COMPARISON OF RECLAIMED AND POTABLE WATER FOR TURFGRASS IRRIGATION

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Experimental test plots were established at three sites in the greater San Diego area in 1992 to compare the use of reclaimed water with potable water for turfgrass irrigation purposes. The experiments are located at the Torrey Pines Golf Course in La Jolla, the Eastlake Development in Chula Vista, and the Whispering Palms Water Pollution Control Facility at Fairbanks Ranch.

Each site contains two independent experiments designed for both cool season and warm season turfgrass types due to differences in the water requirements and cultural practices of the two turf types. In the cool season turfgrass experiments, response of tall fescue is compared to that of a bluegrass/ryegrass blend and in the warm season experiments, response of bermudagrass is compared to that of kikuyugrass.

Water treatments consist of potable and reclaimed water and are located side by side in each replicated experiment to minimize the influence of spacial variability commonly found in soils.

Two soils, Diablo clay topsoil and exposed heavy sandy loam subsoil, are being compared at the Eastlake site. The effect of irrigation frequency is being studied at the Torrey Pines site. These treatments are frequent irrigation (six days per week) and infrequent irrigation (two to three days per week) with equal amounts being applied in each regime.

The turfgrass research test plots have been receiving irrigation treatments for approximately one year at the Torrey Pines and Eastlake sites and for approximately eight months at the Whispering Palms site. The latter part of 1992 represented the turfgrass establishment period. During this time water applications exceeded the calculated evapotranspiration (ET) requirements of the turfgrass species. For the 1993 irrigation season, irrigation applications corresponded to calculated ET at the three sites. Since treatments began, approximately 25 to 50 percent more salts have been applied to reclaimed water treatments due to the higher salinity of these waters.

As of July 1993, there are few statistically significant differences due to water or irrigation frequency treatments seen at any site with regard to soil analyses and turfgrass performance. Significant differences have been observed between tall fescue and blue/rye turfgrasses and between bermuda and kikuyu turfgrasses at all sites. Differences seen, although statistically significant, are not relevant in magnitude and are not consistent through sampling and evaluation dates. However, consistent differences are seen in soil constituents and turfgrass performance between the different soil types at the Eastlake site.

Turfgrass at all sites is acceptable in quality and would be suitable for park, golf fairway, or residential yard applications. After less than one year of irrigation treatments, significant differences due to water type (reclaimed versus potable) are not expected and have not been observed. Evaluations of soil analyses and turfgrass performance towards the end on 1993 and during 1994 may reveal differences between water treatments in the long term.