

# Topramezone Weed Control Efficacy and Safety in Warm- and Cool-Season Turfgrasses

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## Introduction

Topramezone, Pylex™ herbicide, is labeled for postemergence control of broadleaved and grass weeds in select turfgrass species. Following application to the foliage of susceptible species, it is rapidly absorbed and then translocated to the growing points. It inhibits the hydroxyphenylpyruvate dioxygenase (HPPD) enzyme affecting carotenoid biosynthesis in plants. Susceptible annual and perennial grass species exhibit severe chlorosis or bleaching of leaves.

In the desert southwest United States, warm-season bermudagrass (*Cynodon* spp) is predominately used on golf course fairways, tees, and most greens as well as in sports facilities and residential/commercial landscapes during the summer. Goosegrass (*Eleusine indica*) is becoming more of a problem weed during the summer in the bermudagrass turf. Many summer annual grass weeds with goosegrass among them are listed to be effectively controlled by topramezone. Bermudagrass and creeping bentgrass (*Agrostis palustris*) are perennial grass weeds that are listed to be controlled or suppressed on the Pylex label.

Also in the southwest U.S. at higher elevations, creeping bentgrass is typically used on golf course greens. Kentucky bluegrass (*Poa pratensis*) and perennial ryegrass (*Lolium perenne*) mixes are also used for collars surrounding greens or entirely on tees and fairways. Bermudagrass commonly is a weed when it encroaches on to the bentgrass greens from collars or into the collars from surrounding desirable bermudagrass. During the summer at the higher elevations, bermudagrass invades cool-season turf fairways and tees.

Field trials were conducted to evaluate and determine the efficacy and selectivity of topramezone against goosegrass in bermudagrass turf. Also, the efficacy of topramezone against bermudagrass and safety in cool-season turfgrasses was evaluated.

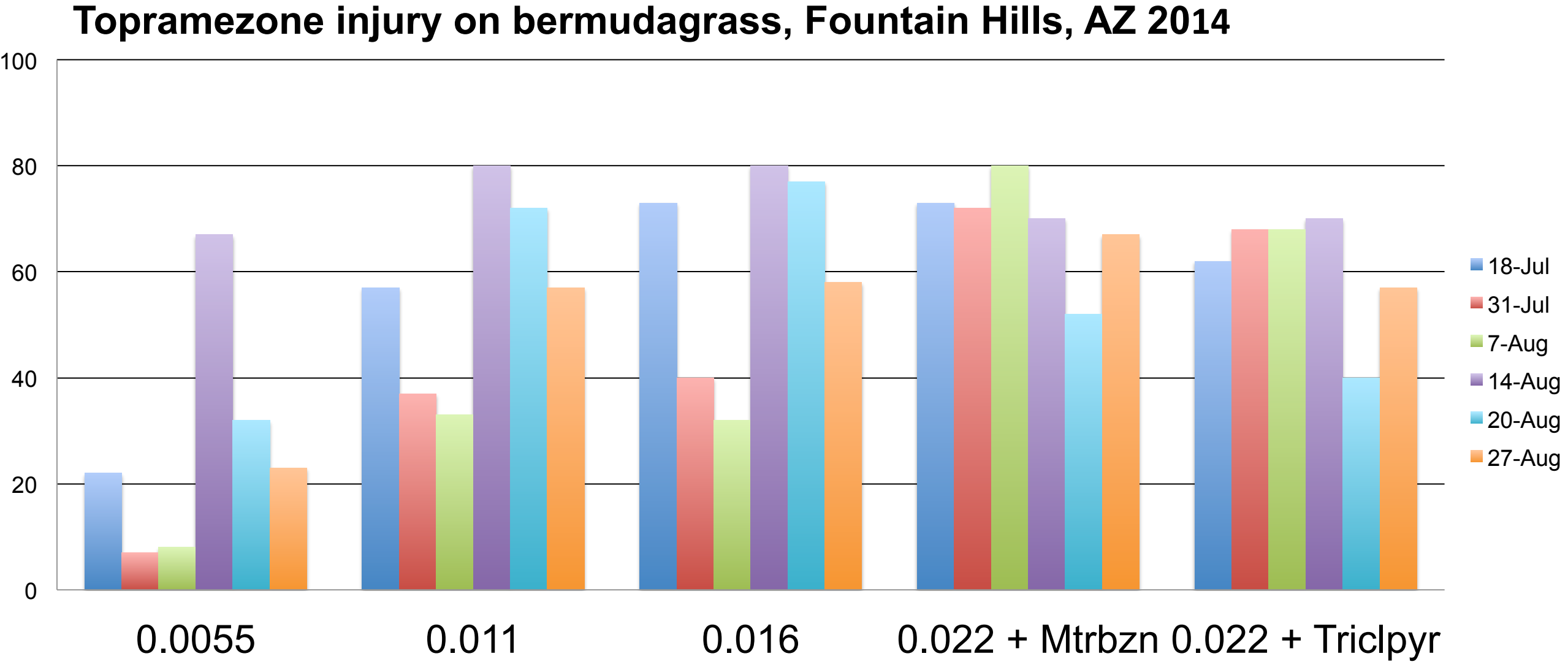
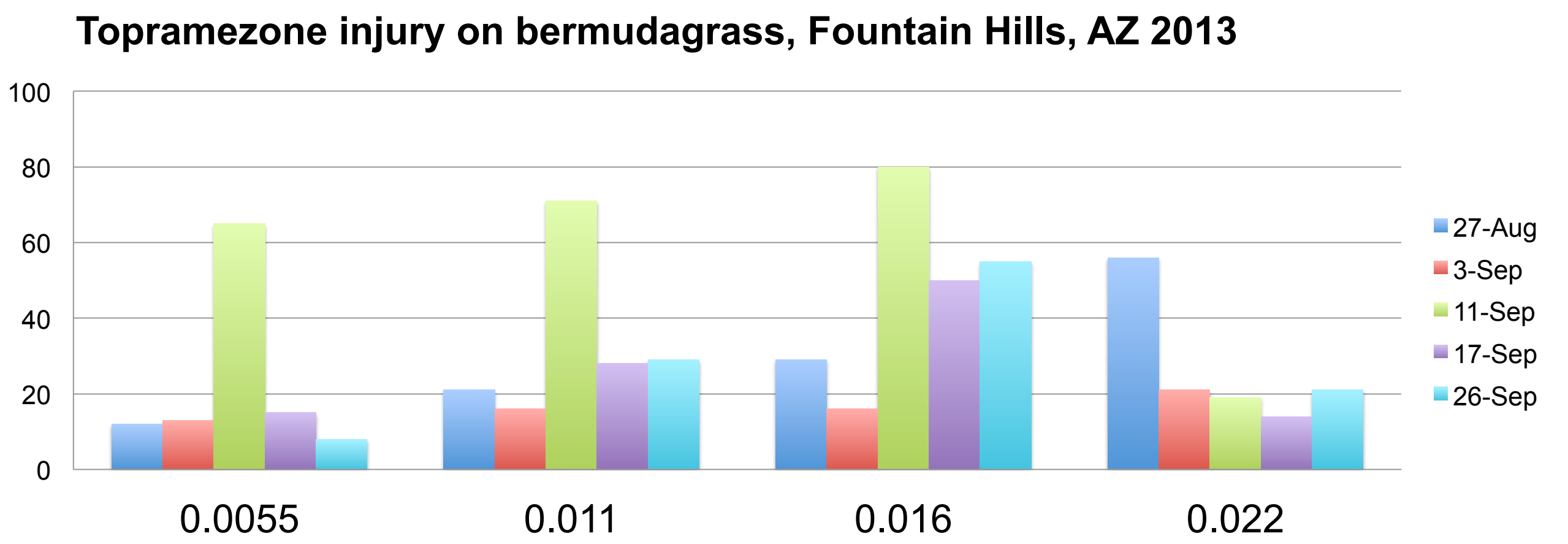
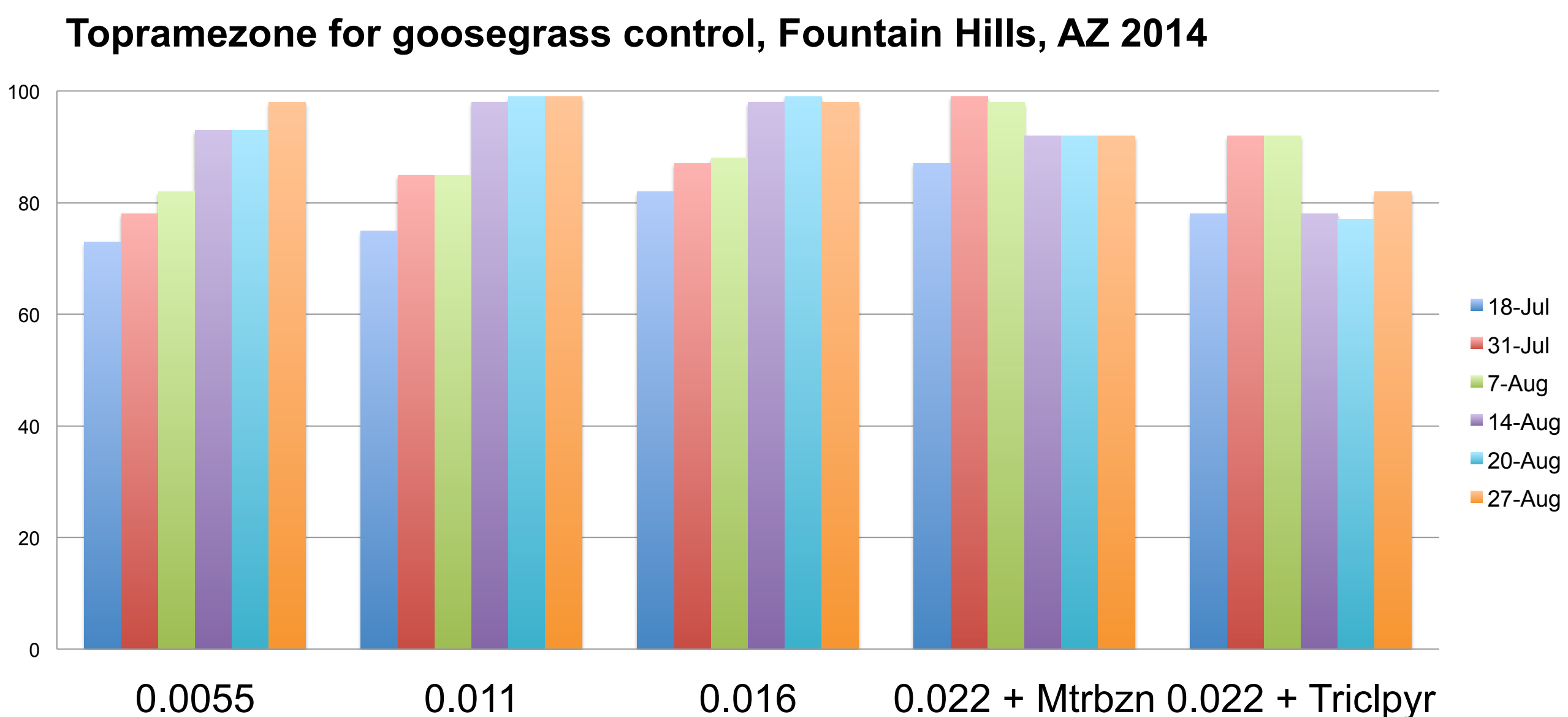
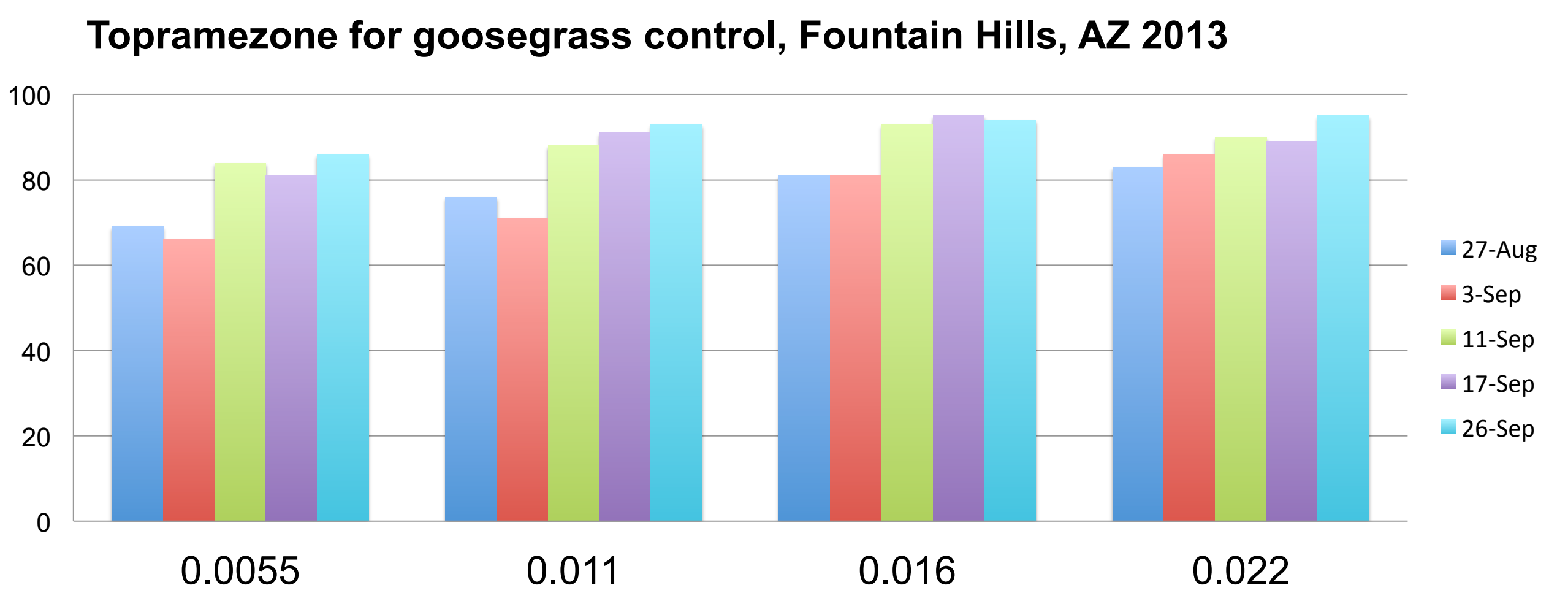
## Materials and Methods

Two small plot experiments were conducted on a golf course in Fountain Hills, AZ in 2013 and 2014 to evaluate efficacy of topramezone at 0.0055, 0.011, 0.016, and 0.022 lb a.i./A against goosegrass in a bermudagrass rough area adjacent to a fairway. Treatments were applied with a backpack sprayer with a hand-held boom over plots measuring 5 ft x 10 ft and replicated 3 or 4 times in a RCBD. A modified vegetable oil, Hasten was added to the sprays. Applications were initiated on 13 August 2013 on maturing goosegrass and with sequential applications of 3 lower rates on 03 September. Sprays were made on 11 July 2014 on less mature goosegrass then sequential applications of 3 lower rates alone were on 07 August.

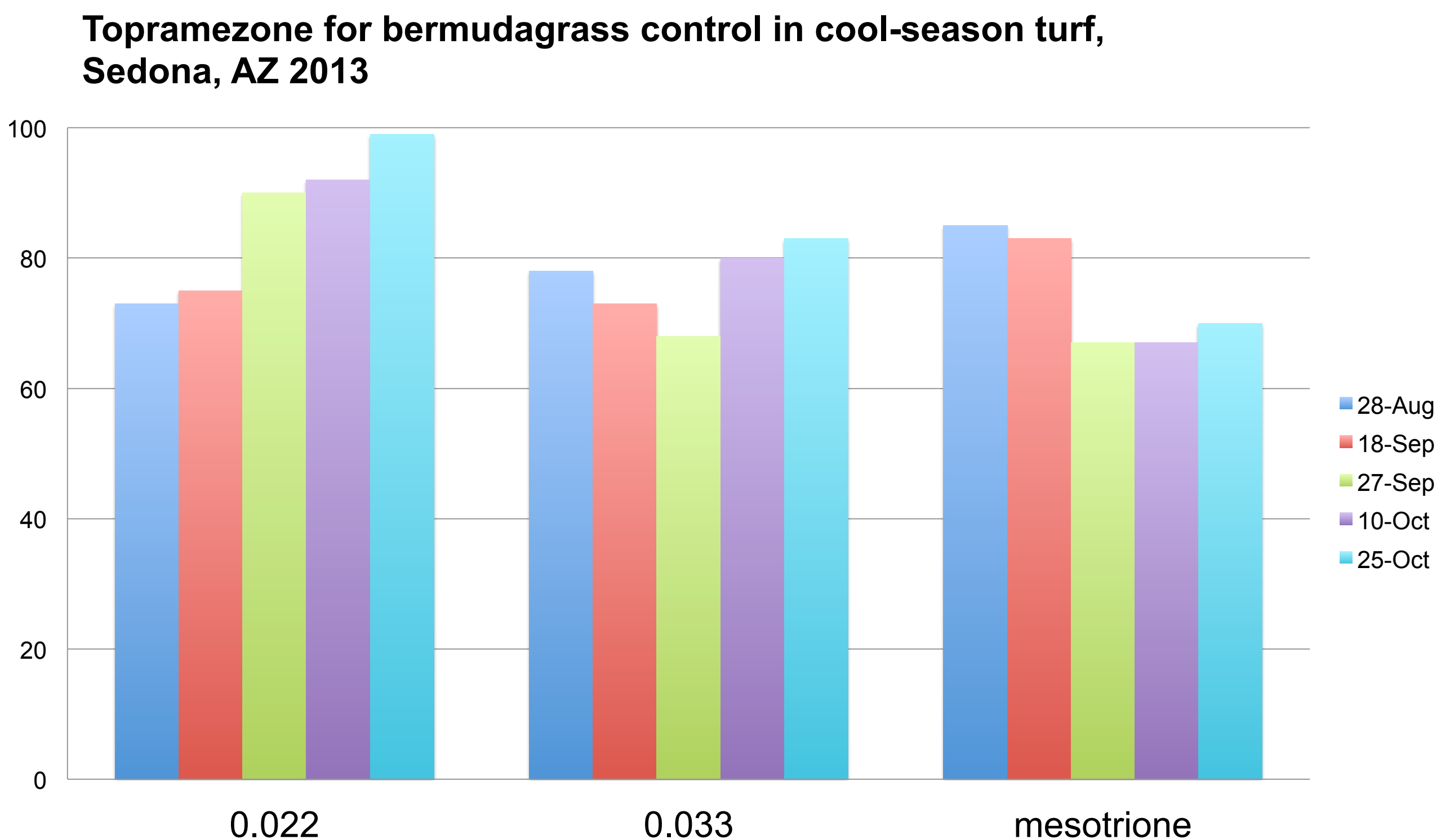
Several experiments were conducted during fall 2013, spring 2014, and fall 2014 to remove bermudagrass from cool-season turfgrasses. In Sedona, AZ, a golf course fairway with a mix of Kentucky bluegrass, annual bluegrass, perennial ryegrass, and creeping bentgrass was infested with bermudagrass. Topramezone at 0.022 lb a.i./A was applied 3 times and at 0.033 lb a.i./A was applied twice during August – September 2013 at 3 week intervals. In Scottsdale, AZ, a practice bentgrass (cv. SR-1020) green infested with bermudagrass was treated with 3 sequential applications of topramezone at 0.011, 0.022, and 0.033 lb a.i./A on 15 April, 05 and 27 May 2014. In Wickenburg, AZ, the collar surrounding a green was composed of Kentucky bluegrass and perennial ryegrass with bermudagrass encroaching into and through it onto a bentgrass green. Topramezone at 0.022 lb a.i./A was applied 3 times and at 0.033 lb a.i./A was applied twice during April – May 2014 at 3 week intervals. Plot size varied for the experiments and all were replicated three times in a RCBD. A backpack sprayer was used and the spray gallonages varied from 36 to 50 gpa water with Hasten included.

## Results

### Goosegrass control experiments.



### Bermudagrass control experiment.



Bermudagrass control in Ky bluegrass/ryegrass/P. annua, Sedona, AZ Fall 2013

