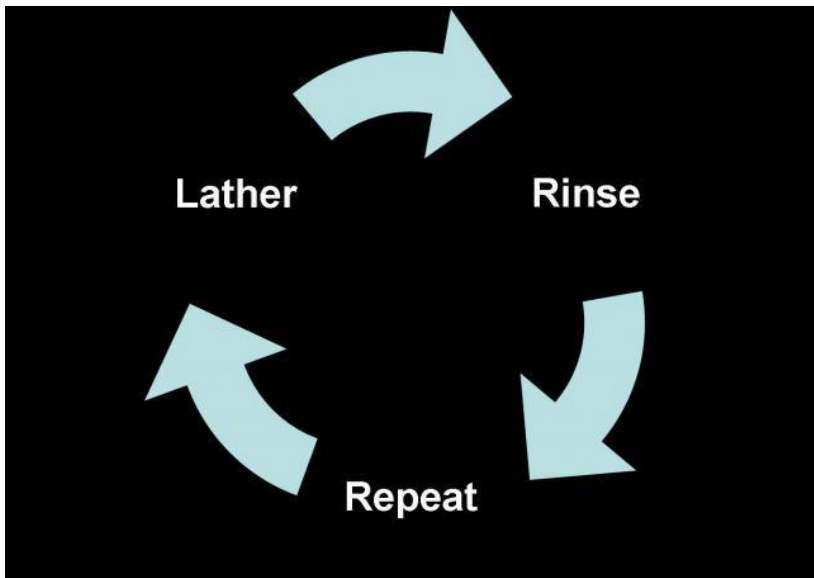


Graminicide Development for Aquatic Invasive Grass Control in Florida



Stephen F. Enloe – University of Florida Center for Aquatic and Invasive Plants
Michael D. Netherland – US Army ERDC, Gainesville, FL

Aquatic invasive grass management summed up in 4 pics



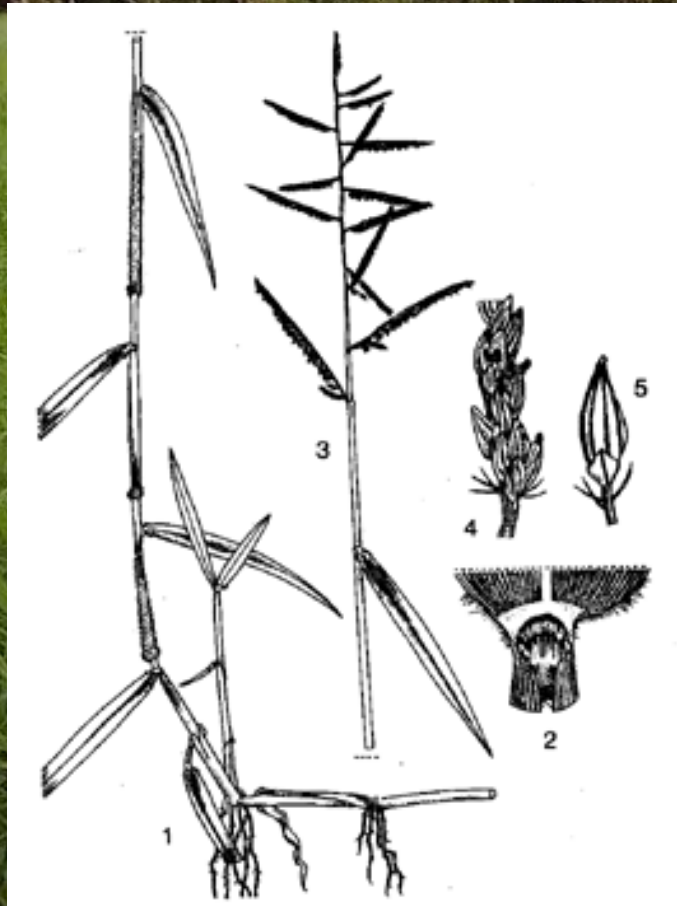
Torpedograss (*Panicum repens*)



UGA5308042

5349041

Paragrass (*Urochloa mutica*)



A satellite map of the state of Florida, showing its coastline and surrounding waters. Six yellow circular markers with blue outlines are placed on the map to indicate specific locations: one in the northern part of the state, one in the central panhandle, one in the central peninsula, one in the southern peninsula, one in the southwest, and one in the southeast.

SPONSORS

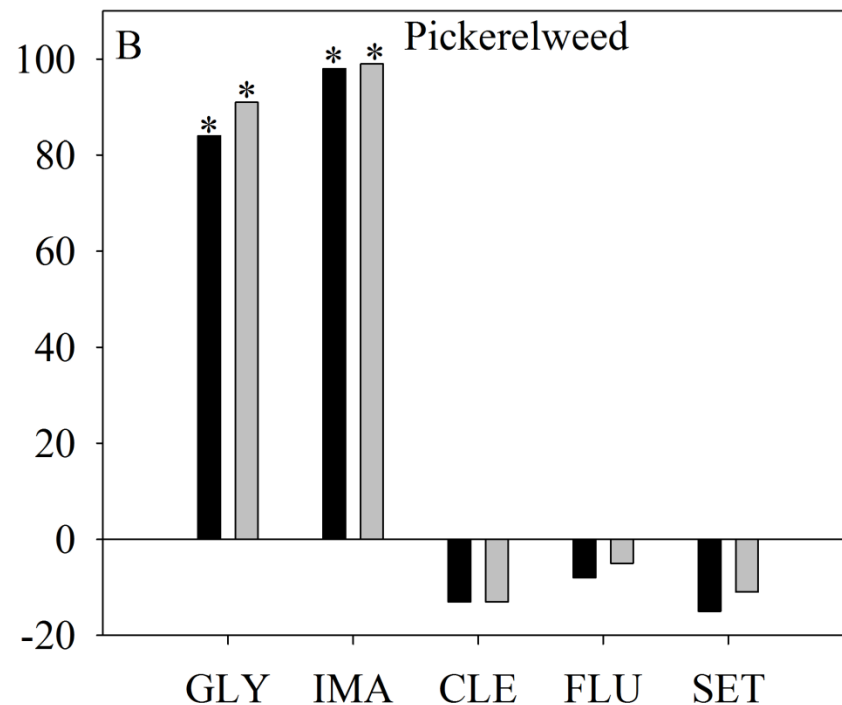
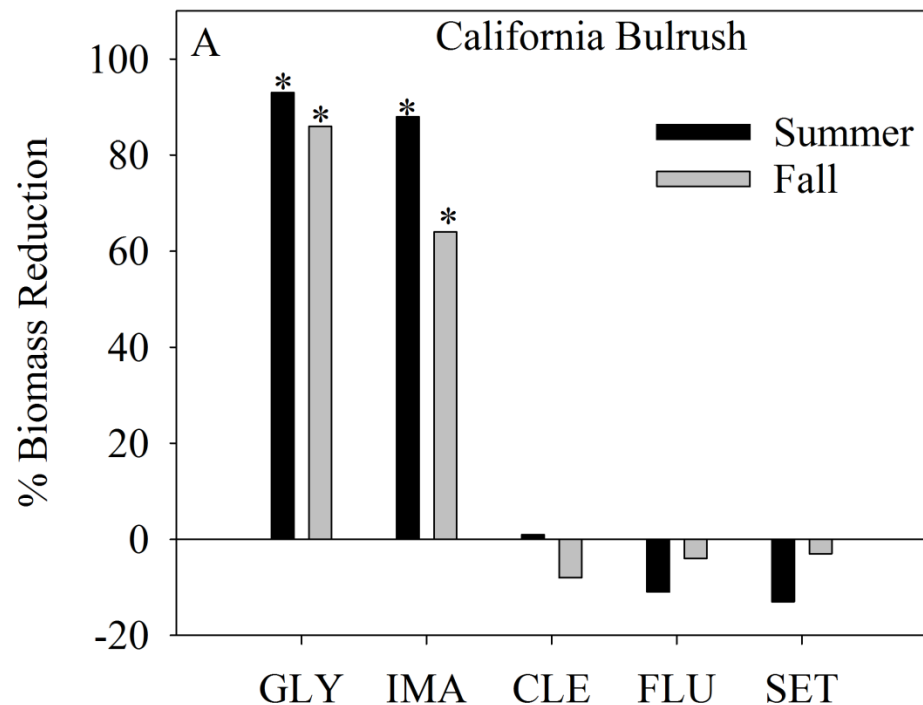
- US Army Corp of Engineers ERDC
- Florida Fish and Wildlife Conservation Commission
- South FL Water Management District
- SePRO
- Syngenta

Herbicides tested in mesocosm studies for emergent selectivity

- Sethoxydim
- Clethodim
- Fluazifop-p-butyl
- Glyphosate
- Imazapyr

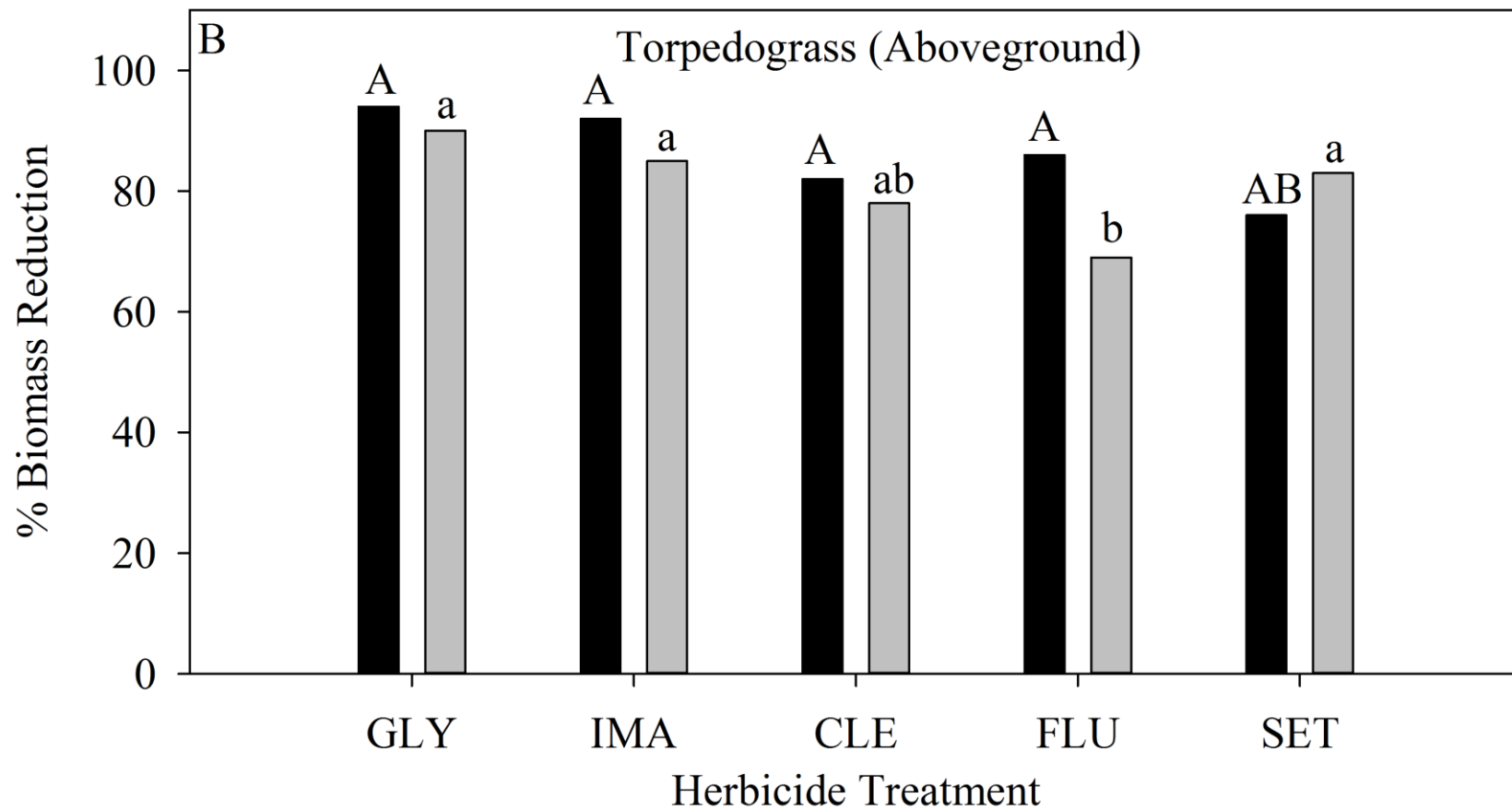


Enloe SF, Netherland MD (2017). Evaluation of three grass-specific herbicides on invasive torpedo grass and seven non-target aquatic plants.
J. Aquat. Plant Manage. 55:65-70



Similar Results Across Multiple Species

California bulrush [*Schoenoplectus californicus* (C.A. Mey.) Palla]
 Knotted spikerush [*Eleocharis interstincta* (Vahl) Roem. & Schult.]
 Gulf Coast spikerush (*Eleocharis cellulosa* Torr.)
 Broadleaf cattail (*Typha latifolia* L.)
 Pickerelweed (*Pontederia cordata* L.)
 Broadleaf arrowhead (*Sagittaria latifolia* Willd.)



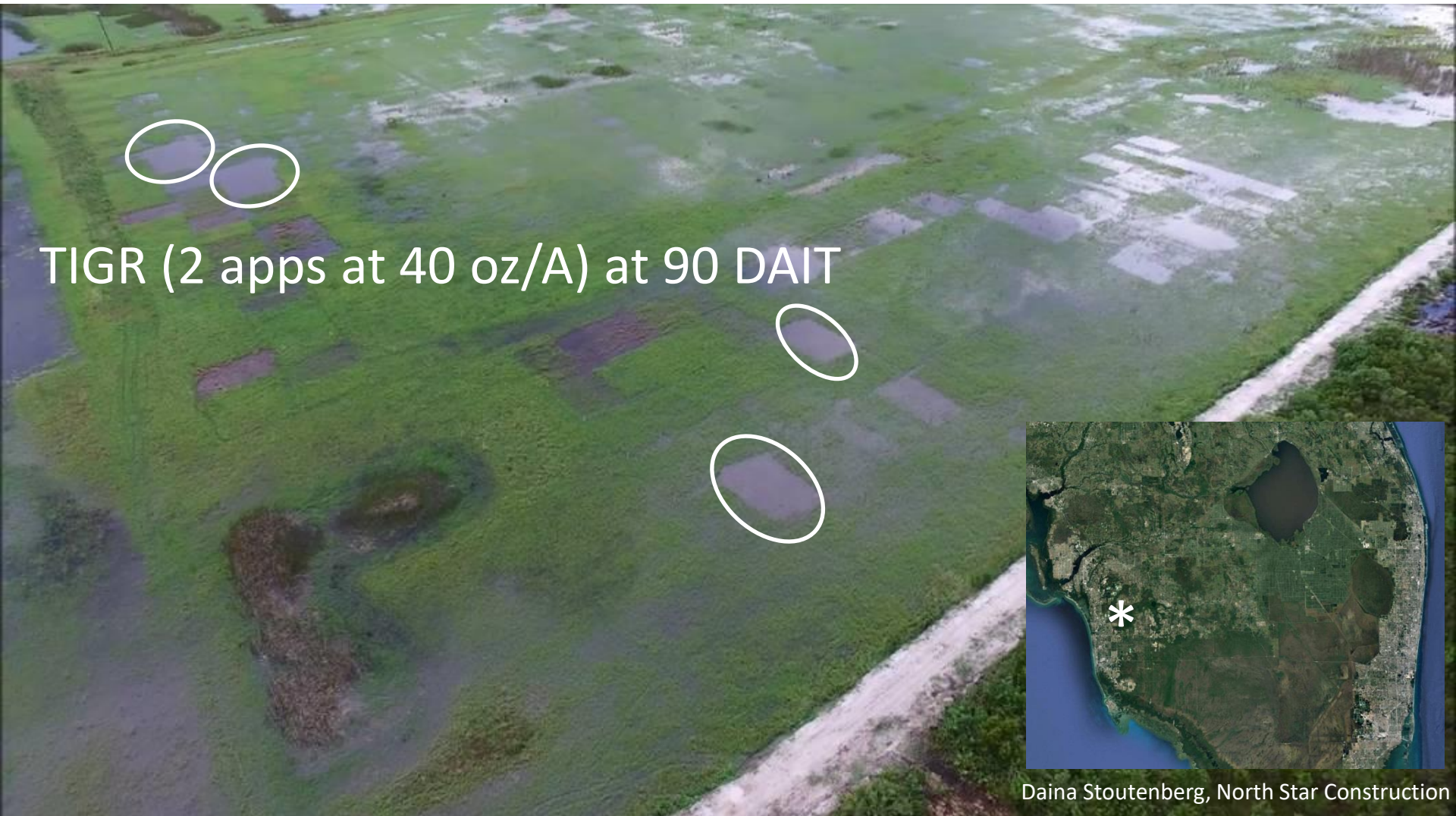


Lakeside Ranch STA, Okeechobee, FL
Sethoxydim (TIGR 5% v/v) at 35 DAT

09/08/2015



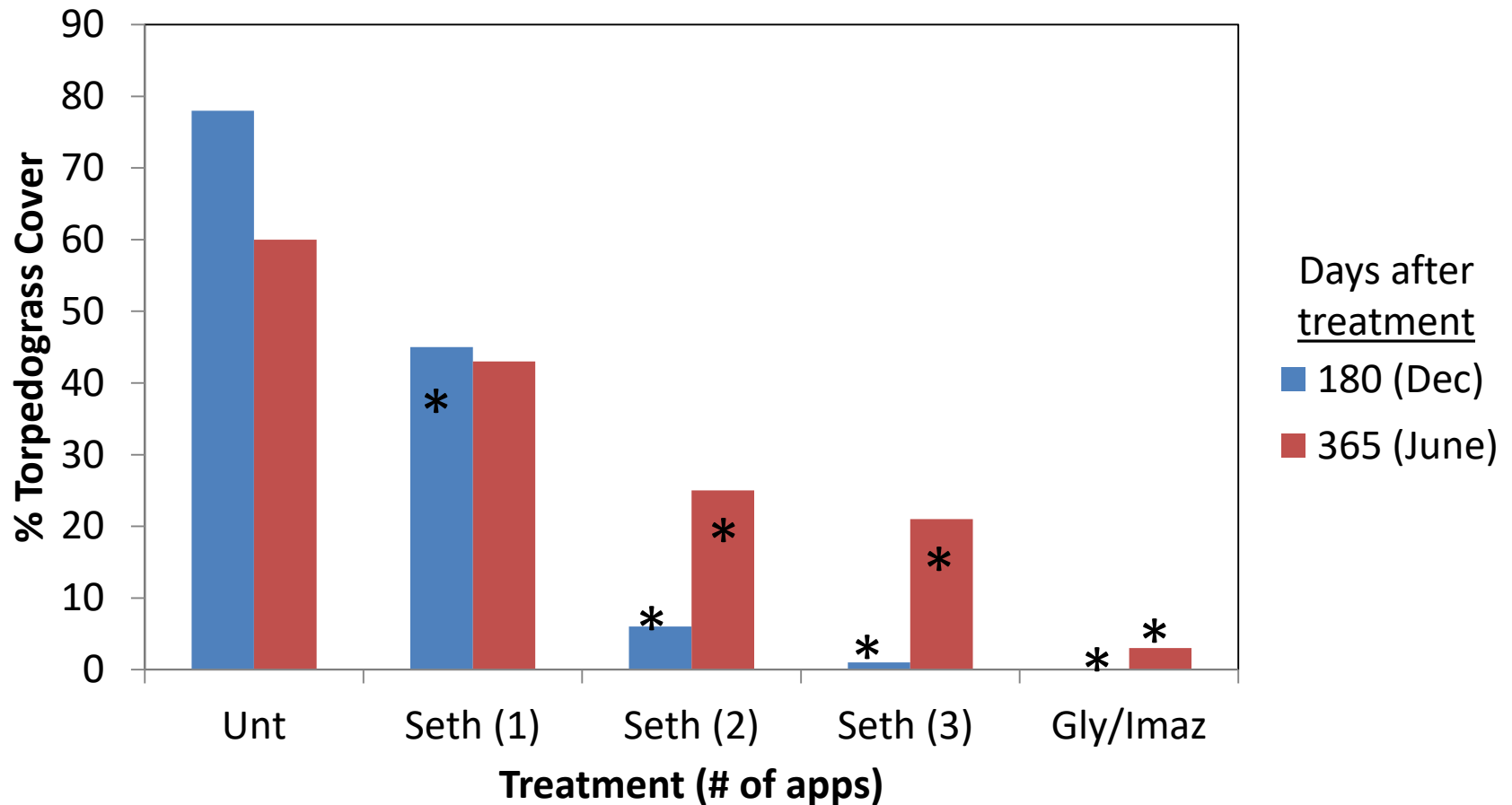
Bonita Springs sethoxydim sequential application study



Sethoxydim Sequential Treatment (2 apps at 40 oz/A) in late May and Mid June (90 DAIT)



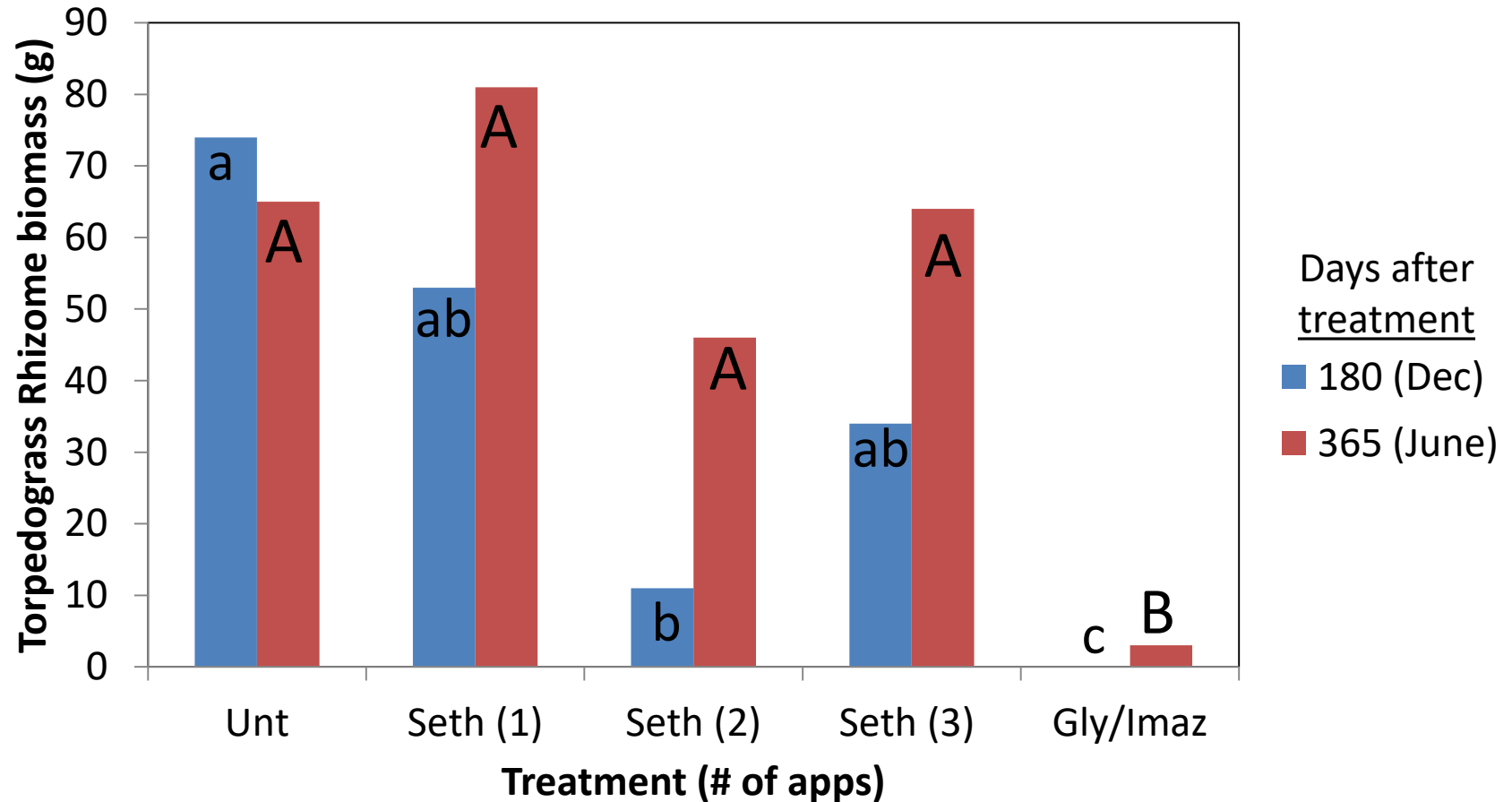
Bonita Springs Sethoxydim Sequential Application Study



*An asterisk denotes that the mean differs from the untreated check at the 5% level using Dunnett's adjustment within sample dates

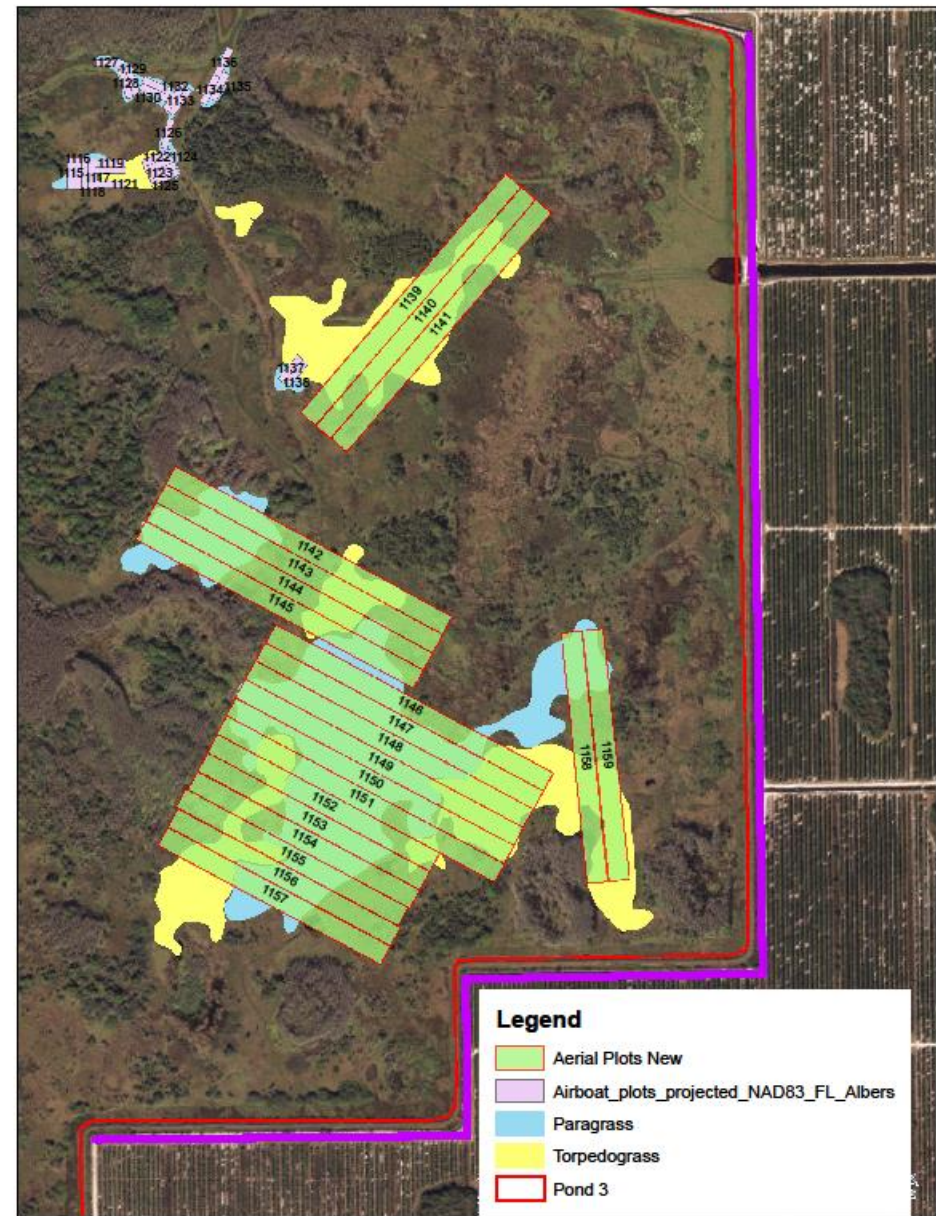


Bonita Springs Sethoxydim Sequential Application Study

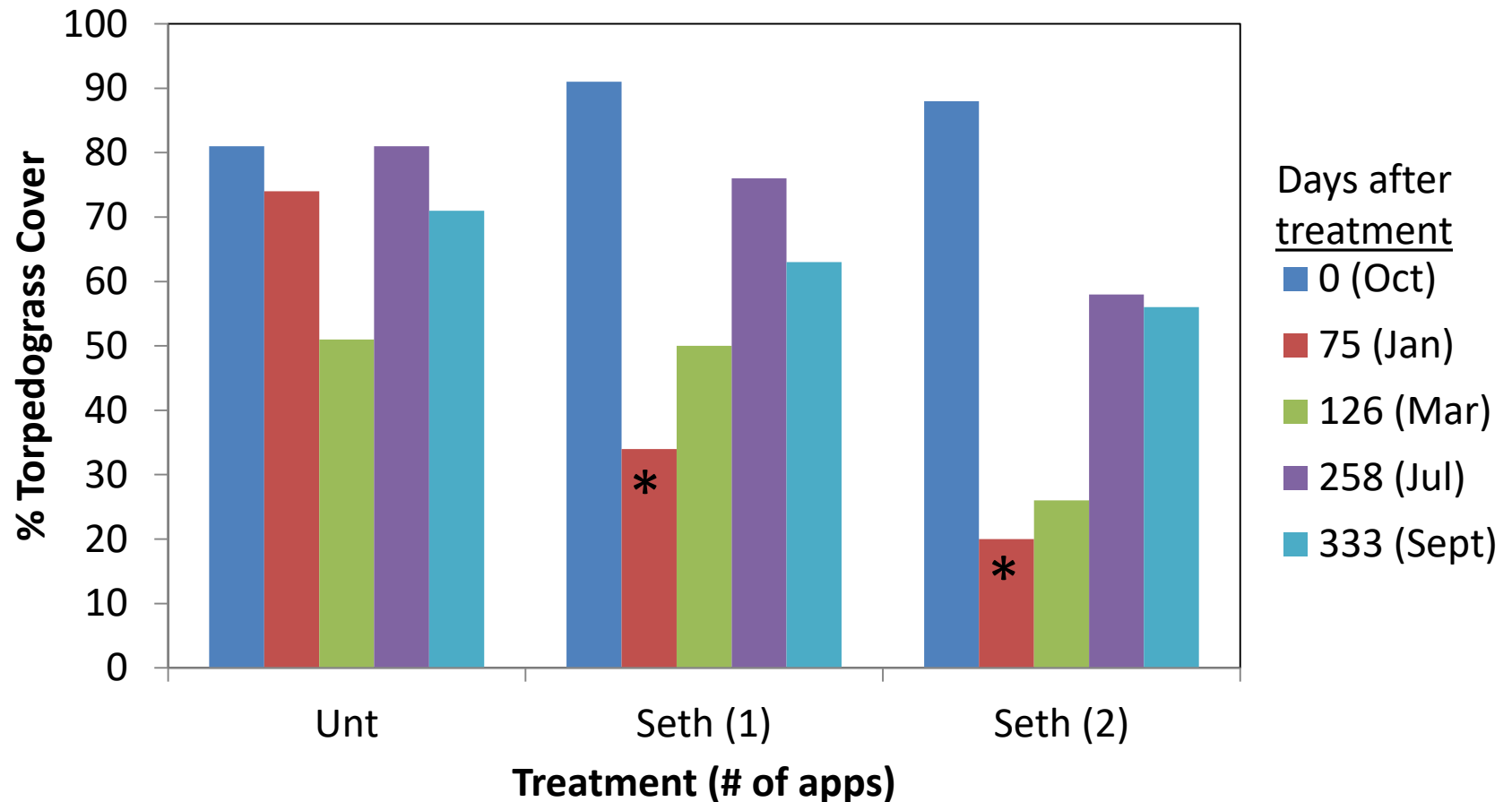


*Treatment means within sample dates followed by the same letter are not different ($p=0.05$).

C-139 Annex (SFWMD) aerial sequential app study

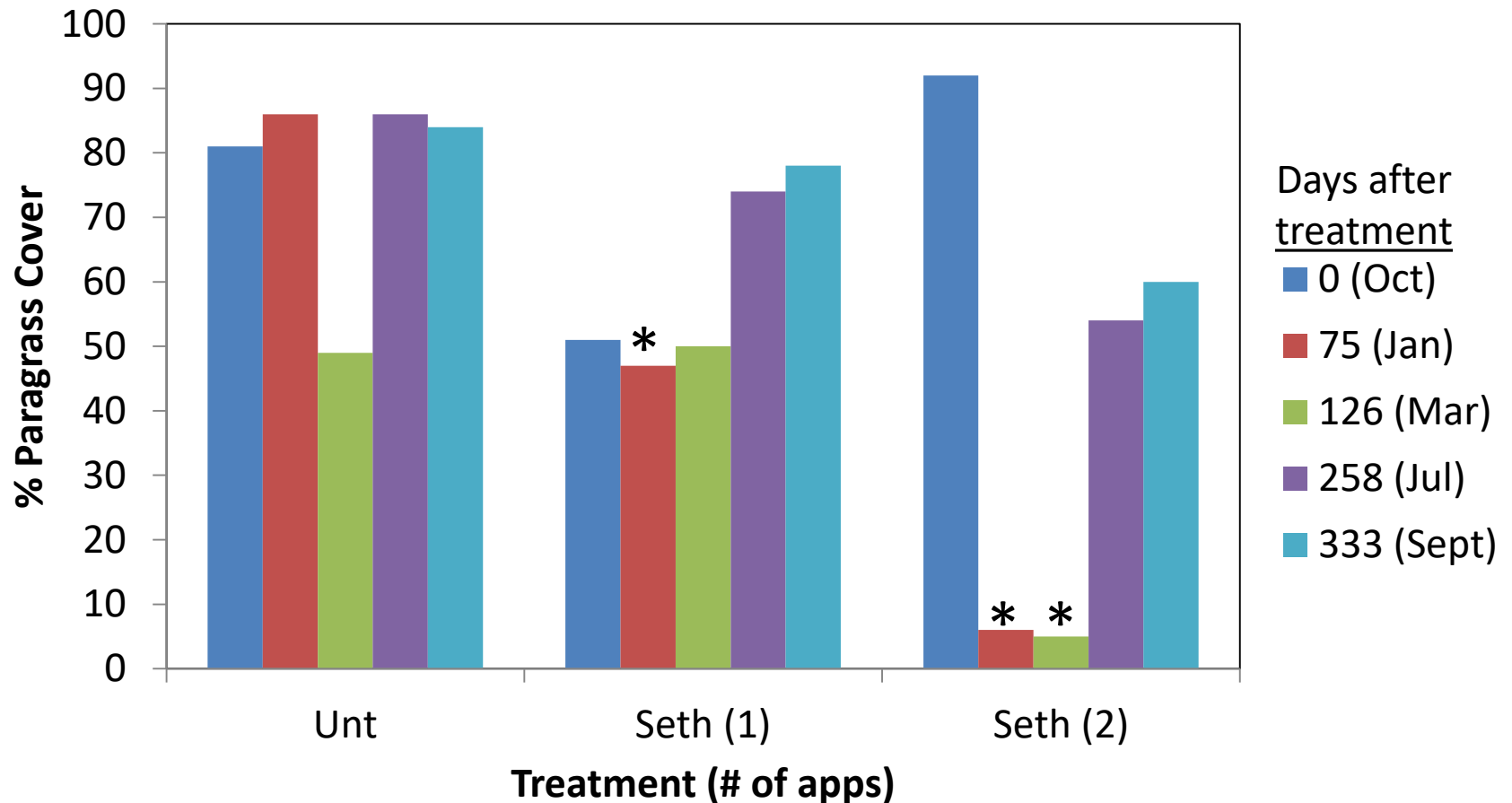


C-139 Aerial Torpedo/Paragrass Study



*An asterisk denotes that the mean differs from the untreated check at the 5% level using Dunnett's adjustment within sample dates

C-139 Aerial Torpedo/Paragrass Study



*An asterisk denotes that the mean differs from the untreated check at the 5% level using Dunnett's adjustment within sample dates

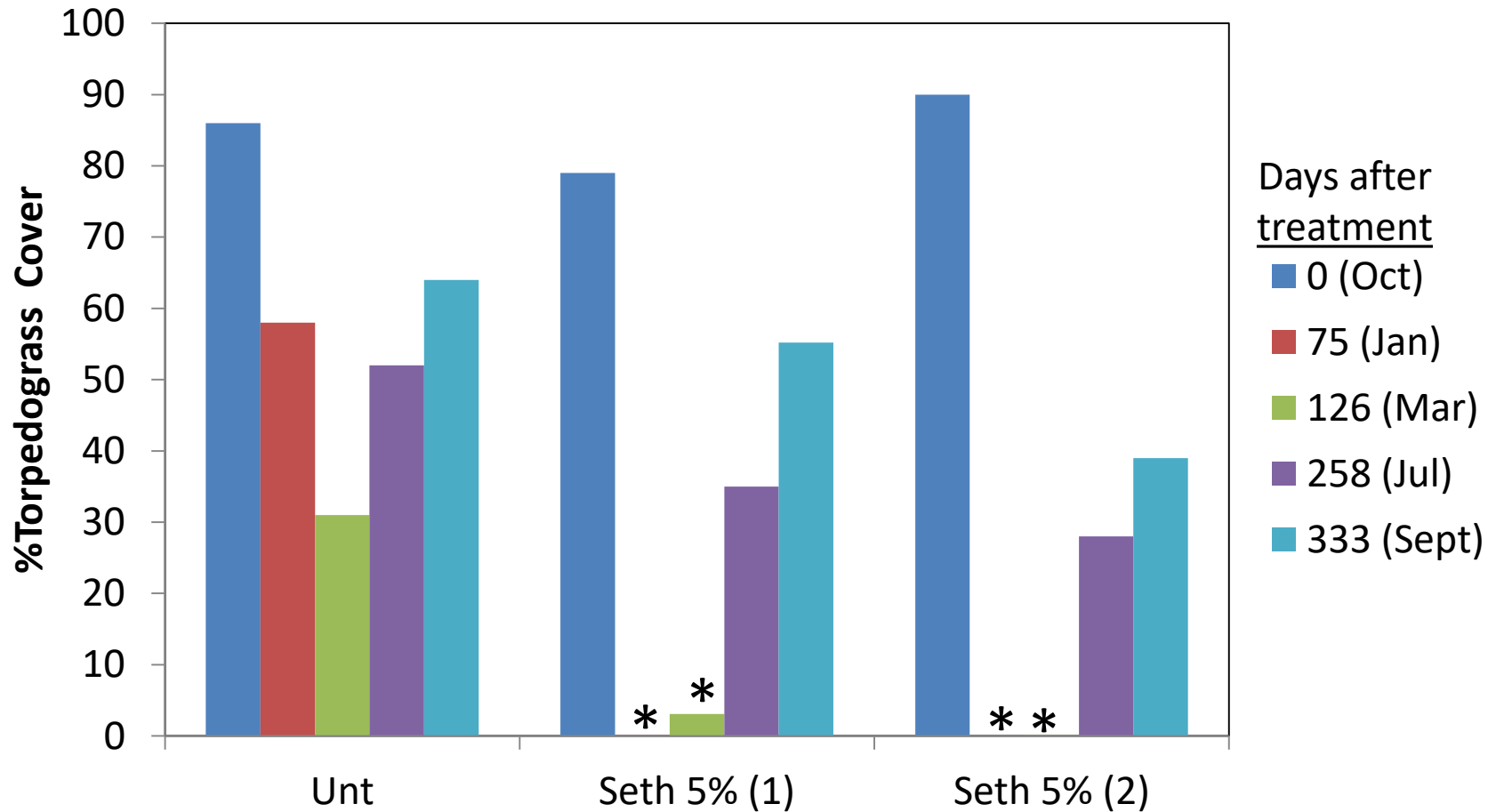
C-139 Annex aerial sequential app study (258 DAT)



Glyphosate+Imazapyr

Untreated

C-139 Airboat Torpedograss Study



*An asterisk denotes that the mean differs from the untreated check at the 5% level using Dunnett's adjustment within sample dates

Airboat Spot Treatment

TIGR 5% (1 app) @ 126 DAT (March)



Untreated

Treated

Airboat Spot treatment TIGR 5% (1 app) @ 258 DAT (July)



Airboat Spot Treatment Glyphosate + Imazapyr @ 258 DAT (July)



Summary

- Sethoxydim will be an “increasingly technical” treatment for managers
 - Excellent selectivity
 - Seasonality and hydroperiod influence efficacy
 - Some negative impact on rhizomes
-
- FL 24(c) for sethoxydim (TIGR herbicide, SePRO)
 - FL-Experimental Use Permit (EUP) 2016-2017 for fluazifop-p-butyl (Syngenta)

Questions?



sfenloe@ufl.edu