

# Nitrogen Losses from Warm-season Turfgrasses During Establishment

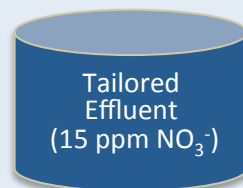
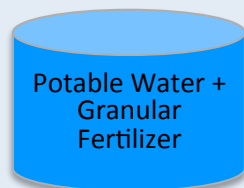
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## Objectives:

1. To determine the effect of tailored water (treated effluent with 15 ppm NO<sub>3</sub>-N) on establishment of three turfgrasses
2. To investigate nitrate leaching potential from turfgrass rootzones irrigated with tailored water
3. To determine gaseous losses (N<sub>2</sub>O) from turfgrass stands irrigated with tailored water

## Scope:

- Three warm-season grasses: bermudagrass [*Cynodon dactylon* (L.)], buffalograss [*Buchloe dactyloides* (Natt.) Eng.], and inland saltgrass [*Distichlis spicata* (L.) Greene]
- Two water treatments:



## Data Collection:

- Nitrate leachate (suction lysimeters)
- Nitrous Oxide (GC)
- Coverage (pictures)
- Biomass (clippings, roots)



# Results and Conclusions

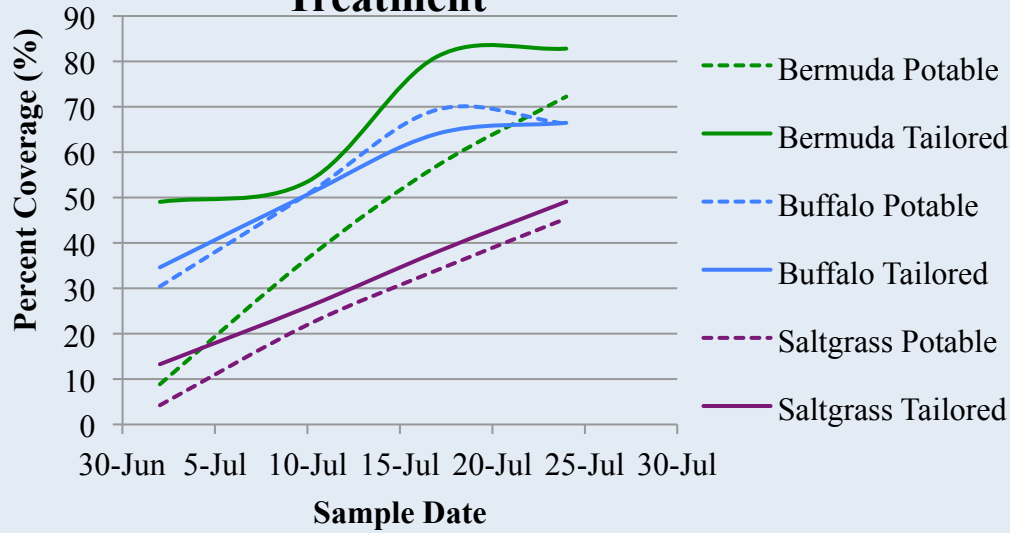
## Nitrate:

- With increasing turfgrass establishment, nitrate concentrations in the leachate decreased at 10 cm and 50 cm

## EC:

- Higher salinity of tailored water did not affect the establishment rate of the grasses

## Establishment Based on Irrigation Treatment



Bermudagrass irrigated with potable water + granular fertilizer (top row) and with tailored water (bottom row). The photos were taken on the 31st day after seeding.



## Nitrous Oxide:

- All samples below the detectable limit of 0.01% (100 ppm)
- Grass stands in our experiment (greenhouse) did not release significant amounts of nitrous oxide during establishment

## Coverage and Nitrate-N leaching:

- Bermudagrass irrigated with tailored water established faster than with potable water
- Slow establishment of inland saltgrass resulted in more nitrate leaching