

## **Stop #7a: How Much Water Does a Lawn Need?**

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### **Objectives:**

The primary objective is to quantify the amount of water required to keep lawngrass green and functional in California. Warm-season turf species are known to be more water use efficient and drought tolerant than cool-season turfgrasses; nevertheless, tall fescue remains the predominant species used in California lawns. We hypothesize that proper selection of grasses regionally would minimize irrigation requirements to approximately 30% of estimated evapotranspiration (ET).

### **Materials and Methods:**

Three species were sodded at UCR on 24 August 2015: 'Tifway II' bermudagrass, 'West Coaster' tall fescue, and 'Platinum' seashore paspalum. Four 8' x 6' plots were created per grass species and subsequently split into high (4 lb N/M/year) and low (2 lb N/M/year) fertility. Plots are mowed weekly or biweekly at 2 (warm-season species) or 3 (tall fescue) inches using a rotary mower. Clippings are collected. Starting on 16 May 2016, plots are evaluated twice a week for turf quality, NDVI and digital image analysis. Irrigation occurs on an individual experimental unit basis. For example, if one experimental unit of even just one replication has < 50% green cover, or not sufficient visual quality, it alone receives irrigation. All plots are hand-irrigated using an in-line flow meter (Sotera 850) with water quantity measured and reported for each event. Irrigation is based on previous week  $ET_0$  as determined by an on-site CIMIS station.

### **Results:**

Starting on 16 May 2016, and until 26 August 2016, bermudagrass needed 12.5 inches of water to sustain acceptable quality, and was the grass the required the least amount of water; seashore paspalum was irrigated with 14 inches of water, and lastly, tall fescue received 19.75 inches. No grasses showed improved drought tolerance with high or low fertility levels. Results confirm that conversion from tall fescue to warm-season species is the most important water conservation strategy for California lawns.

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Seashore Paspalum

2 lb N/M/year	2 lb N/M/year
4 lb N/M/year	4 lb N/M/year

4 lb N/M/year	2 lb N/M/year
2 lb N/M/year	4 lb N/M/year

Tall Fescue

4 lb N/M/year	2 lb N/M/year
2 lb N/M/year	4 lb N/M/year

4 lb N/M/year	4 lb N/M/year
2 lb N/M/year	2 lb N/M/year

Bermudagrass

4 lb N/M/year	2 lb N/M/year
2 lb N/M/year	4 lb N/M/year

2 lb N/M/year	4 lb N/M/year
4 lb N/M/year	2 lb N/M/year