.3	3.4	3.8	4.0	4.4	4.1	3.9
	20	2.9	4.5	3.3	3.4	4.0	3.9	3.9	3.7
Foliage	80	3.0	4.1	3.6	3.5	4.5	4.0	3.6	3.8
	50	3.4	3.8	3.6	3.5	3.9	4.0	3.9	3.7
	20	3.0	4.0	3.6	3.3	3.8	3.5	3.6	3.5
Flower	80	2.1	4.6	4.0	3.8	4.1	3.1	2.6	3.5
	50	2.3	4.0	4.4	3.6	3.4	3.1	2.4	3.3
	20	1.9	4.8	4.3	4.3	3.9	3.4	2.8	3.6
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vigor	80	4.3	4.5	4.1	4.3	4.5	4.5	4.3	4.3
	50	3.9	4.3	4.3	4.5	4.3	4.8	4.4	4.3
	20	4.0	4.4	4.1	4.3	4.4	4.4	3.9	4.2

Table 12b. Open House participant ratings for *Lomandra fluviatilis* 'ABU7' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	3.1	4.4	3.7	3.8	4.4	4.5	3.9	3.9	3.1
	Mean	3.3	4.3	3.4	3.8	4.0	4.4	4.1	3.9	3.3
	Median	2.9	4.5	3.3	3.4	4.0	3.9	3.9	3.7	2.9
	Min	3.0	4.1	3.6	3.5	4.5	4.0	3.6	3.8	3.0
Foliage Quality	Max	3.4	3.8	3.6	3.5	3.9	4.0	3.9	3.7	3.4
	Mean	3.0	4.0	3.6	3.3	3.8	3.5	3.6	3.5	3.0
	Median	2.1	4.6	4.0	3.8	4.1	3.1	2.6	3.5	2.1
	Min	2.3	4.0	4.4	3.6	3.4	3.1	2.4	3.3	2.3
Floral Display	Max	1.9	4.8	4.3	4.3	3.9	3.4	2.8	3.6	1.9
	Mean	3.1	4.4	3.7	3.8	4.4	4.5	3.9	3.9	3.1
	Median	3.3	4.3	3.4	3.8	4.0	4.4	4.1	3.9	3.3
	Min	2.9	4.5	3.3	3.4	4.0	3.9	3.9	3.7	2.9

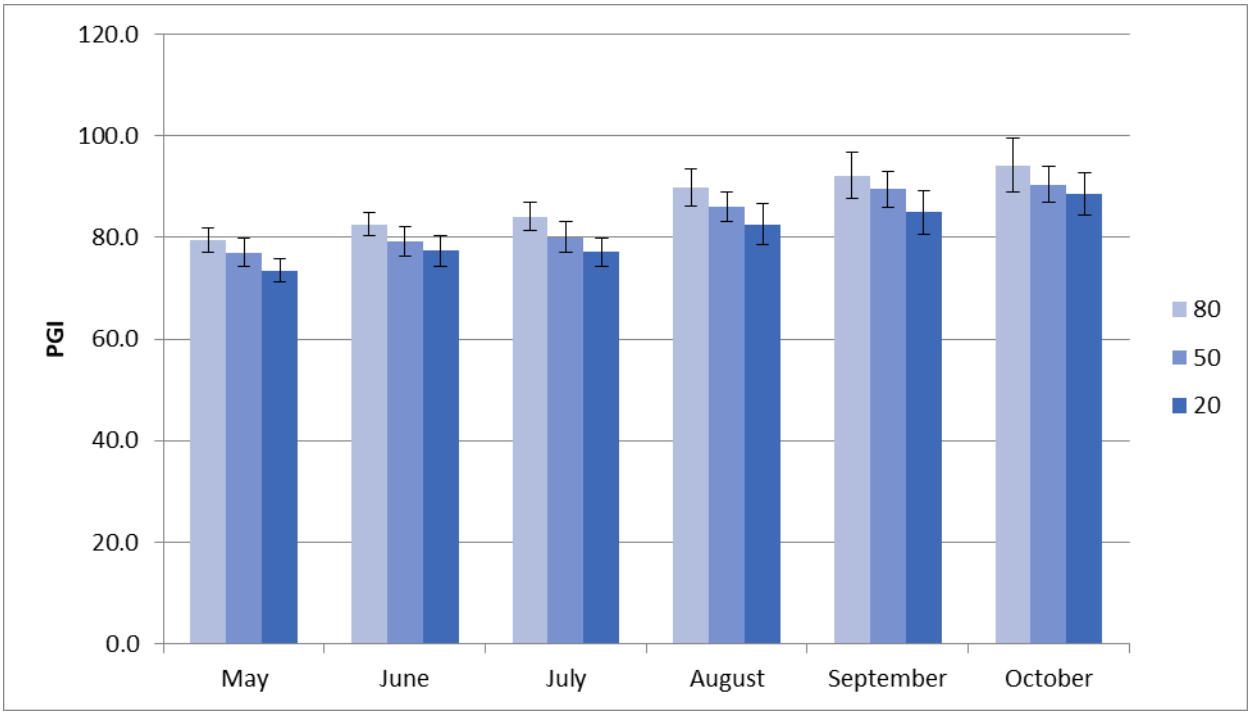

Figure 6a. *Lomandra fluviatilis* 'ABU7' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

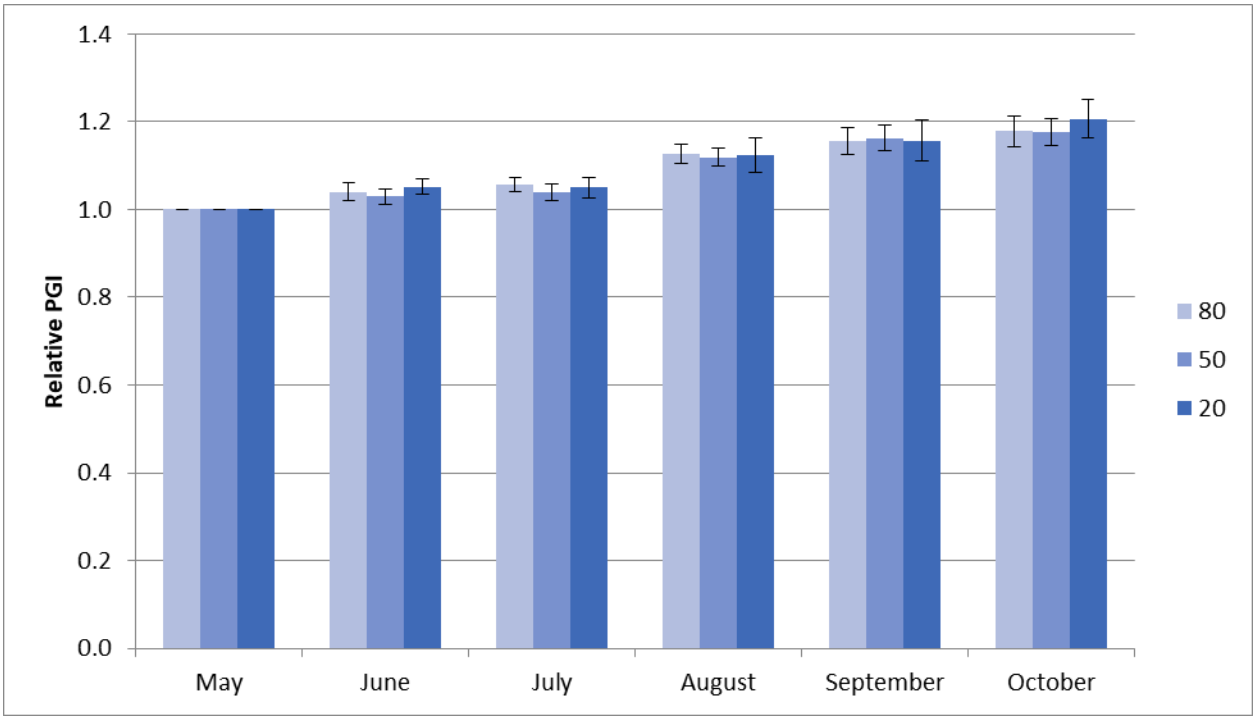

Figure 6b. *Lomandra fluviatilis* 'ABU7' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 13a. *Nandina domestica* 'Sunset Boulevard' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	3.3	2.6	2.3	2.3	2.1	2.5	2.4	2.5
	50	2.6	2.6	2.6	2.0	2.0	2.3	3.1	2.5
	20	3.1	3.1	2.5	1.8	1.6	1.9	2.0	2.3
Foliage	80	3.3	3.0	2.3	2.3	2.1	2.5	2.5	2.6
	50	2.9	2.8	2.8	2.0	2.0	2.1	2.9	2.5
	20	3.4	3.1	2.6	1.8	1.6	1.9	2.1	2.4
Flower	80								
	50								
	20								
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	3.8	4.3	5.0	4.1	3.5[a]	4.4	4.3
	50	5.0	3.1	4.1	5.0	3.5	3.5[a]	4.1	4.1
	20	5.0	3.8	4.1	5.0	4.0	2.5[b]	3.5	4.0
Vigor	80	3.0	2.6	2.5	2.4	2.3	2.9	2.5	2.6
	50	2.6	2.9	3.1	2.1	2.1	2.3	3.3	2.6
	20	3.1	3.1	2.9	2.0	1.8	2.1	2.4	2.5

Ratings with different superscripts are significantly different using ANOVA and Tukey's Post-Hoc, p≤ .05.

Table 13b. Open House participant ratings for *Nandina domestica* 'Sunset Boulevard' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	**80**	**50**	**20**	**80**	**50**	**20**	**80**	**50**	**20**
Overall Appearance	Max	5	5	5	4	4	3	5	5	4
	Mean	2.5	3.4	2.8	2.5	2.9	2.0	3.5	3.2	2.6
	Median	3	4	3	3	3	2	3	3	3
	Min	1	1	1	1	1	1	2	2	1
Foliage Quality	Max	5	5	5	4	5	3	5	5	5
	Mean	2.6	3.7	3.2	2.7	2.9	2.1	3.8	3.3	2.7
	Median	3	4	3	3	3	2	4	3	3
	Min	1	2	2	1	1	1	1	2	1
Floral Display	Max	0	0	1	1	3	0	5	1	1
	Mean	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
	Median	0	0	0	0	0	0	0	0	0
	Min	0	0	0	0	0	0	0	0	0

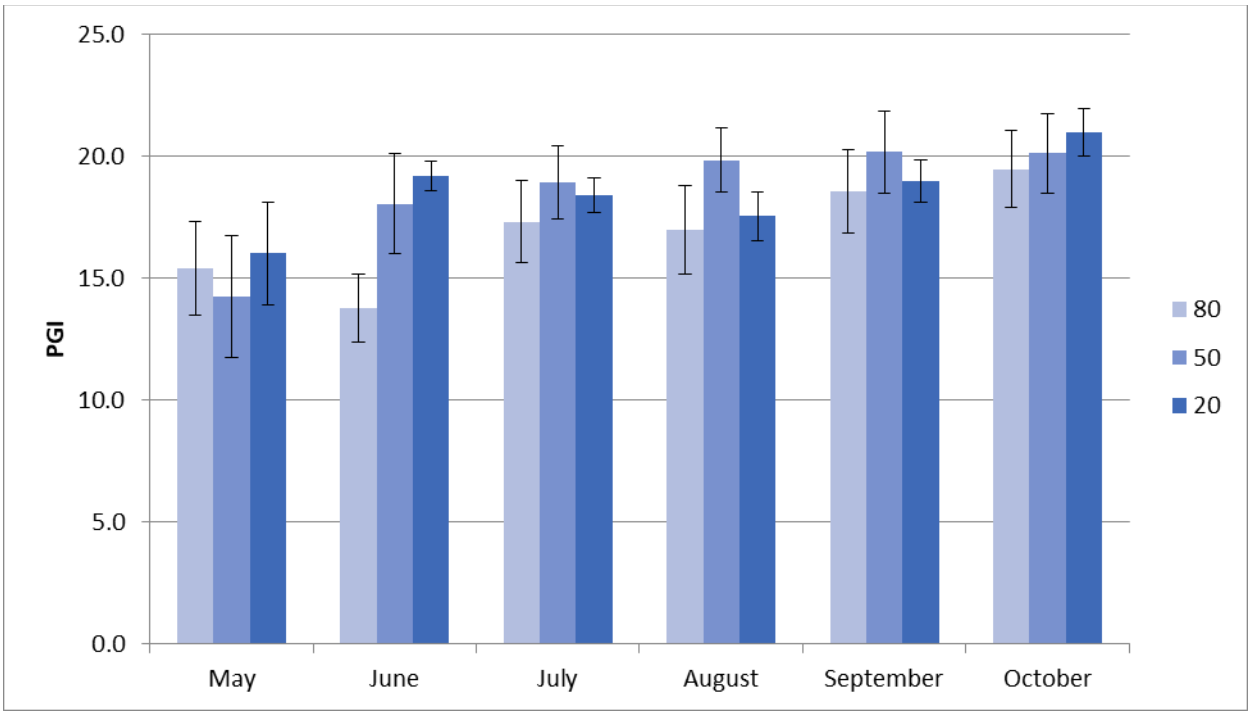

Figure 7a. *Nandina domestica* 'Sunset Boulevard' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

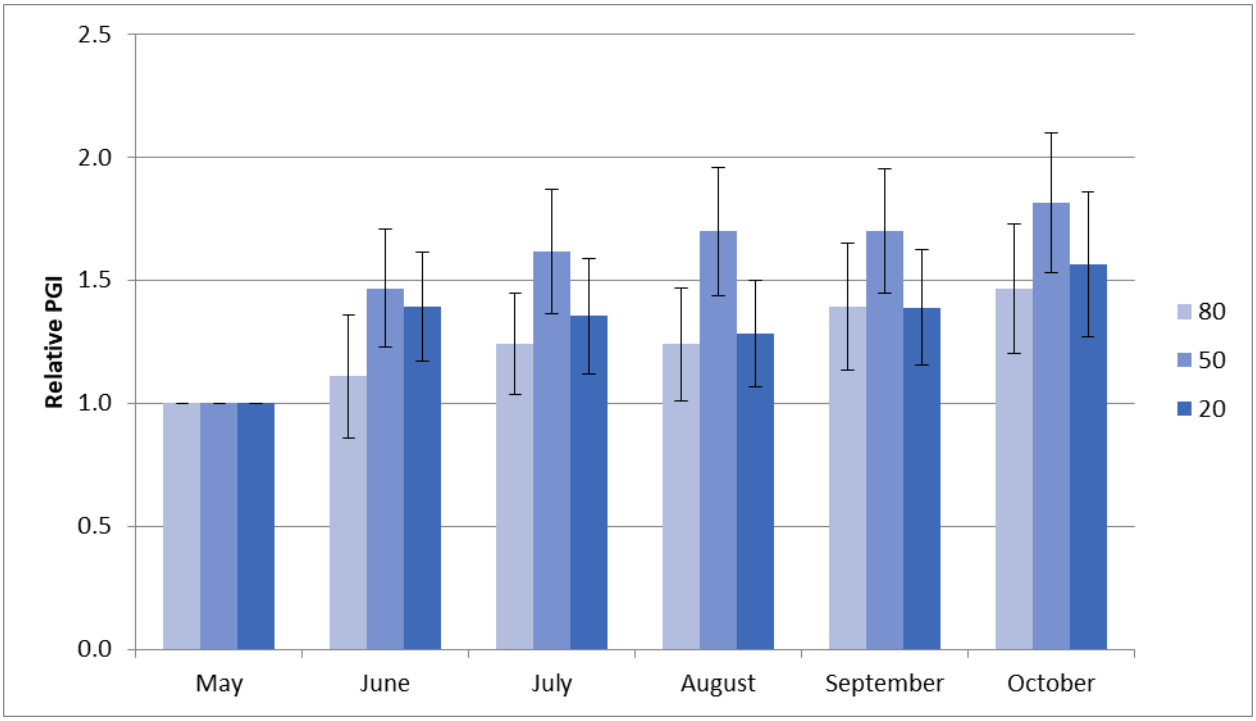

Figure 7b. *Nandina domestica* 'Sunset Boulevard' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 14a. *Rosa* 'KORbatam' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	4.0	4.0	3.3	3.1	3.1	3.3	2.6	3.3
	50	3.8	3.9	3.2	3.1	3.4	3.3	2.8	3.3
	20	4.0	4.1	3.3	3.2	3.4	3.1	2.7	3.4
Foliage	80	4.0	3.4	3.4	3.1	3.3	2.9	2.3	3.2
	50	4.0	3.4	3.3	3.4	3.4	3.0	2.5	3.3
	20	4.1	3.4	3.4	3.0	3.0	2.9	2.6	3.2
Flower	80		3.6	1.5	1.1	1.6	1.9	1.5	1.9
	50		3.3	1.8	1.1	1.4	1.8	1.7	1.8
	20		3.4	2.3	1.3	1.9	1.5	1.9	2.0
Pest Resistance	80	4.0	4.0	4.1	3.7	3.9	3.0	2.1	3.6
	50	4.1	4.1	4.0	3.9	3.4	3.5	2.4	3.6
	20	4.1	4.6	3.9	3.7	3.4	3.1	2.4	3.6
Disease Resistance	80	5.0	3.4	3.6	3.3	3.9	4.3	5.0	4.1
	50	4.6	3.6	3.8	3.4	4.0	4.3	5.0	4.1
	20	5.0	3.6	3.6	3.4	4.1	4.4	4.6	4.1
Vigor	80	4.9	4.6	3.7	3.9	4.1	3.9	3.4	4.1
	50	4.4	4.4	4.0	4.0	4.0	4.5	4.0	4.2
	20	4.7	4.4	4.0	4.0	4.0	4.3	3.6	4.1

Table 14b. Open House participant ratings for *Rosa* 'KORbatam' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	**80**	**50**	**20**	**80**	**50**	**20**	**80**	**50**	**20**
Overall Appearance	Max	5	5	5	4	4	5	5	4	5
	Mean	4.3	4.3	4.1	3.3	3.5	3.5	3.1	3.1	3.4
	Median	4	4	4	3	4	4	3	3	3
	Min	3	3	2	2	2	2	1	1	1
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	4.5	4.7	4.4	3.9	4.1	4.2	3.2	3.4	3.5
	Median	5	5	4	4	4	4	3	3	4
	Min	2	3	3	2	2	2	1	1	2
Floral Display	Max	5	5	5	4	4	5	5	5	5
	Mean	3.4	3.1	2.9	1.8	2.3	2.0	1.9	1.3	2.4
	Median	3	3	3	2	2	2	2	1	2
	Min	1	1	1	0	0	0	0	0	0

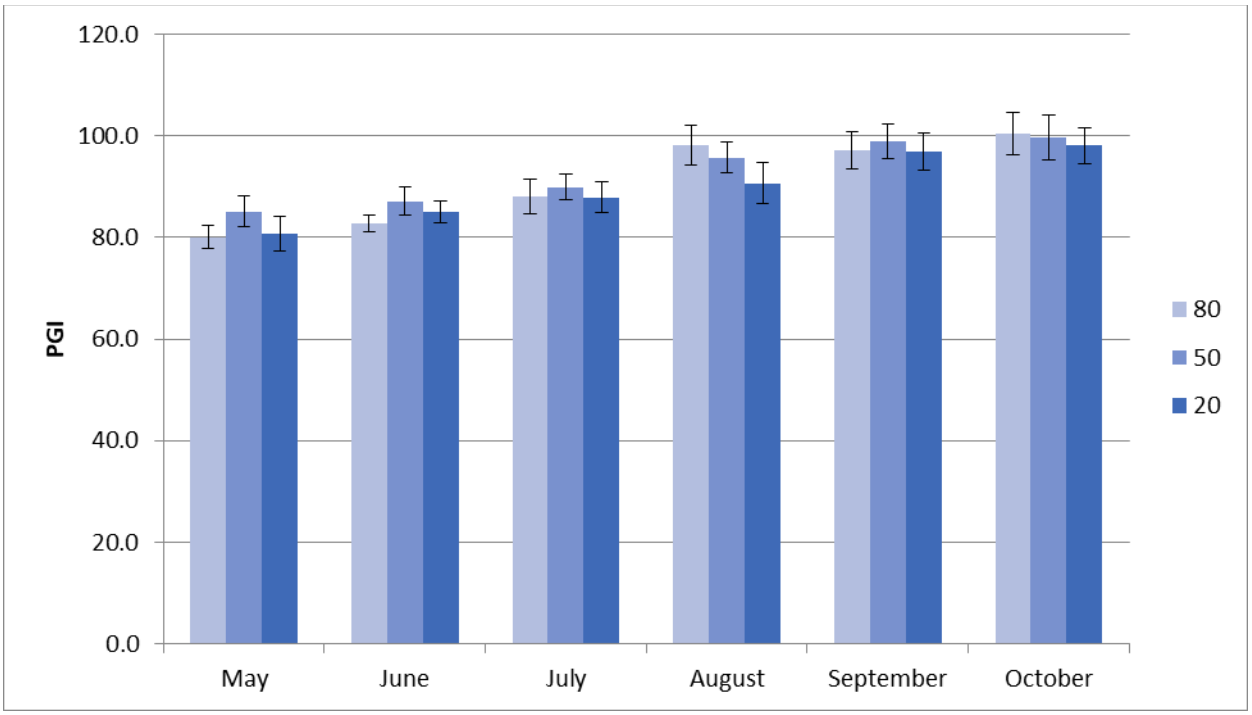

Figure 8a. *Rosa* 'KORbatam' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

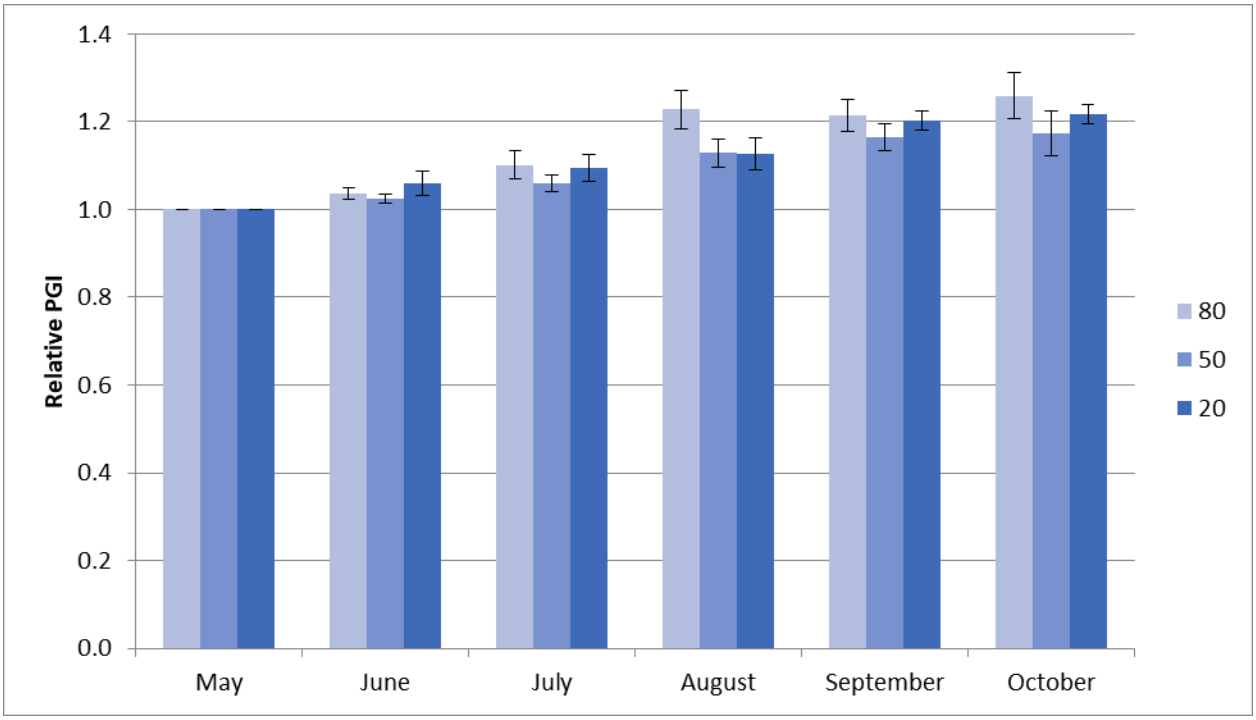

Figure 8b. *Rosa* 'KORbatam' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 15a. *Rosa* 'Meikokan' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	4.0	4.4	4.0	3.9	3.6	3.4	2.4	3.7
	50	3.8	3.9	3.9	4.2	3.4	3.5	2.9	3.6
	20	3.8	3.8	3.4	3.9	3.1	3.4	2.9	3.5
Foliage	80	3.3	3.0	3.4	3.4	3.6	3.0	2.3	3.1
	50	3.5	3.3	3.3	3.6	3.6	3.1	2.5	3.3
	20	3.4	3.3	3.1	3.3	3.0	3.4	2.6	3.2
Flower	80		4.1	3.3	2.0[b]	1.6	2.0	1.0	2.3
	50		3.7	3.6	2.6[ab]	1.4	2.4	1.1	2.5
	20		4.1	3.5	3.7[a]	1.3	2.7	1.6	2.8
Pest Resistance	80	3.3	4.5	4.0	4.4	3.9	3.4	2.5	3.7
	50	3.5	4.3	4.1	4.1	3.5	3.1	2.8	3.6
	20	3.5	4.3	4.3	4.1	3.3	3.6	3.0	3.7
Disease Resistance	80	5.0	3.5	3.5	3.5	4.0	4.3	4.3	4.0
	50	4.9	3.3	3.4	3.8	4.1	4.6	4.6	4.1
	20	5.0	3.1	3.5	3.6	3.5	4.4	4.5	3.9
Vigor	80	4.8	5.0	4.8	5.0	3.6	4.1	3.4	4.4
	50	4.5	4.7	4.9	4.5	4.4	4.3	3.6	4.4
	20	4.9	5.0	4.6	4.4	4.4	4.5	3.4	4.4

Ratings with different superscripts are significantly different using ANOVA and Tukey's Post-Hoc, p≤ .05.

Table 15b. Open House participant ratings for *Rosa* 'Meikokan' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	5	5	5	5	5	5	5	5
	Mean	3.6	3.8	3.8	4.3	3.7	4.4	3.5	3.2	3.7
	Median	4	4	4	4	4	4	3	3	4
	Min	2	2	2	3	3	3	1	1	2
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	4.0	4.0	4.1	4.4	4.1	4.4	3.5	3.5	3.8
	Median	4	4	4	5	4	5	4	3	4
	Min	2	2	3	3	2	3	1	2	2
Floral Display	Max	5	5	5	5	4	5	5	5	5
	Mean	1.6	1.9	2.6	4.0	2.9	4.3	2.8	1.3	2.6
	Median	1	2	2	4	3	5	3	1	3
	Min	1	0	0	2	1	2	0	0	1

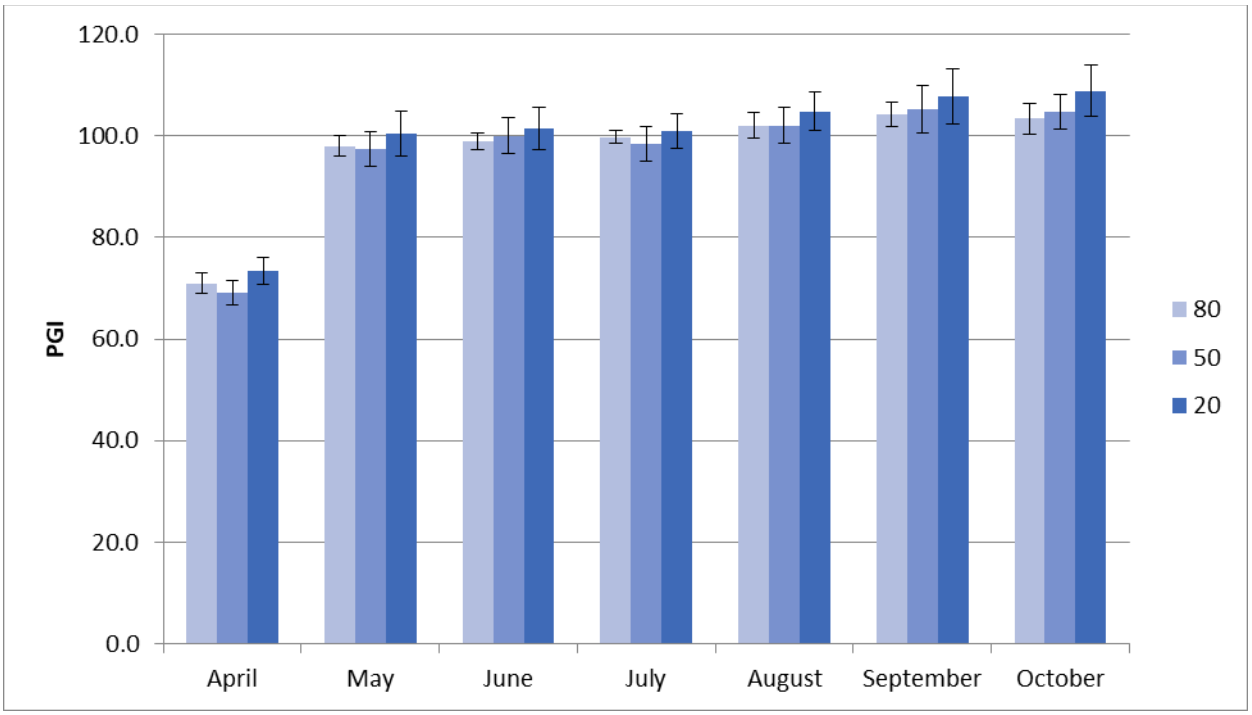

Figure 9a. *Rosa* 'Meikokan' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

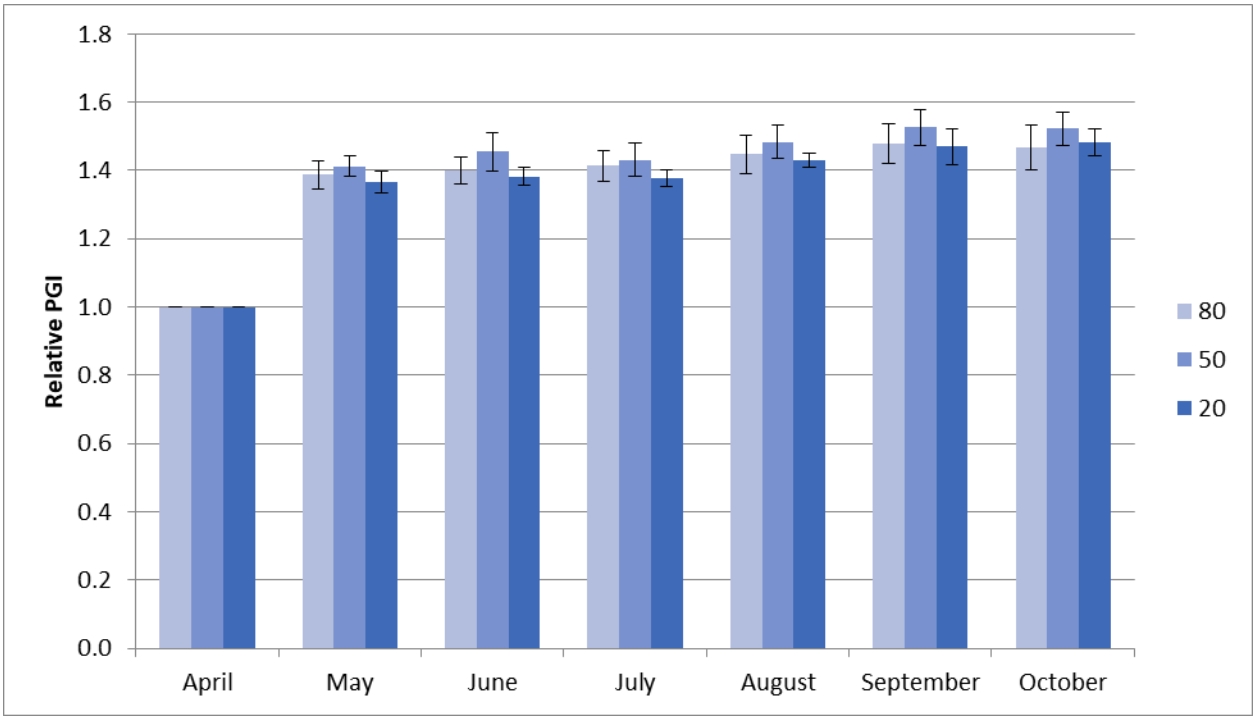

Figure 9a. *Rosa* 'Meikokan' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 16a. *Rosa* 'Meisentmil' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	3.9	4.9	4.3	3.6	3.5	3.9	3.2	3.9
	50	3.9	4.6	4.1	3.5	3.1	3.5	3.4	3.7
	20	4.0	4.8	3.6	3.6	3.0	3.3	3.0	3.6
Foliage	80	4.7	4.9	4.7	4.1	3.6	3.9	3.1	4.1
	50	4.8	5.0	4.6	4.1	3.4	3.8	3.4	4.1
	20	4.9	5.0	4.3	4.2	3.6	3.7	3.0	4.1
Flower	80		4.7	3.0	1.7	1.4	2.6^{a}	1.1	2.4
	50	1.0	4.1	2.8	1.6	1.6	2.0^{ab}	1.4	2.1
	20		4.6	3.2	1.7	1.0	1.4^{b}	1.6	2.2
Pest Resistance	80	4.9	4.9	4.9	4.6	3.7	4.1	3.1	4.3
	50	4.8	5.0	4.6	4.4	3.5	4.0	3.4	4.2
	20	4.9	5.0	4.4	4.7	3.7	3.7	3.0	4.2
Disease Resistance	80	4.9	5.0	4.7	4.4	4.0	4.6	5.0	4.7
	50	5.0	5.0	4.8	4.0	4.4	4.8	5.0	4.7
	20	5.0	5.0	4.9	4.1	4.4	4.7	4.9	4.7
Vigor	80	4.9	5.0	4.7	4.4	4.7	5.0	4.6	4.8
	50	4.4	4.9	4.6	4.8	4.9	4.8	4.3	4.6
	20	4.9	4.9	4.4	4.6	4.7	4.4	4.4	4.6

Ratings with different superscripts are significantly different using ANOVA and Tukey's Post-Hoc, p≤ .05.

Table 16b. Open House participant ratings for *Rosa* 'Meisentmil' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	**80**	**50**	**20**	**80**	**50**	**20**	**80**	**50**	**20**
Overall Appearance	Max	5	5	5	4	5	5	5	5	5
	Mean	4.0	4.3	4.1	3.1	3.4	3.6	3.1	3.5	3.4
	Median	4	4	4	3	4	4	3	3	4
	Min	2	3	2	1	2	2	1	1	2
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	4.3	4.5	4.3	4.0	4.2	4.4	3.6	3.8	3.7
	Median	4	5	5	4	4	5	3	4	4
	Min	2	2	2	2	2	2	2	2	2
Floral Display	Max	5	5	5	4	4	5	5	5	5
	Mean	3.2	3.0	2.6	1.9	1.5	2.5	2.1	2.4	1.9
	Median	3	3	2	2	1	2	2	2	2
	Min	1	1	1	1	0	1	0	0	0

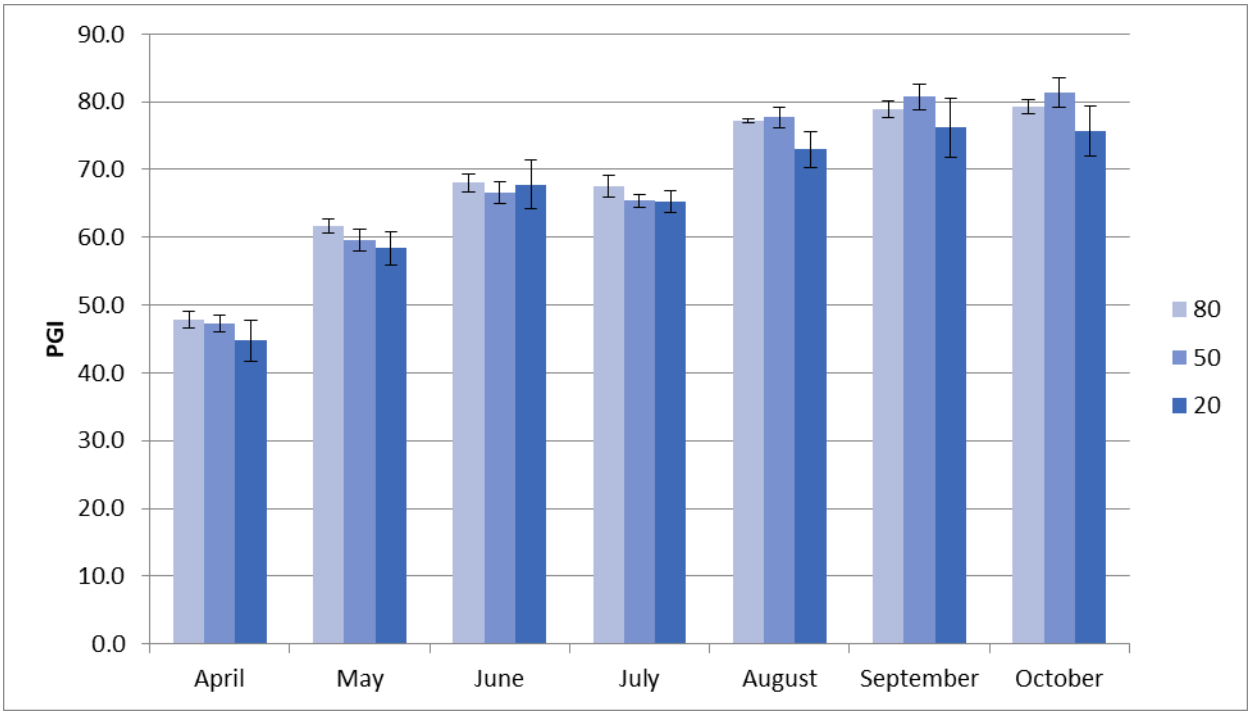

Figure 10a. *Rosa* 'Meisentmil' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

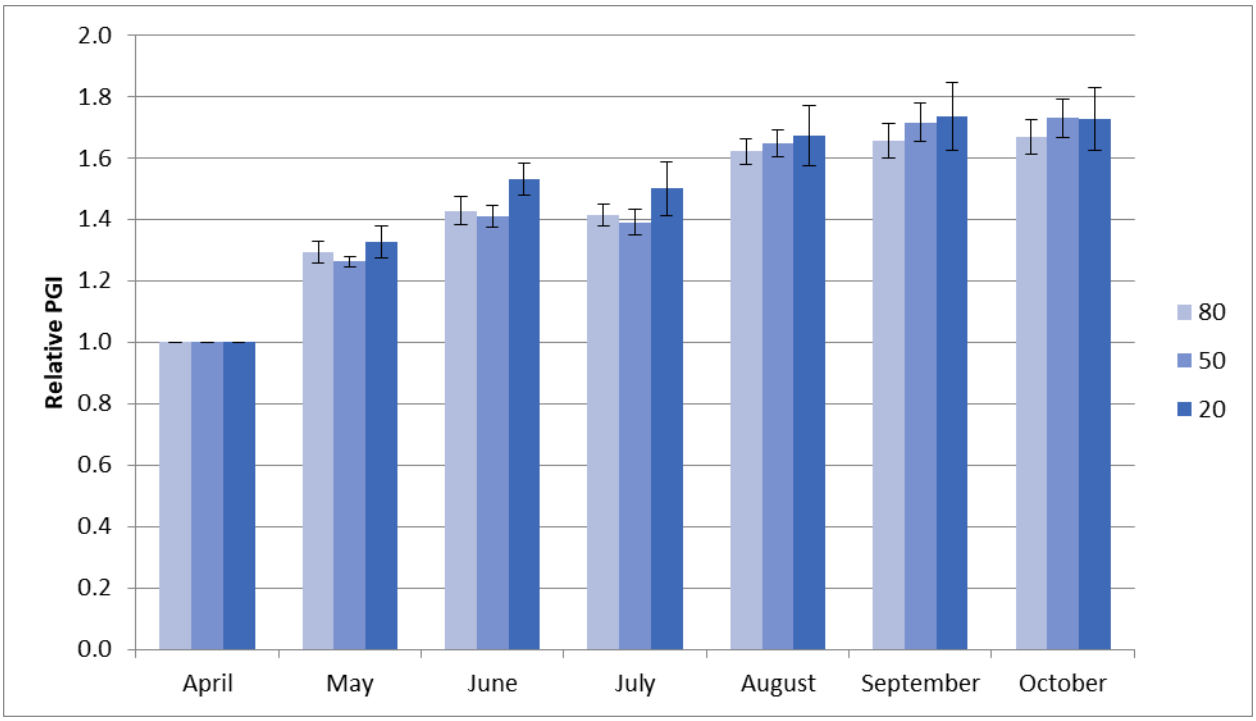

Figure 10b. *Rosa* 'Meisentmil' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 17a. *Rosa* 'Radcon' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	4.0	4.6	3.6	4.6	4.4	4.3	3.5	4.1
	50	4.1	4.6	3.4	4.5	4.5	3.7	4.0	4.1
	20	4.0	4.5	3.6	4.6	5.0	4.4	4.3	4.3
Foliage	80	3.9	3.5	3.6	3.8	4.1	4.5	3.6	3.9
	50	4.0	3.3	3.9	3.7	4.3	4.3	3.4	3.8
	20	4.0	3.5	3.6	3.8	4.1	4.6	3.5	3.9
Flower	80	1.0	3.9	1.3	3.8	3.3	3.5	1.8	2.6
	50	1.0	3.9	1.3	3.7	3.6	2.1	2.7	2.6
	20	1.0	4.1	1.9	3.9	3.6	3.3	3.0	3.0
Pest Resistance	80	3.9	4.0	4.1	4.3	4.3	4.5	3.6	4.1
	50	4.0	4.1	4.3	4.1	4.4	4.6	3.4	4.1
	20	4.0	4.3	4.1	4.1	4.3	4.5	3.5	4.1
Disease Resistance	80	5.0	3.8	3.8	3.8	4.6	4.8	5.0	4.4
	50	5.0	3.7	3.9	3.7	4.4	4.7	4.9	4.3
	20	5.0	3.8	3.6	3.9	4.5	4.9	4.9	4.4
Vigor	80	4.9	4.9	4.9	5.0	4.6	5.0	4.5	4.8
	50	5.0	4.6	5.0	5.0	4.9	4.9	4.1	4.8
	20	5.0	5.0	5.0	5.0	5.0	5.0	4.8	5.0

Table 17b. Open House participant ratings for *Rosa* 'Radcon' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	5	5	5	5	5	5	5	5
	Mean	4.6	4.1	4.3	3.6	4.4	4.3	3.7	3.8	3.5
	Median	5	4	4	4	4	4	4	4	4
	Min	3	3	3	2	3	3	2	2	2
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	4.4	4.2	4.2	4.2	4.6	4.6	3.9	4.2	3.9
	Median	5	4	4	4	5	5	4	4	4
	Min	3	3	2	2	2	2	2	2	2
Floral Display	Max	5	5	5	5	5	5	5	5	5
	Mean	4.1	2.9	3.5	3.0	4.0	4.0	2.8	2.5	2.1
	Median	4	3	4	3	4	4	3	2	2
	Min	3	1	2	1	1	2	1	1	0

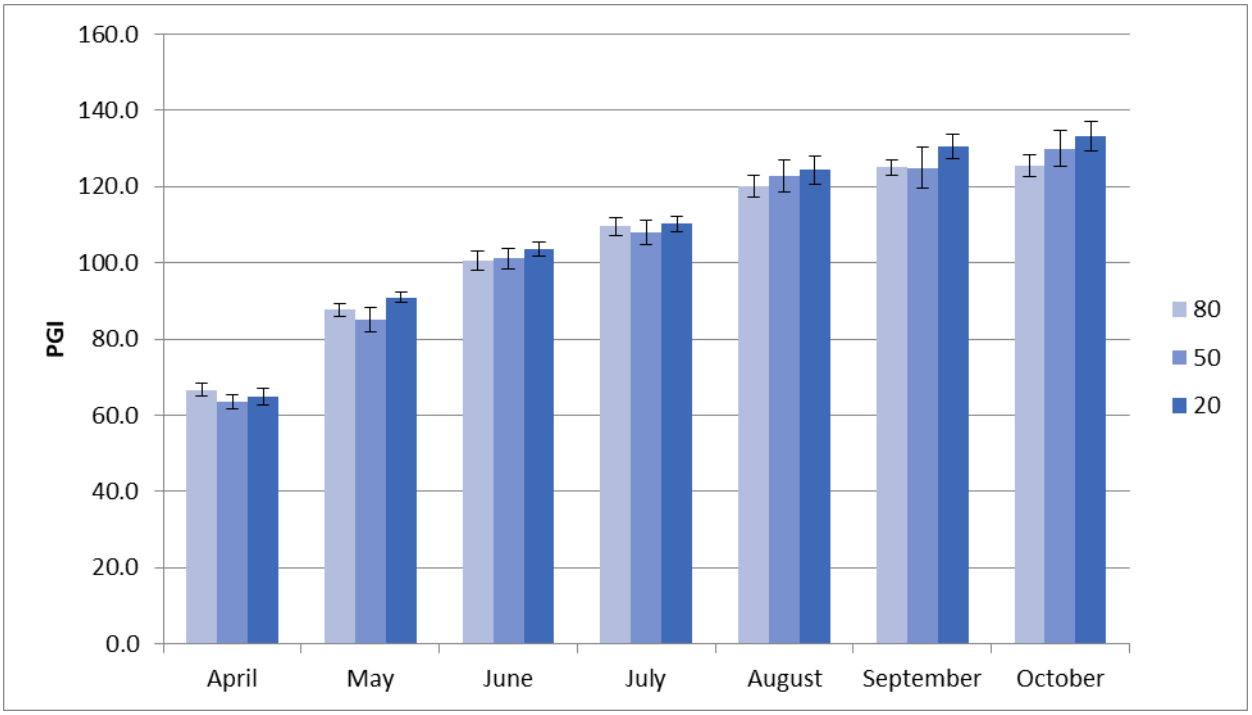

Figure 11a. *Rosa* 'Radcon' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

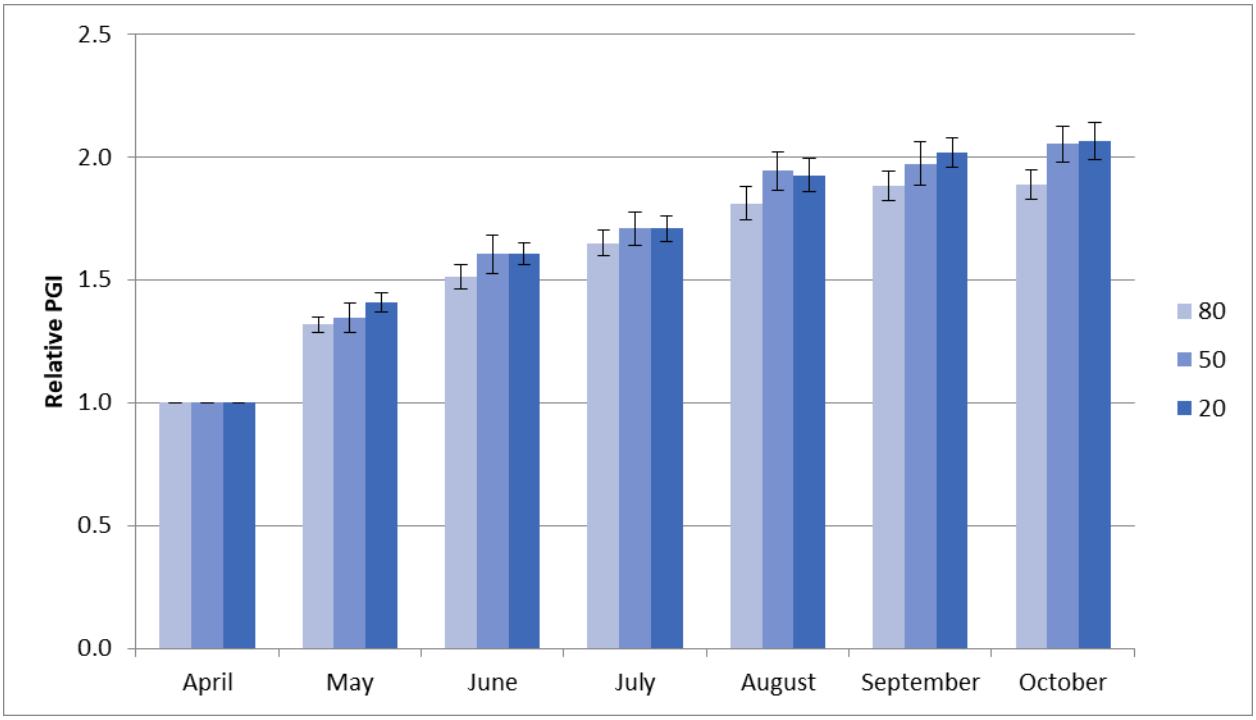

Figure 11a. *Rosa* 'Radcon' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 18a. *Tulbaghia* 'Ashanti' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	4.5	4.5	4.4	3.9	3.6	2.9	2.6	3.8
	50	3.9	4.4	4.4	3.4	3.6	2.6	2.7	3.6
	20	4.5	4.8	4.3	4.2	2.8	3.0	2.5	3.7
Foliage	80	4.0	4.5	4.1	3.7	3.3	3.4	2.9	3.7
	50	3.9	3.9	3.7	3.4	3.7	3.6	3.4	3.7
	20	4.3	4.5	3.8	4.0	3.1	3.4	3.0	3.7
Flower	80	2.6	4.3	3.7	4.3	4.5	4.4	3.5	3.9
	50	2.2	4.6	4.1	3.9	4.0	4.3	3.6	3.8
	20	3.0	4.8	4.4	4.5	3.8	4.3	3.3	4.0
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	4.9	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vigor	80	3.9	4.3	4.0	3.4	3.7	3.7	3.3	3.8
	50	3.7	4.1	4.1	3.6	3.4	3.6	2.9	3.6
	20	3.9	4.4	4.3	3.8	2.8	3.6	2.6	3.6

Table 18b. Open House participant ratings for *Tulbaghia* 'Ashanti' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	5	5	5	5	5	4	5	4
	Mean	4.0	4.1	3.8	3.4	3.8	3.6	2.8	3.2	3.0
	Median	4	4	4	3	4	4	3	3	3
	Min	3	3	2	2	2	2	1	1	2
Foliage Quality	Max	5	5	5	4	5	5	5	5	5
	Mean	3.9	4.0	3.7	3.2	3.6	3.5	3.2	3.6	3.5
	Median	4	4	4	3	4	4	3	4	4
	Min	3	3	2	2	2	2	1	2	2
Floral Display	Max	5	5	5	5	5	5	5	5	5
	Mean	3.9	3.8	3.7	3.9	4.2	4.1	2.4	2.8	2.5
	Median	4	4	4	4	4	4	2	3	3
	Min	1	1	1	2	2	2	0	0	1

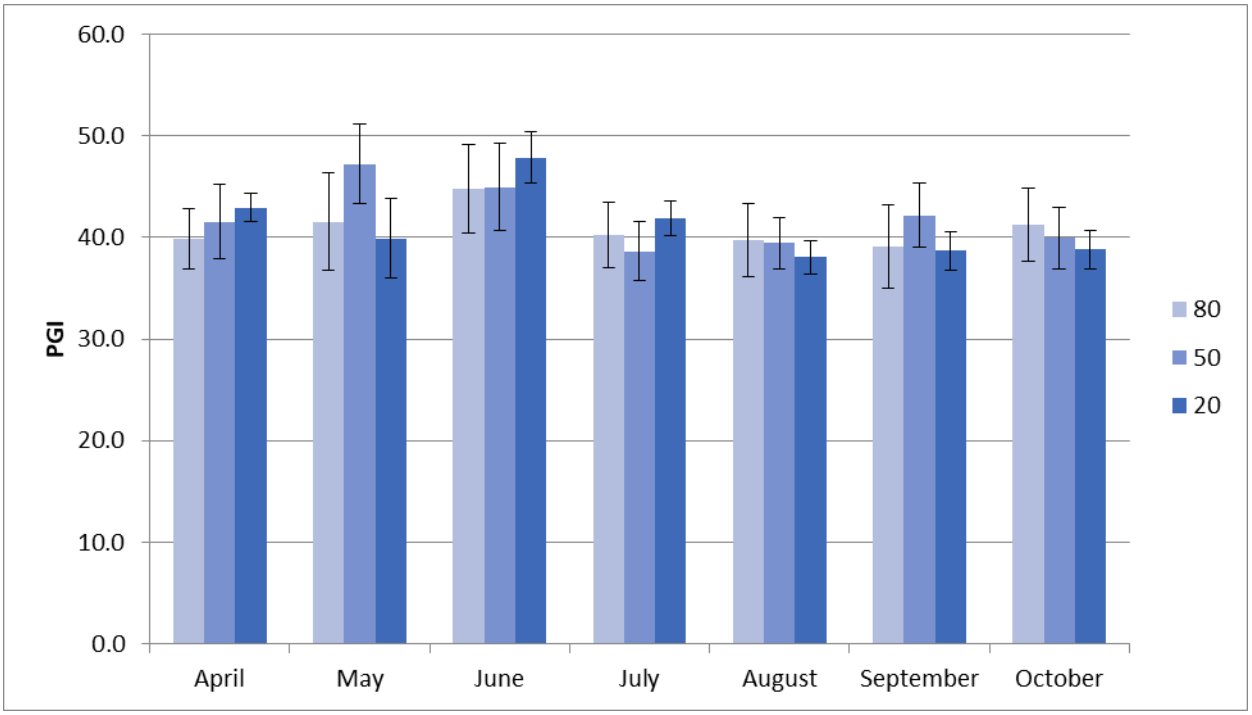

Figure 12a. *Tulbaghia* 'Ashanti' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

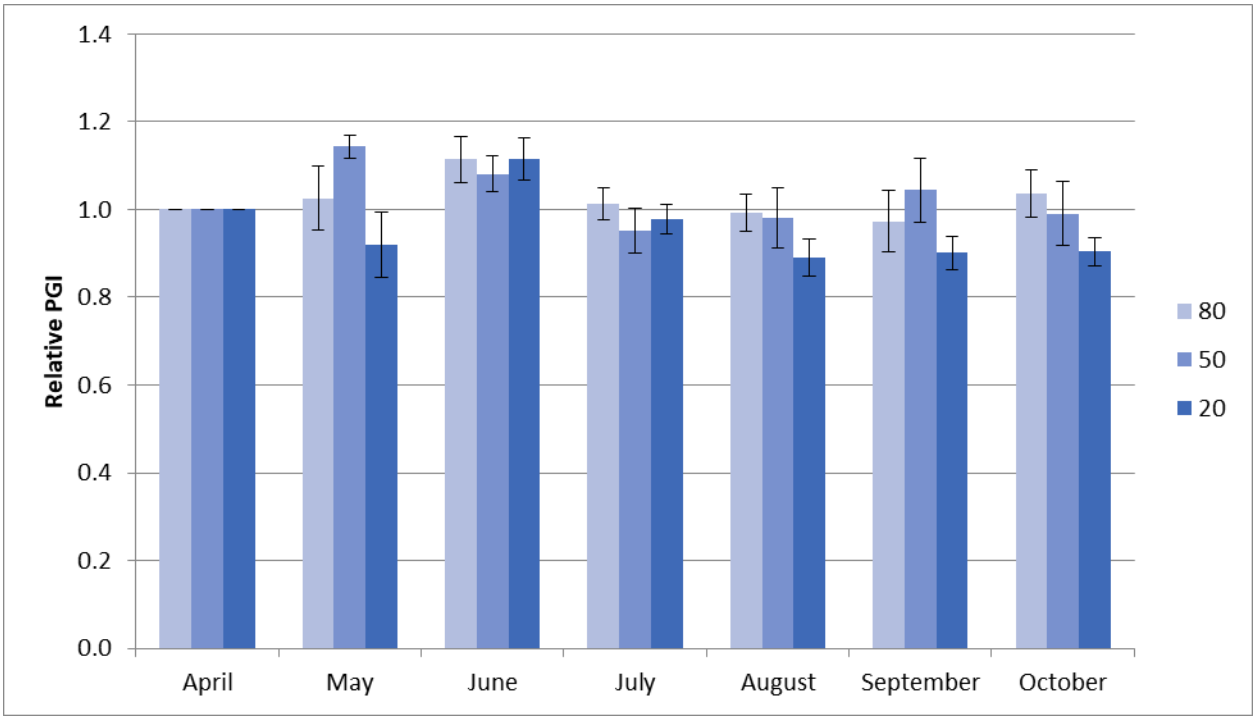

Figure 12a. *Tulbaghia* 'Ashanti' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 19a. *Vitex agnus-castus* 'PIIVAC-I' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	4.0	4.0	4.0	5.0	4.1	3.8	4.5	4.2
	50	3.8	4.0	4.0	5.0	4.0	4.0	4.5	4.2
	20	4.0	4.0	4.0	5.0	4.0	4.1	4.9	4.3
Foliage	80	5.0	5.0	5.0	5.0	4.6	4.5	4.0	4.7
	50	5.0	5.0	5.0	5.0	4.4	4.3	3.9	4.6
	20	5.0	5.0	5.0	5.0	4.9	4.8	4.3	4.8
Flower	80			1.0	5.0	1.0	1.0	2.9	2.2
	50			1.0	5.0	1.1	1.3	2.8	2.2
	20			1.0	5.0	1.1	1.3	3.8	2.4
Pest Resistance	80	5.0	5.0	5.0	5.0	4.6	4.5	4.0	4.7
	50	5.0	5.0	5.0	5.0	4.4	4.3	3.9	4.6
	20	5.0	5.0	5.0	5.0	4.9	4.8	4.4	4.9
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vigor	80	5.0	5.0	5.0	4.9	5.0	5.0	4.8	4.9
	50	5.0	5.0	4.9	4.9	4.5	4.8	4.5	4.8
	20	5.0	5.0	5.0	5.0	5.0	5.0	4.9	5.0

Table 19b. Open House participant ratings for *Vitex agnus-castus* 'PIIVAC-I' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	5	5	5	5	5	4	5	5
	Mean	3.9	3.9	3.9	4.8	4.5	4.6	2.5	4.4	4.3
	Median	4	4	4	5	5	5	2	4	4
	Min	3	2	2	4	3	3	1	3	3
Foliage Quality	Max	5	5	5	5	5	5	4	5	5
	Mean	4.4	4.4	4.3	4.8	4.6	4.7	2.5	4.7	4.6
	Median	4	5	4	5	5	5	3	5	5
	Min	3	3	2	4	3	3	1	3	3
Floral Display	Max	3	1	3	5	5	5	5	5	5
	Mean	0.1	0.0	0.1	4.6	4.5	4.5	1.3	2.5	3.0
	Median	0	0	0	5	5	5	1	3	3
	Min	0	0	0	2	2	2	0	1	1

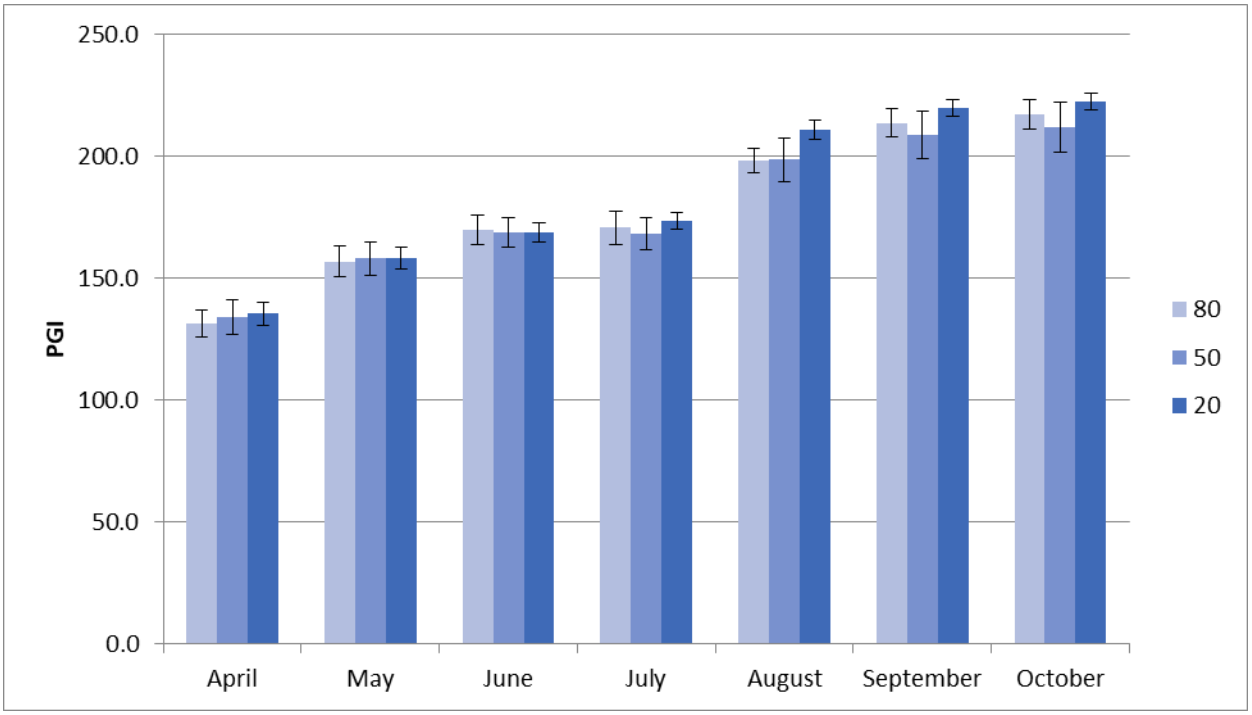

Figure 13a. *Vitex agnus-castus* 'PIIVAC-I' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

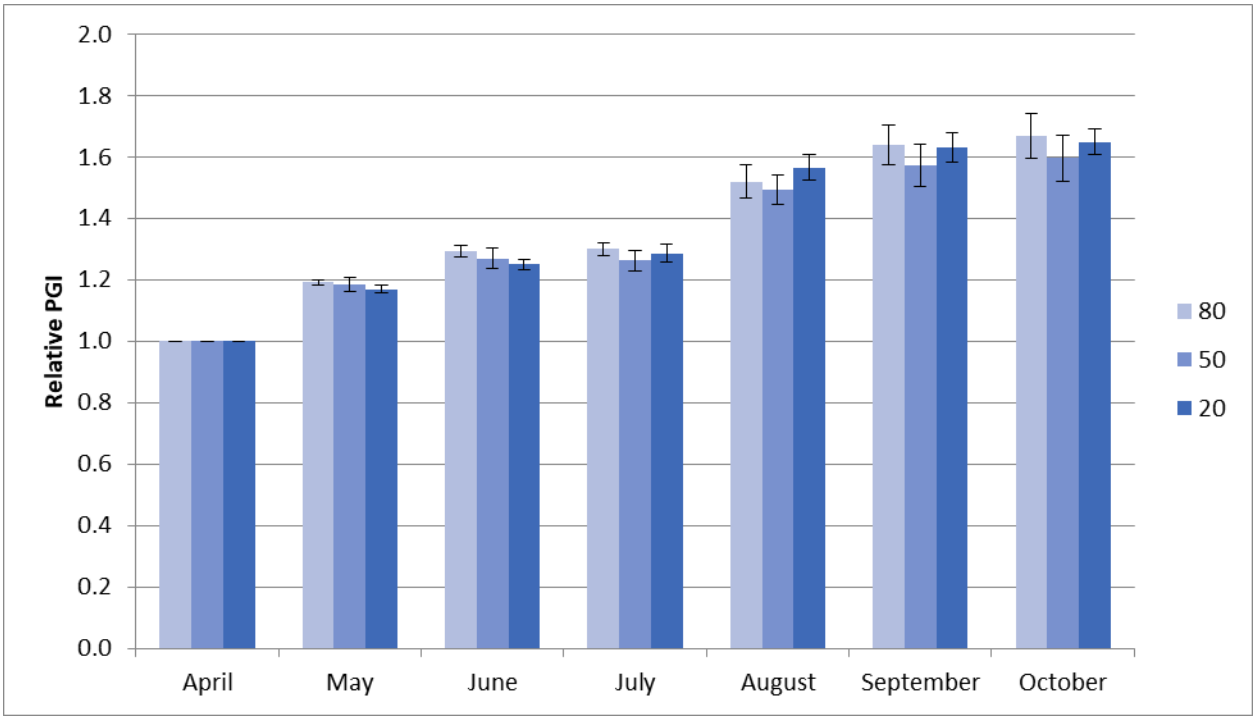

Figure 13b. *Vitex agnus-castus* 'PIIVAC-I' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 20a. *Westringia fruticose* 'NFL25' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	3.5	3.6	3.4	3.7	3.9	4.1	3.7
	50	3.3	3.2	3.8	3.7	3.8	3.8	3.6
	20	3.4	3.6	3.6	3.9	3.7	3.9	3.7
Foliage	80	3.7	4.0	3.9	4.1	4.6	4.6	4.1
	50	3.7	4.0	4.7	4.3	4.3	4.5	4.3
	20	3.6	4.0	4.0	4.3	4.6	4.4	4.1
Flower	80							
	50							
	20							
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	4.8	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vigor	80	4.3	4.7	4.7	4.9	5.0	5.0^{a}	4.8^{a}
	50	3.8	3.8	4.0	4.0	4.2	3.8^{b}	3.9^{b}
	20	3.9	4.4	4.1	4.1	4.4	4.3^{ab}	4.2^{ab}

Ratings with different superscripts are significantly different using ANOVA and Tukey's Post-Hoc, p≤ .05.

Table 20b. Open House participant ratings for *Westringia fruticose* 'NFL25' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	**80**	**50**	**20**	**80**	**50**	**20**	**80**	**50**	**20**
Overall Appearance	Max	5	5	5	5	5	5	5	5	5
	Mean	2.8	3.5	3.3	3.4	4.5	4.4	4.0	4.6	4.1
	Median	3	4	3	3	5	4	4	5	4
	Min	1	2	2	2	3	3	2	3	2
Foliage Quality	Max	4	5	5	5	5	5	5	5	5
	Mean	3.0	3.8	3.4	3.6	4.8	4.5	4.1	4.7	4.4
	Median	3	4	3	4	5	5	4	5	4
	Min	2	2	2	2	4	3	2	4	2
Floral Display	Max	0	3	1	0	1	1	4	1	1
	Mean	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
	Median	0	0	0	0	0	0	0	0	0
	Min	0	0	0	0	0	0	0	0	0

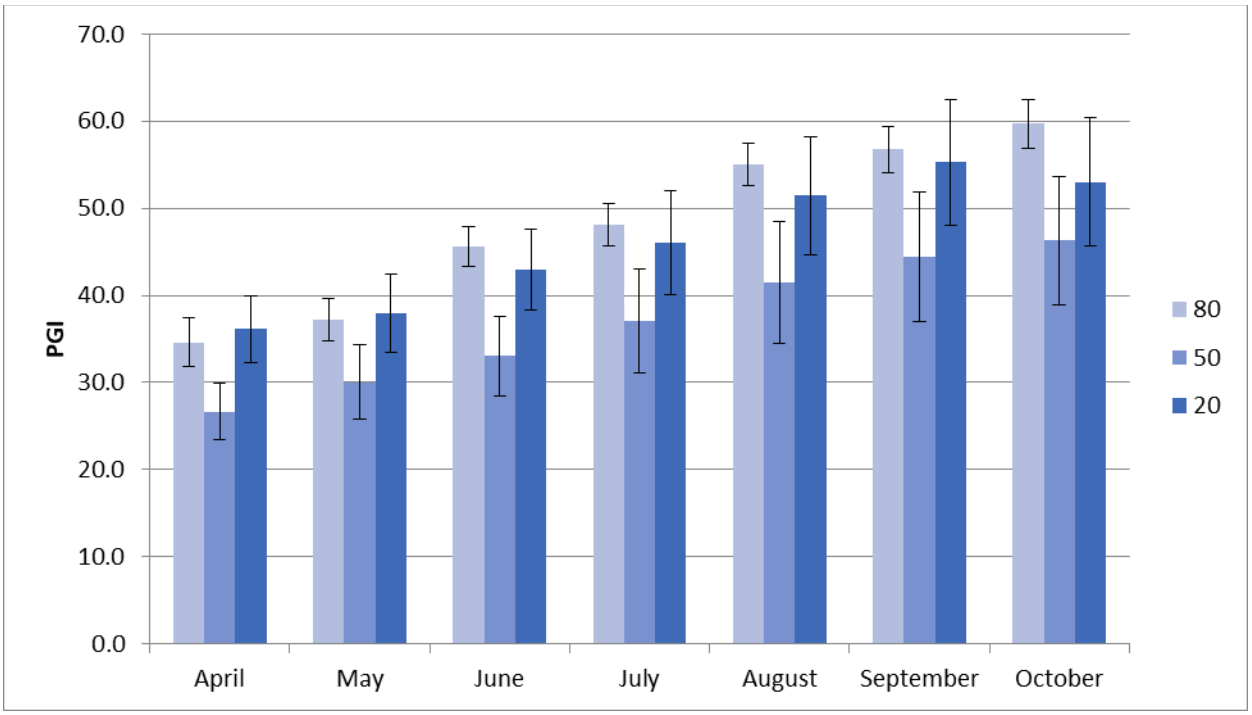

Figure 14a. *Westringia fruticose* 'NFL25' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

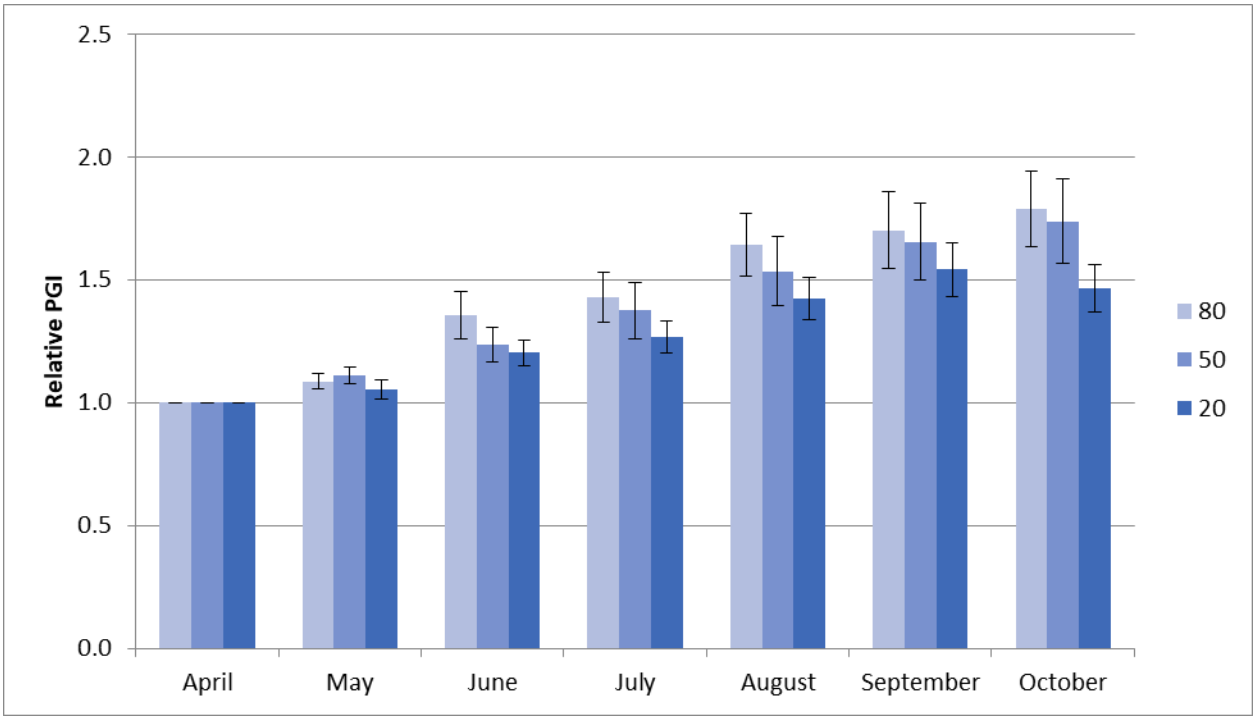

Figure 14a. *Westringia fruticose* 'NFL25' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 21a. *Abelia grandiflora* 'Wevol' average monthly quality ratings (scale of 1-5) on 3 ETo-based irrigation levels during 2018.

Category	ETo%	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	2.4	2.8	2.4	2.9	2.3	2.4[a]	2.5
	50	2.8	2.8	2.5	3.0	2.0	1.9[b]	2.5
	20	2.8	2.7	2.5	2.6	1.9	2.0[ab]	2.4
Foliage	80	5.0	5.0	3.3	3.1	3.8	4.0	4.02[a]
	50	5.0	4.8	3.0	3.6	3.6	3.8	3.96[ab]
	20	5.0	4.5	3.4	2.8	2.6	2.8	3.5[b]
Flower	80			1.0	1.0	1.2	1.1	1.1
	50	1.5		1.0	1.0	1.0	1.0	1.1
	20					1.0	1.0	1.0
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vigor	80	3.5	3.3	3.3	3.3	2.9	3.3	3.2
	50	3.9	3.1	3.4	3.0	2.6	3.0	3.2
	20	3.9	3.1	3.3	3.0	2.1	2.4	3.0

Table 21b. Open House participant ratings for *Abelia grandiflora* 'Wevol' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	5	5	3	3	3	5	3	3
	Mean	3.1	3.4	3.1	1.7	1.7	2.1	3.3	2.1	1.6
	Median	3	3	3	2	2	2	3	2	1
	Min	1	2	1	1	1	1	1	1	1
Foliage Quality	Max	5	5	5	3	3	4	5	4	3
	Mean	3.4	3.7	3.6	1.8	1.7	2.4	3.5	2.3	1.7
	Median	3	4	4	2	2	2	3	2	2
	Min	2	2	2	1	1	1	2	1	1
Floral Display	Max	3	3	4	0	0	3	4	2	3
	Mean	0.1	0.0	0.1	0.0	0.0	0.1	1.9	0.8	0.1
	Median	0	0	0	0	0	0	2	1	0
	Min	0	0	0	0	0	0	0	0	0

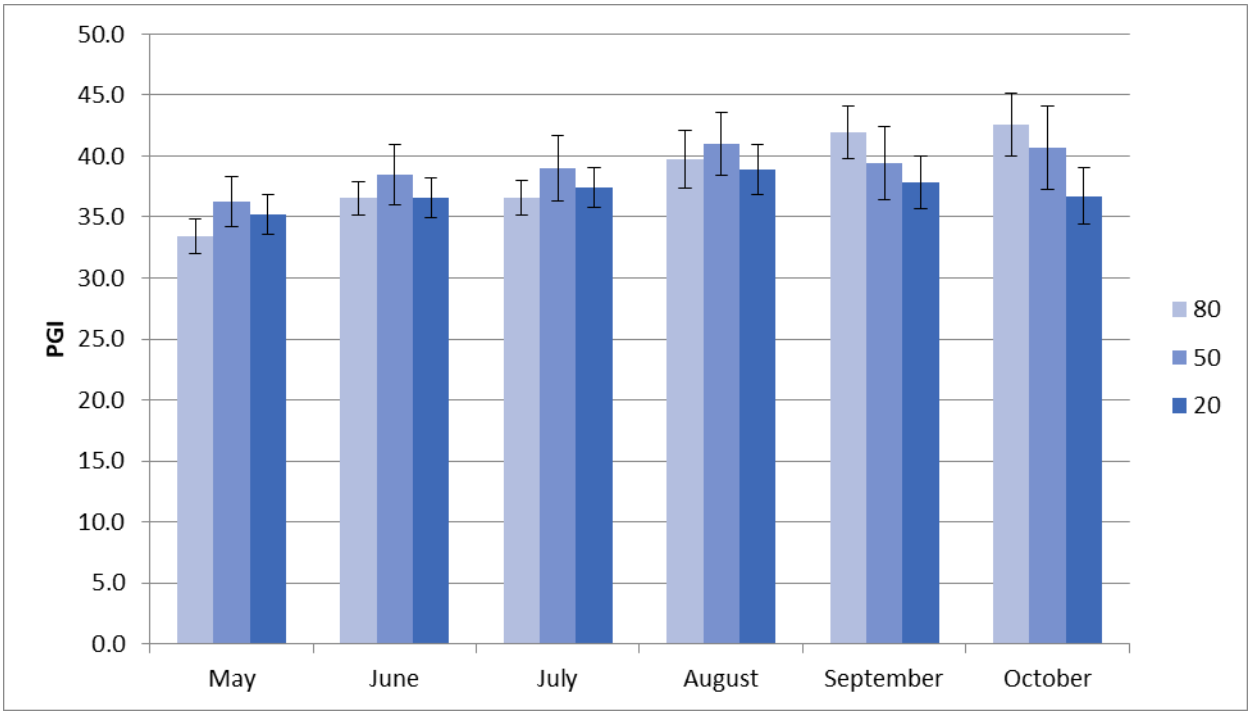

Figure 15a. *Abelia grandiflora* 'Wevol' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

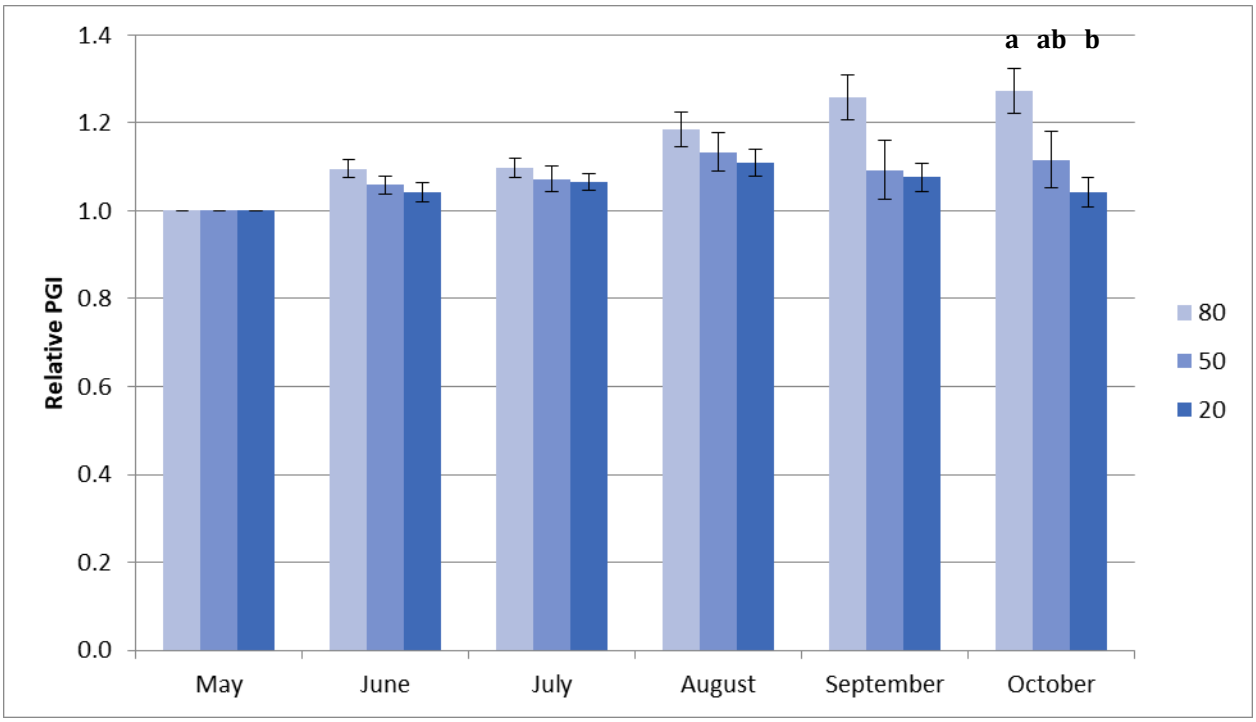

Figure 15a. *Abelia grandiflora* 'Wevol' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. Bars with different letters represent significant difference using ANOVA and Tukey's Post-hoc at p≤ 0.05.

Table 22a. *Ceanothus griseus* var. *horizontalis* 'MATCEA01' average monthly quality ratings on 3 ETo-based irrigation treatments in 2018.

Category	ETo%	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	3.8	4.0	3.8	3.6	3.8	4.0	3.8
	50	4.3	4.3	3.9	3.6	3.9	3.6	3.9
	20	4.0	4.3	4.0	3.6	3.3	3.7	3.8
Foliage	80	4.9	5.0	4.6	3.8	3.9	5.0	4.5
	50	5.0	5.0	4.8	3.8	4.4	4.6	4.6
	20	4.9	5.0	4.7	3.6	4.2	4.3	4.4
Flower	80							
	50							
	20	3.0						3.0
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vigor	80	4.6	4.3	4.0	3.9	3.9	3.8	4.1
	50	4.6	4.3	4.1	4.2	4.0	3.8	4.2
	20	4.4	4.3	4.3	4.1	4.0	3.8	4.2

Table 22b. Open House participant ratings for *Ceanothus griseus* var. *horizontalis* 'MATCEA01' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	5	5	5	5	5	5	5	5
	Mean	4.3	4.5	4.2	4.1	4.2	4.1	4.0	3.6	4.0
	Median	5	5	4	4	4	4	4	4	4
	Min	2	2	1	2	3	2	3	2	2
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	4.5	4.6	4.4	4.1	4.2	4.2	4.2	3.7	4.1
	Median	5	5	4	4	4	4	4	4	4
	Min	2	3	2	2	2	2	3	1	3
Floral Display	Max	5	5	5	5	5	5	0	3	5
	Mean	0.6	0.8	0.8	0.1	0.2	0.2	0.0	0.0	0.1
	Median	0	1	1	0	0	0	0	0	0
	Min	0	0	0	0	0	0	0	0	0

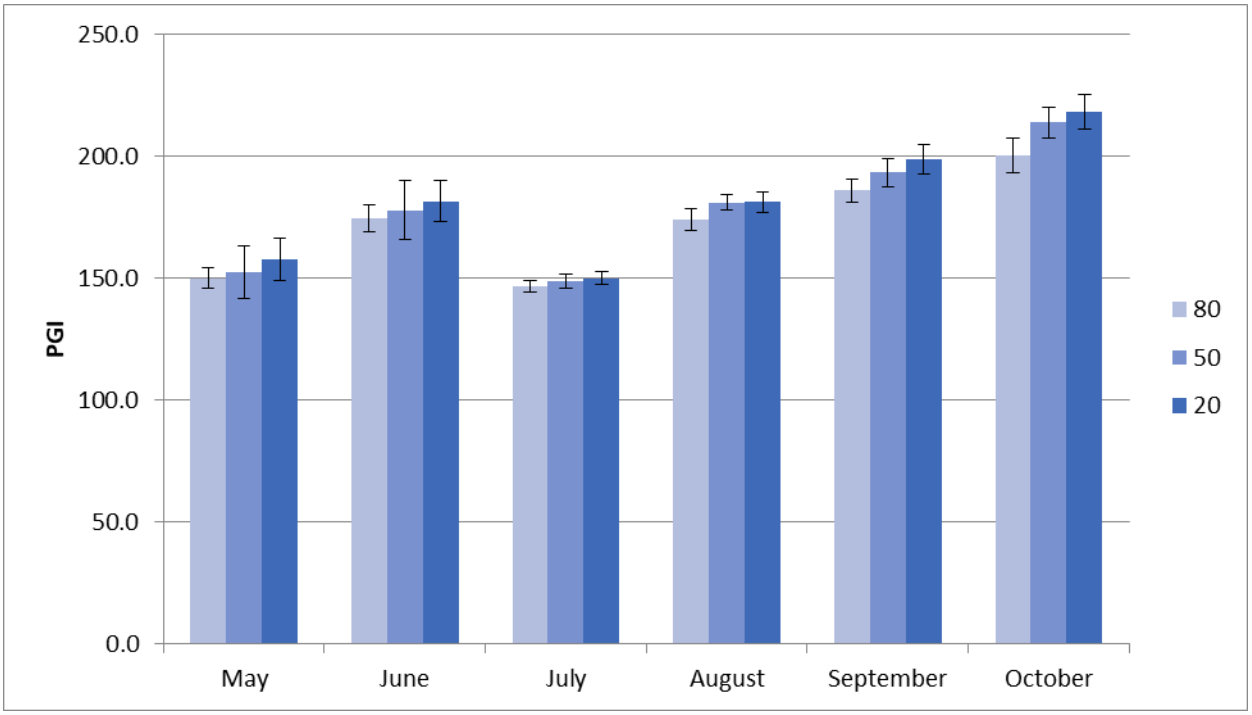

Figure 16a. *Ceanothus griseus* var. *horizontalis* 'MATCEA01' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

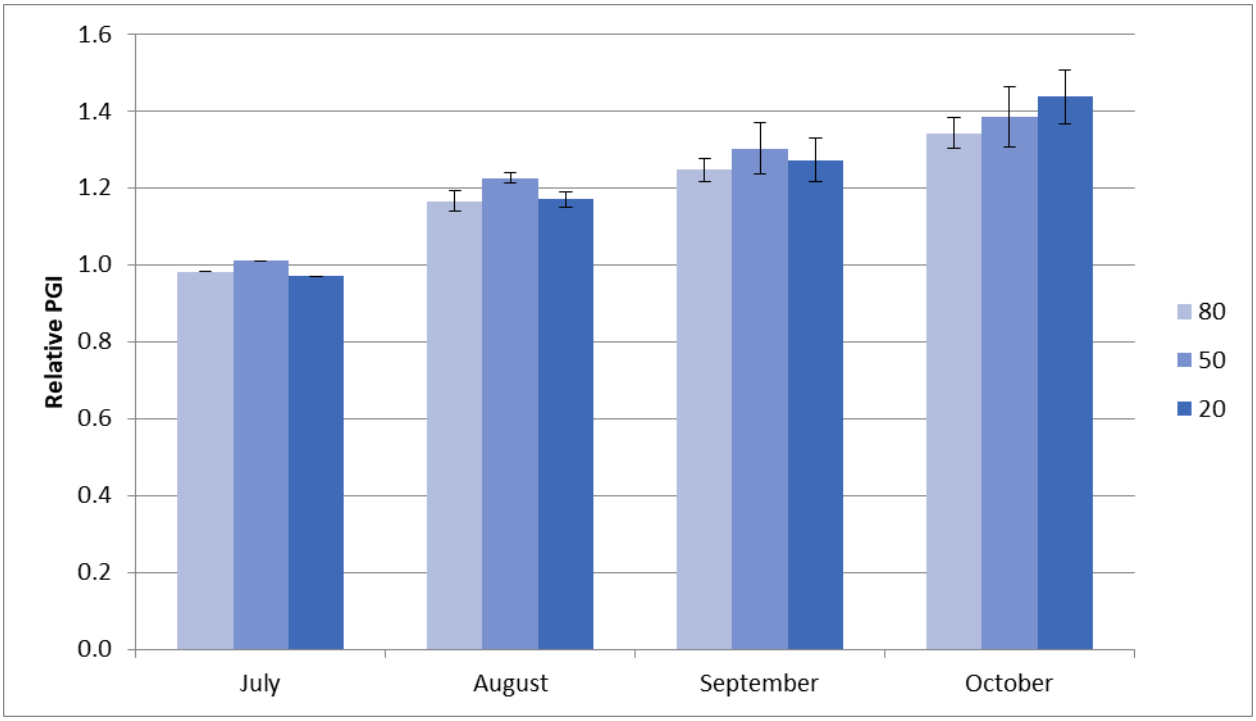

Figure 16a. *Ceanothus griseus* var. *horizontalis* 'MATCEA01' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 23a. *Illicium parviflorum* 'PIIIP-I' average monthly quality ratings on 3 ETo-based irrigation treatments in 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	2.8	2.9	2.6	2.4[a]	2.4[a]	2.1[a]	2.1	2.5
	50	3.1	2.8	2.7	1.3[b]	2.1[a]	2.0[a]	2.0	2.3
	20	3.3	2.9	2.6	1.6[b]	1.0[b]	1.0[b]		2.1
Foliage	80	3.0	3.3	2.5	2.5[a]	2.8[a]	2.4[a]	2.4	2.7
	50	3.4	3.1	2.9	1.3[b]	2.1[a]	2.0a	2.0	2.4
	20	3.3	3.0	2.8	1.5[b]	1.0[b]	1.0[b]		2.1
Flower	80								
	50								
	20								
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vigor	80	4.6	4.3	3.0	2.5[a]	2.6[a]	2.5[a]	2.8	3.2
	50	5.0	4.3	3.1	1.3[b]	2.4[a]	2.0[a]	2.3	2.9
	20	4.9	4.5	3.0	1.6[b]	1.0[b]	1.0[b]		2.7

Ratings with different superscripts represent significant difference using ANOVA and Tukey's Post-hoc at p≤ 0.01 (in black) or p≤0.05 (in red).

Table 23b. Open House participant ratings for *Illicium parviflorum* 'PIIIP-I' on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	4	4	4	3	3	4	3	-
	Mean	2.5	2.8	2.4	2.4	1.3	1.9	2.5	1.7	-
	Median	2	3	2	2	1	2	3	2	-
	Min	1	1	1	1	1	1	1	1	-
Foliage Quality	Max	4	5	4	4	3	4	4	3	-
	Mean	2.6	2.8	2.4	2.5	1.3	2.1	2.6	1.9	-
	Median	3	3	2	3	1	2	3	2	-
	Min	1	1	1	1	1	1	1	1	-
Floral Display	Max	1	2	3	0	0	0	1	1	-
	Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
	Median	0	0	0	0	0	0	0	0	-
	Min	0	0	0	0	0	0	0	0	-

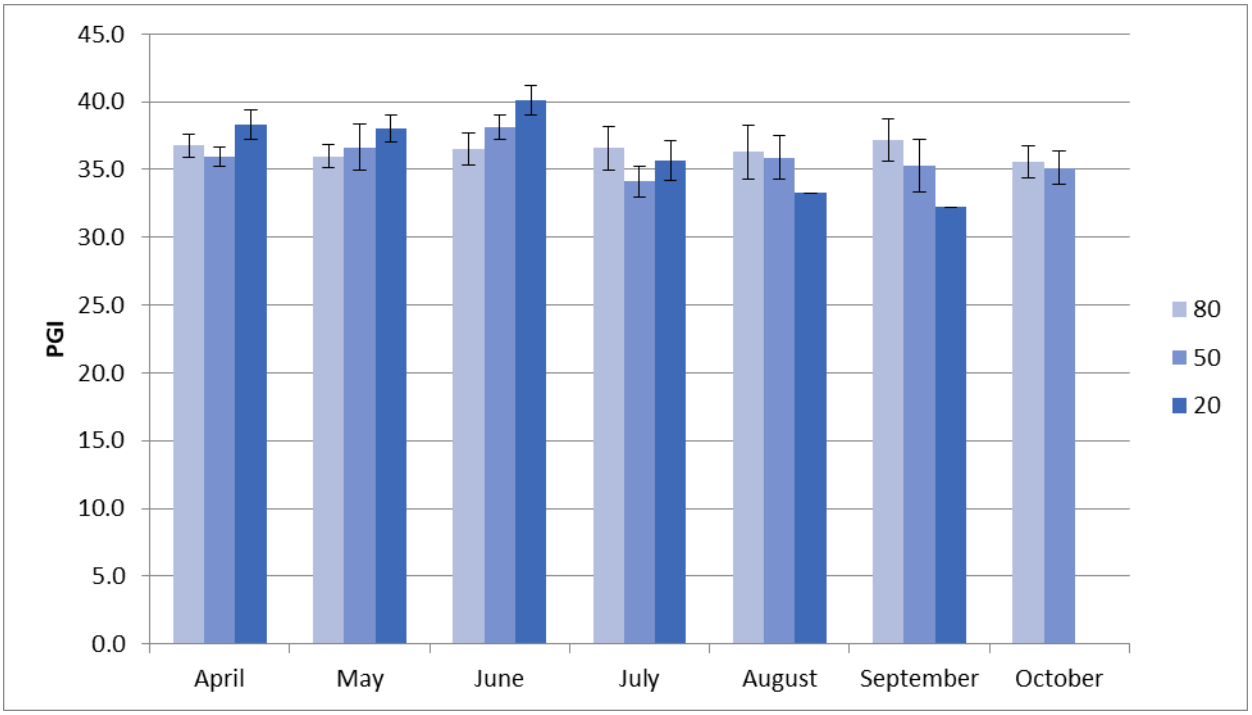

Figure 17a. *Illicium parviflorum* 'PIIIP-I' average monthly plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

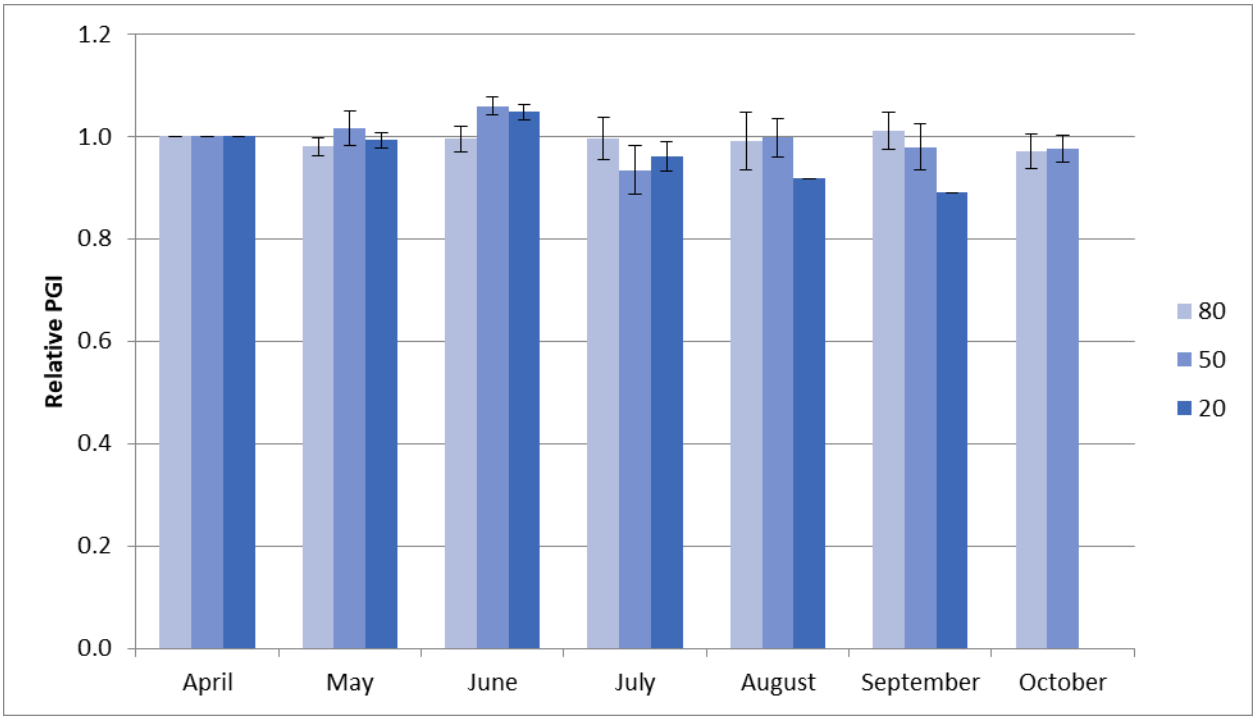

Figure 17b. *Illicium parviflorum* 'PIIIP-I' average monthly relative plant growth index on 3 ETo-based irrigation treatments in 2018. Bars represent ±1 SE. There were no significant differences between treatments.

Table 24a. *Lomandra longifolia* 'LM300' Breeze™ average monthly quality ratings on 3 ETo-based irrigation treatments in 2018.

Category	ETo%	Apr	May	Jun	Jul	Aug	Sep	Oct	AVG
Overall Appearance	80	3.8	3.7	3.5	3.9	3.9	3.6	3.7	3.7
	50	4.6	4.1	3.7	4.3	4.3	4.3	4.3	4.2
	20	3.9	3.9	3.2	3.9	3.9	3.4	3.9	3.7
Foliage	80	4.9	4.0	3.9	4.0	3.9	3.7	4.4	4.1
	50	4.8	4.6	4.0	4.0	4.0	4.1	4.5	4.3
	20	4.7	4.3	3.9	4.0	3.9	4.1	4.4	4.2
Flower	80	4.1	1.9	2.0	1.3	1.0	1.0	1.3	1.8
	50	4.6	2.3	1.9	1.3	1.0	1.1	1.5	2.0
	20	4.0	2.2	1.7	1.0	1.0	1.0	1.1	1.7
Pest Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Disease Resistance	80	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	50	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vigor	80	4.0	3.6	3.1	3.9	4.0	3.7	4.1	3.8
	50	4.5	3.9	3.3	3.8	4.3	4.3	3.9	4.0
	20	4.3	3.6	3.1	3.4	3.9	3.7	3.6	3.7

Table 24b. Open House participant ratings for *Lomandra longifolia* 'LM300' Breeze™ on 3 ETo-based irrigation treatments in May, July, and September 2018.

		May			July			September		
	ET_o %	80	50	20	80	50	20	80	50	20
Overall Appearance	Max	5	5	5	5	5	5	5	5	5
	Mean	3.5	4.3	4.0	3.8	4.5	3.9	3.6	4.4	3.8
	Median	3	4	4	4	5	4	4	5	4
	Min	2	1	3	2	3	2	2	3	2
Foliage Quality	Max	5	5	5	5	5	5	5	5	5
	Mean	3.6	4.4	4.1	3.9	4.4	3.9	3.7	4.4	3.8
	Median	4	4	4	4	4	4	4	4	4
	Min	2	3	3	2	3	3	2	3	2
Floral Display	Max	5	5	5	5	5	5	5	5	5
	Mean	2.7	2.9	2.7	2.0	2.0	2.1	1.1	1.2	1.1
	Median	3	3	3	2	2	2	0	0	0
	Min	0	0	0	0	0	0	0	0	0

Appendix B
PHOTOS

Figure 19a. *Dianella revoluta* 'DR5000' - Little Rev™ on 20% of ETo in September 2018.

Figure 19b. *Dianella revoluta* 'DR5000' - Little Rev™ on 50% of ETo in September 2018.

Figure 19c. *Dianella revoluta* 'DR5000' - Little Rev™ on 80% of ETo in September 2018.

Figure 20a. Close-up of flowers on *Dietes bicolor* 'African Gold' in July showing rich yellow color with deep brown and orange "eye".

Figure 20b. *Dietes bicolor* ‘African Gold’ on 20% of ETo in July 2018.

Figure 20c. *Dietes bicolor* ‘African Gold’ on 50% of ETo in July 2018. The Pink Knock Out® rose and *Tulbaghia* ‘Ashanti’ in the background.

Figure 20d. *Dietes bicolor* ‘African Gold’ on 80% of ETo in July 2018.

Figure 21a. *Distylium* 'Vintage Jade' in April before irrigation treatments began.

Figure 21b. *Distylium* 'Vintage Jade' on 20% of ETo in October 2018.

Figure 21c. Best specimen of *Distylium* 'Vintage Jade' on 50% of ETo in October 2018. Cooler weather seems to have promoted recovery in this individual.

Figure 21d. *Distylium* 'Vintage Jade' on 80% of ETo in October 2018.

Figure 22a. *Lagerstroemia indica* 'Deleb' - Delta Eclipse™ on 20% of ETo in September 2018.

Figure 22b. *Lagerstroemia indica* 'Deleb' - Delta Eclipse™ on 50% of ETo in September 2018. The occasional plant was tall with little branching; spring or winter pruning could encourage a fuller habit in these particular individuals.

Figure 22c. *Lagerstroemia indica* 'Deleb' - Delta Eclipse™ on 80% of ETo in September 2018.

Figure 23a. *Lagerstroemia* 'Purple Magic' on 20% of ETo in August 2018.

Figure 23b. *Lagerstroemia* 'Purple Magic' on 50% of ETo in August 2018.

Figure 23c. *Lagerstroemia* 'Purple Magic' on 80% of ETo in August 2018.

Figure 24a. *Lomandra fluviatilis* 'ABU7' - Shara™ on 20% of ETo in September 2018.

Figure 24b. *Lomandra fluviatilis* 'ABU7' - Shara™ on 50% of ETo in September 2018.

Figure 24c. *Lomandra fluviatilis* 'ABU7' - Shara™ on 80% of ETo in September 2018.

Figure 25a. *Nandina domestica* 'Sunset Boulevard' on 20% of ETo in September 2018.

Figure 25b. *Nandina domestica* 'Sunset Boulevard' on 50% of ETo in September 2018.

Figure 25c. *Nandina domestica* 'Sunset Boulevard' on 80% of ETo in September 2018.

Figure 26a. *Rosa* 'KORbatam' Winter Sun™ Eleganza® in May before treatments.

Figure 26b. *Rosa* 'KORbatam' Winter Sun™ on 20% of ETo in July 2018.

Figure 26c. *Rosa* 'KORbatam' Winter Sun™ on 50% of ETo in July 2018.

Figure 26d. *Rosa* 'KORbatam' Winter Sun™ on 80% of ETo in July 2018.

Figure 26e. *Rosa* 'KORbatam' Winter Sun™ on 20% of ETo in October 2018.

Figure 26f. *Rosa* 'KORbatam' Winter Sun™ on 50% of ETo in October 2018.

Figure 26g. *Rosa* 'KORbatam' Winter Sun™ on 80% of ETo in October 2018. With more water, blooming and more vibrant foliage last longer into the fall.

Figure 27a. Study of *Rosa* 'Meikokan' Tequila Supreme® blooms in July 2018.

Figure 27b. *Rosa* 'Meikokan' Tequila Supreme® in full bloom in May 2018 before treatments.

Figure 27c. *Rosa* 'Meikokan' Tequila Supreme® in September 2018 showing the tendency to throw "lodged" canes.

Figure 27d. *Rosa* 'Meikokan' Tequila Supreme® on 20% of ETo in September 2018.

Figure 27e. *Rosa* 'Meikokan' Tequila Supreme® on 50% of ETo in September 2018.

Figure 27f. *Rosa* 'Meikokan' Tequila Supreme® on 80% of ETo in September 2018.

Figure 28a. *Rosa* 'Meisentmil' Lemon Drift® in May 2018 before treatment effects.

Figure 28b. *Rosa* 'Meisentmil' Lemon Drift® on 20% of ETo in September 2018. Dried calyces are visible.

Figure 28c. *Rosa* 'Meisentmil' Lemon Drift® on 50% of ETo in September 2018.

Figure 28d. *Rosa* 'Meisentmil' Lemon Drift® on 80% of ETo in September 2018.

Figure 29a. *Rosa* 'Radcon' Pink Knock Out® in April 2018 with first flush of blooms and rich green foliage.

Figure 29b. *Rosa* ‘Radcon’ Pink Knock Out® on 20% of ETo in August 2018.

Figure 29c. *Rosa* ‘Radcon’ Pink Knock Out® on 50% of ETo in August 2018.

Figure 29d. *Rosa* ‘Radcon’ Pink Knock Out® on 80% of ETo in August 2018.

Figure 29d. *Rosa* ‘Radcon’ Pink Knock Out® on 20% of ETo in October 2018, still blooming and with healthy foliage.

Figure 30a. *Tulbaghia* 'Ashanti' in April 2018 before irrigation treatments.

Figure 30b. *Tulbaghia* 'Ashanti' on 20% of ETo in September 2018.

Figure 30c. *Tulbaghia* 'Ashanti' in April 2018 on 50% of ETo in September 2018.

Figure 30d. *Tulbaghia* 'Ashanti' in April 2018 on 80% of ETo in September 2018.

Figure 31a. *Vitex agnus-castus* 'PIIVAC-I'– Delta Blues™ on 20% of ETo in July 2018. All treatments bloomed prolifically in July.

Figure 31b. *Vitex agnus-castus* 'PIIVAC-I'– Delta Blues™ on 20% of ETo in October 2018.

Figure 31c. *Vitex agnus-castus* 'PIIVAC-I'– Delta Blues™ on 50% of ETo in October 2018. Horticulture graduate student Bridget Giffei standing in for scale.

Figure 31d. *Vitex agnus-castus* 'PIIVAC-I'– Delta Blues™ on 80% of ETo in October 2018.

Figure 32a. *Westringia fruticosa* ‘NFL25’ Mundi on 20% of ETo in October 2018.

Figure 32b. *Westringia fruticosa* ‘NFL25’ Mundi on 50% of ETo in October 2018.

Figure 32c. *Westringia fruticosa* ‘NFL25’ Mundi on 80% of ETo in October 2018.

PLANTS IN 50% SHADE

Figure 33a. *Abelia grandiflora* ‘Wevol’ Bella Donna in April 2018 before treatments began.

Figure 33b. *Abelia grandiflora* ‘Wevol’ Bella Donna on 20% of ETo in September 2018.

Figure 33c. *Abelia grandiflora* ‘Wevol’ Bella Donna on 50% of ETo in September 2018.

Figure 33d. *Abelia grandiflora* ‘Wevol’ Bella Donna on 80% of ETo in September 2018.

Figure 34a. *Ceanothus griseus* var. *horizontalis* 'MATCEA01' Highlights™ in April 2018 before treatments.

Figure 34b. *Ceanothus griseus* var. *horizontalis* 'MATCEA01' Highlights™ foliage close up.

Figure 34c. *Ceanothus griseus* var. *horizontalis* 'MATCEA01' Highlights™ on 20% of ETo in September 2018.

Figure 34d. *Ceanothus griseus* var. *horizontalis* 'MATCEA01' Highlights™ on 50% of ETo in September 2018.

Figure 34d. *Ceanothus griseus* var. *horizontalis* 'MATCEA01' Highlights™ on 80% of ETo in September 2018.

Figure 35a. *Illicium parviflorum* 'PIIIP-I' BananAppeal® in April 2018. Plants already showing incompatibility with our soil or climate conditions.

Figure 35b. *Illicium parviflorum* 'PIIIP-I' BananAppeal® on 20% of ETo in September 2018.

Figure 35c. *Illicium parviflorum* 'PIIIP-I' BananAppeal® on 50% of ETo in September 2018.

Figure 35d. *Illicium parviflorum* 'PIIIP-I' BananAppeal® on 80% of ETo in September 2018. This is clearly a high-water use plant in our area.

Figure 36a. *Lomandra longifolia* 'LM300' Breeze™ on 20% of ETo in September 2018.

Figure 36b. *Lomandra longifolia* 'LM300' Breeze™ on 50% of ETo in September 2018.

Figure 36c. *Lomandra longifolia* 'LM300' Breeze™ on 80% of ETo in September 2018.

View of the shade house from midfield in July 2018.