Aminocyclopyrachlor Efficacy for Smooth Crabgrass Control in Tall Fescue

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INTRODUCTION

Smooth crabgrass (*Digitaria ischaemum* Schreb.) is a problematic summer annual weed that may warrant control in turf, pastures, and roadsides. Herbicides such as quinclorac, fenoxaprop, and mesotrione are available for use in tall fescue (*Festuca arundinacea* Schreb.) turf but applications may be limited based on crabgrass growth stage, turf maturity, or potential resistance to these chemistries (Derr 2002; Hart et al. 2004; Patton et al. 2007; Willis et al. 2007). Practitioners may use imazapic in tall fescue pastures and roadsides but reduced application rates of ≤0.07 kg ai ha^{-1} are necessary to minimize injury and limits efficacy for controlling smooth crabgrass (Anonymous 2011). Recent restrictions on MSMA use in turf and grassy roadsides have further limited options for postemergence crabgrass control and new herbicides, such as aminocyclopyrachlor, could provide an alternative mode of action to practitioners.

OBJECTIVE

To evaluate the influence of growth stage on aminocyclopyrachlor efficacy for controlling smooth crabgrass in tall fescue.

MATERIALS AND METHODS

- Experimental Design
  - May to August 2011 and 2012, UGA Griffin
  - Newly seeded 'Titan' tall fescue
  - Randomized complete block with four replications
  - Plot size 0.9 x 2.5 m
  - Two application timings at different growth stages (multi-leaf and multi-tiller)
  - Application Dates May 12 and June 2 in 2011 and May 7 and May 28 2012
- Data Analysis
  - Subjected to analysis of variance
  - Means separated with Fisher's LSD at α = 0.05

Treatment	Rate (kg ai ha^{-1})
aminocyclopyr	0.05
	0.08
	0.11
fenoxaprop	0.10

Figure 1. Application rates at two timings (multi-leaf or multi-tiller growth stage) in two combined field experiments, 2011-2012, in Griffin, GA.

RESULTS

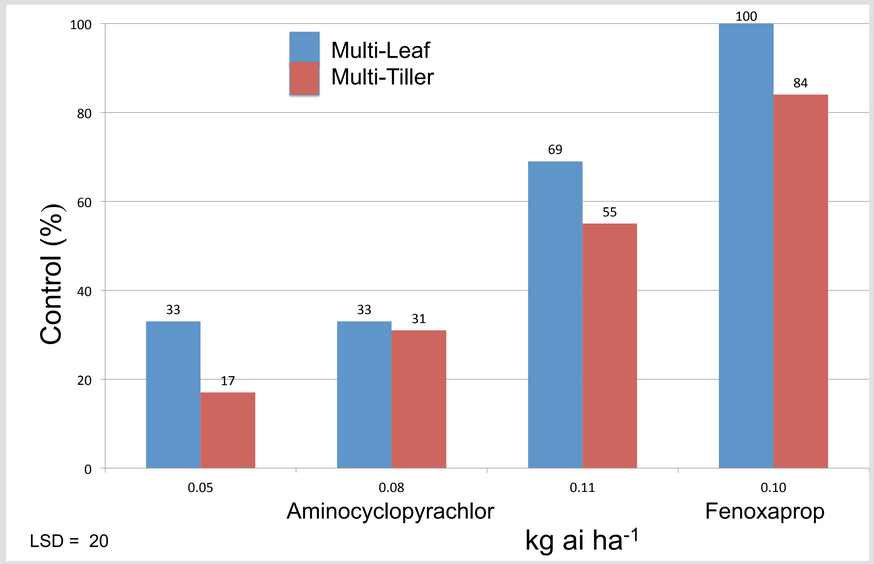

Figure 2. Smooth crabgrass control three weeks after treatment at two growth stages in two combined field experiments, 2011-2012, in Griffin, GA.

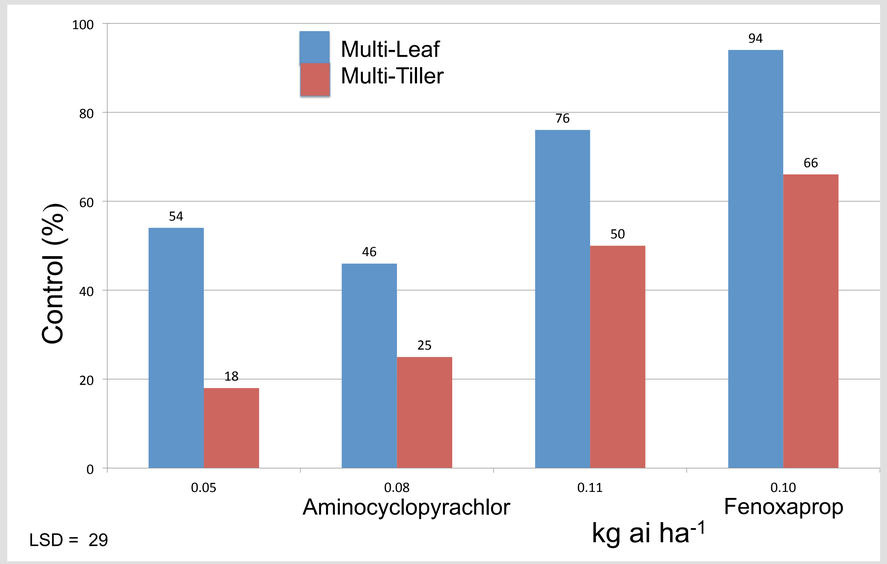

Figure 3. Smooth crabgrass control nine weeks after treatment at two growth stages in two combined field experiments, 2011-2012, in Griffin, GA.

Figure 4. Aminocyclopyrachlor at 0.11 kg ai ha^{-1} nine WAT applied at multi-leaf (left) and multi-tiller (right) growth stage.

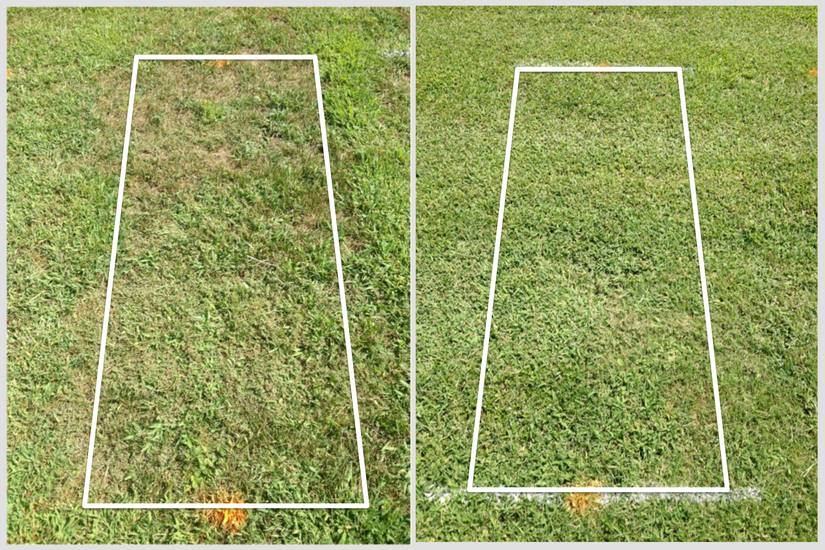

Figure 5. Fenoxaprop at 0.10 kg ai ha^{-1} nine WAT applied at multi-leaf (left) and multi-tiller (right) growth stage.

Figure 6. Smooth Crabgrass (*Digitaria ischaemum* Schreb.).

CONCLUSION

- Aminocyclopyrachlor has potential to provide fair (70 to 79%) control of smooth crabgrass but applications must be made at high rates prior to tillering.
- Fenoxaprop was more effective than aminocyclopyrachlor when applied at both growth stages.
- Further research should investigate repeat applications or tank-mixtures with other herbicides for controlling multi-leaf smooth crabgrass with aminocyclopyrachlor.

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