The primary objective of this study was to begin to define irrigation requirements for a range of bermudagrass quality and color ratings during the warm season. The practice of irrigating below optimal conditions, called deficit irrigation, allows soil and turfgrass tissue to gradually dry during the summer. This study was conducted from June to Sept. 2014 and 2015 on 12, 10.0 × 10.0-ft, well-established bermudagrass plots located at CTILT, Cal Poly Pomona. Three irrigation amounts (treatments) were arranged in a RCB design with four replications. Treatments were calculated so that the irrigation during the summer was 100%, 75%, and 50% optimal (100%, 75%, and 50%). Results showed that turfgrass quality and color were significantly affected by irrigation treatment and date during 2014 and 2015. During both years, overall quality and color ratings were greater than 6.0 (acceptable) for the 100% and 75% treatments; the 50% treatment was not lower than 5.7. The ratings from 2015 would have been lower if the study had not been terminated early because of 1.45 inches of precipitation on Sept. 15. Deficit irrigation is a viable water conservation tool. Results from this study indicate that 25% to 50% less irrigation than the optimal can be used during the summer while maintaining acceptable to minimally acceptable bermudagrass. At different locations, results from deficit irrigation would vary because of several factors, such as soil texture and climate.

• Recent legislation sets an overall goal for urban water agencies to reduce per capita water use by 20% by Dec. 31, 2020.

• Landscape water use has the greatest potential for water conservation of all urban water use sectors, because it accounts for approximately 30% to 50% of total urban water use. Bermudagrass is commonly used on golf courses, sports fields, lawns, and parks.

• The practice of irrigating below optimal (standard) conditions, called deficit irrigation, allows soil and turfgrass tissue to gradually dry during the summer, because the amount of irrigation is less than the irrigation water requirement.

• Depending on the degree of deficit, bermudagrass can continue to provide satisfactory turfgrass quality during the entire warm season. Because there is a trend for deficit irrigation, the question becomes what is the minimum irrigation amount needed to maintain acceptable turfgrass quality for the entire warm season or the amount if lower turfgrass quality is suitable for varying periods of time.

• The primary objective of this study was to begin to define irrigation requirements for a range of bermudagrass visual quality and color ratings during the warm season (average rating for entire warm season ranges from 4 to 7). Ratings are species specific and are on a 1 to 9 scale: (1 = dead/brown; 5 = minimally acceptable; 6 = acceptable; 9 = best).

• This study was conducted from June to Sept. 2014 and 2015 on 12, independently irrigated, 10.0 × 10.0-ft, well-established GN-1 hybrid bermudagrass plots located at CTILT, Cal Poly Pomona. The soil texture is a sandy clay loam, and the irrigation source is a good recycled water.

• Three irrigation amounts (treatments) were arranged in a randomized complete block design with four replications. Treatments were calculated so that the irrigation during the summer was 100%, 75%, and 50% optimal (100%, 75%, and 50%).

• Each week, irrigation amount for each plot was calculated and programmed into the irrigation controller. These calculations were based on several factors: previous 7-d CIMIS ETo; 100%, 75%, and 50% ETmopt; and an extra water factor for each plot, based on DUs of irrigation system and a scheduling multiplier.

• Routine measurements during the study included visual turfgrass quality and color ratings using a 1 to 9 scale (see above).