

Stop #8: Leaching Requirements for Turfgrass Salinity Management and Water Conservation

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The purpose of this research is to help develop new guidelines and recommendations regarding the irrigation of turfgrass with saline water based on actual turf response under varying irrigation regimes. These recommendations can potentially lead to significant reductions in water use on golf courses and other turf areas where salinity management is a concern. Furthermore, we want to obtain a better understanding of plant-soil-microbial interactions under stress conditions, thereby providing valuable information regarding salinity and drought tolerance in plants.

Soil:	Hanford fine sandy loam
Plot Size:	12 main plots (each 30' x 30'); overall plot area is 10,800ft ²
Species:	Perennial ryegrass 'SR 4550'
Seeding Date:	28 April 2011
Fertility:	0.5 lb N/1000 ft ² /month
Mowing Height:	2.5 inches; twice weekly
Irrigation Regimes:	140, 120, 100 and 80% ET _o (replacement based on CIMIS data from previous week)
Saline/Deficit Irrigation:	Initiated on 21 July 2011 at EC = 4.2 dS/m, SAR = 6.83

Take Home Messages:

- ✓ Turfgrass quality was maintained with minimal turf loss during the first six months under the study parameters.
- ✓ However, after one year irrigating with high saline water (4.2 dS/m), turfgrass quality has declined substantially with 50% cover remaining on turf irrigated at 140% ET_o, 10-20% at 120 and 100% ET_o, and no living turf at 80% ET_o.
- ✓ As saline and drought conditions worsened, dry clipping yields have declined with currently minimal growth across all irrigation regimes.

Notes: