

# **Resistant Weeds & Management**

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# Horseweed





# Glyphosate-Resistant horseweed



# Winter burndown

- Burndown product
  - Glyphosate, Gramoxone, Liberty?
- Several residual options
  - Leadoff, Valor, Envive, Canopy, Boundary, Authority, Sharpen, Fierce, Sonic, Surveil
- Growth Regulator



# Winter burndown

- Make application February - early April
- Apply to actively growing weeds
- Timing to horseweed is critical  
    Spray before 8" tall

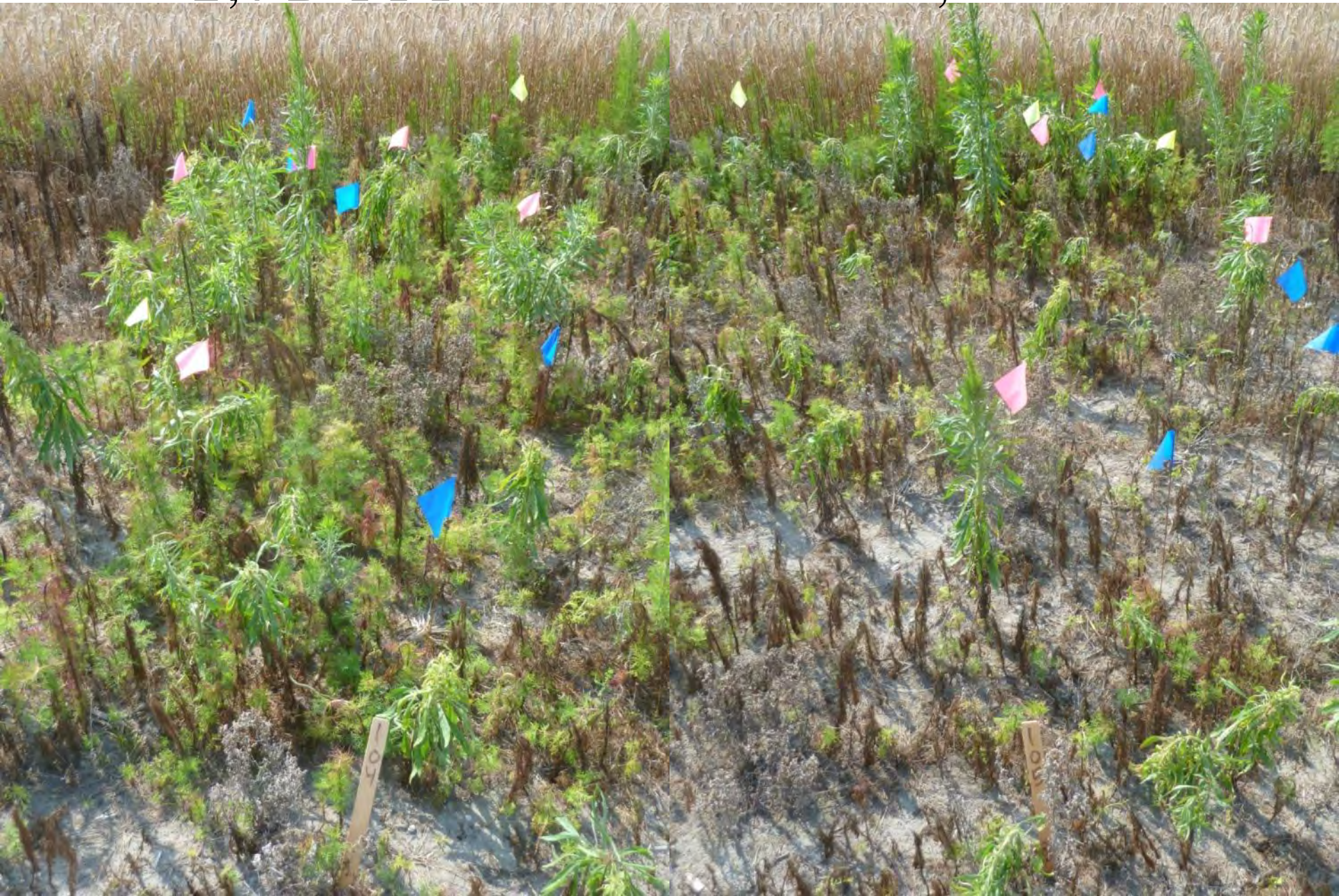


Non-treated



2,4-D 1 PT

2,4-D 2 PT



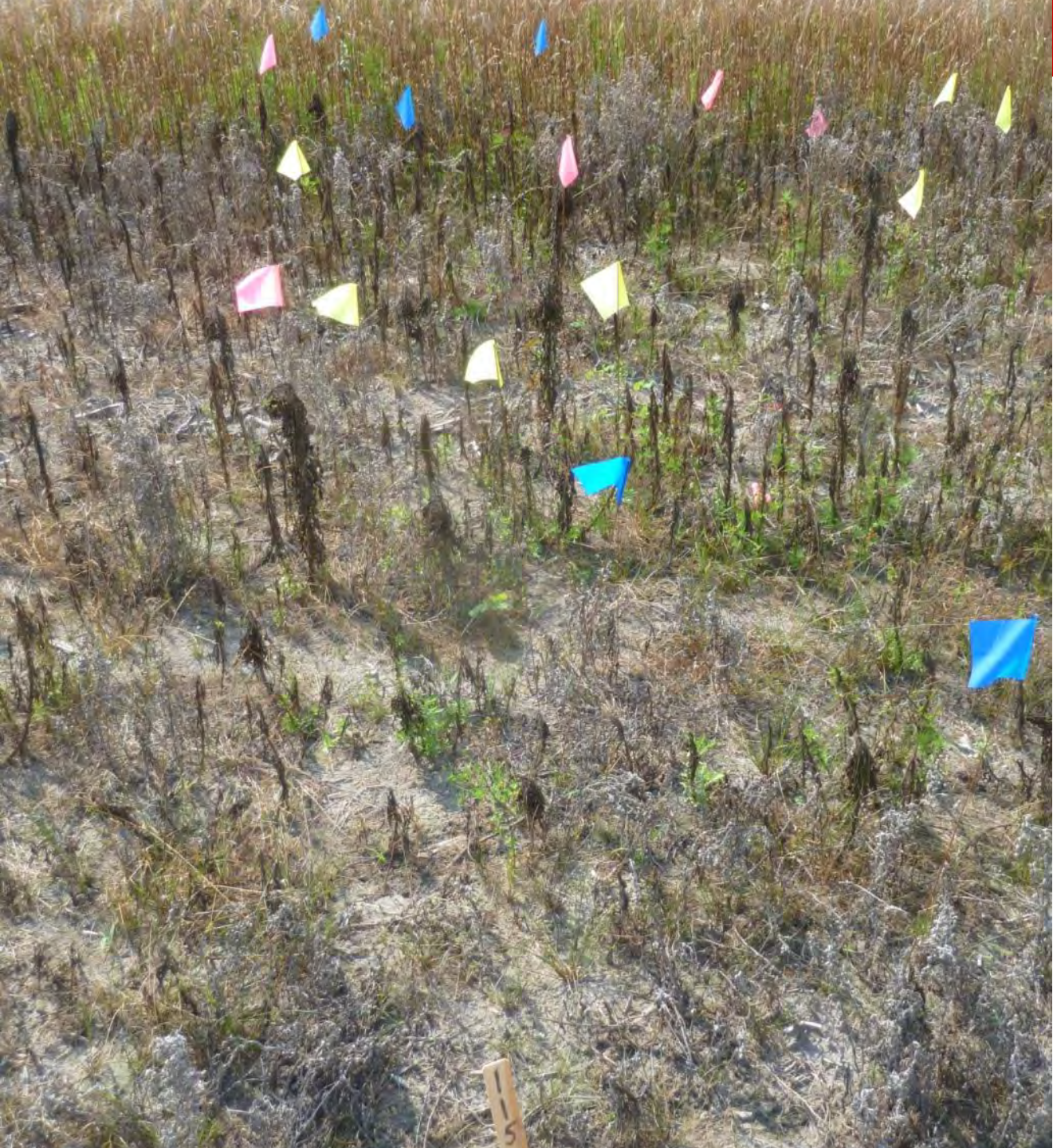


Liberty 29 oz

Gramoxone 3 PT







Sharpen 1 oz

# **Burndown Trial Near Elizabeth City, NC**

Roundup (22 fl oz) + 2,4-D (2 pt) in each mix  
Sprayed December 9 , January 27, or March 17  
Pictures taken May 12



**Non-treated**





# Roundup + 2,4-D





# Leadoff





# Tricor





# Boundary





# Trivence



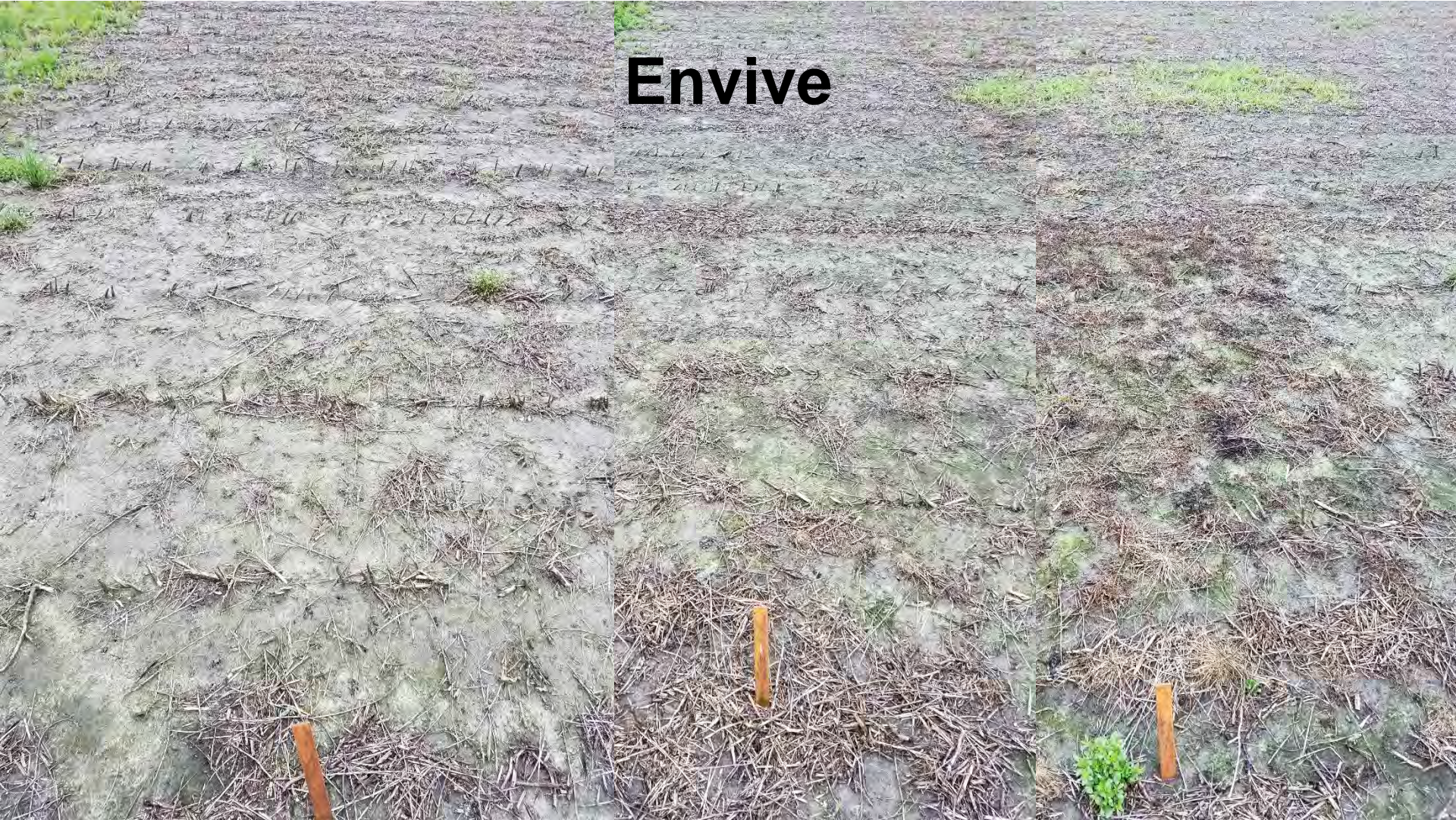


Valor





# Envive





# Sonic





# Surveil





# Fierce XLT





# Zidua PRO





# Conclusions

- Premixtures provide excellent control of most species.
- Control is possible with December applied herbicides



# Controlling PPO-resistant Palmer amaranth using preemergence herbicides





Trade Name	Active Ingredients	Application Rate
Authority First*	sulfentrazone + chloransulam-	6 oz./A
Authority MTZ*	methyl	8 oz./A
Authority XL*	sulfentrazone + metribuzin	5 oz./A
Broadaxe*	sulfentrazone + chlorimuron	20 fl oz./A
Spartan	sulfentrazone + S-metolachlor	5 fl oz./A
	sulfentrazone	
Balance Pro	isoxaflutole	16 fl oz./A
Dual Magnum	S-metolachlor	16 fl oz./A
Tricor 75DF	metribuzin	8 oz./A
Boundary*	S-metolachlor + metribuzin	20 fl oz./A
Clarity	dicamba	16 fl oz./A
Valor SX	flumioxazin	2 oz./A
Zidua	pyroxasulfone	2 oz./A
Fierce*	flumioxazin + pyroxasulfone	3 oz./A
Linex	linuron	16 fl oz./A
Outlook	dimethenamid-P	16 fl oz./A
Reflex	fomesafen	16 fl oz./A
Prefix*	fomesafen + S-metolachlor	32 fl oz./A
Prowl H2O	pendimethalin	24 fl oz./A
Scepter	imazaquin	2.8 oz./A
Warrant	acetochlor	48 fl oz./A

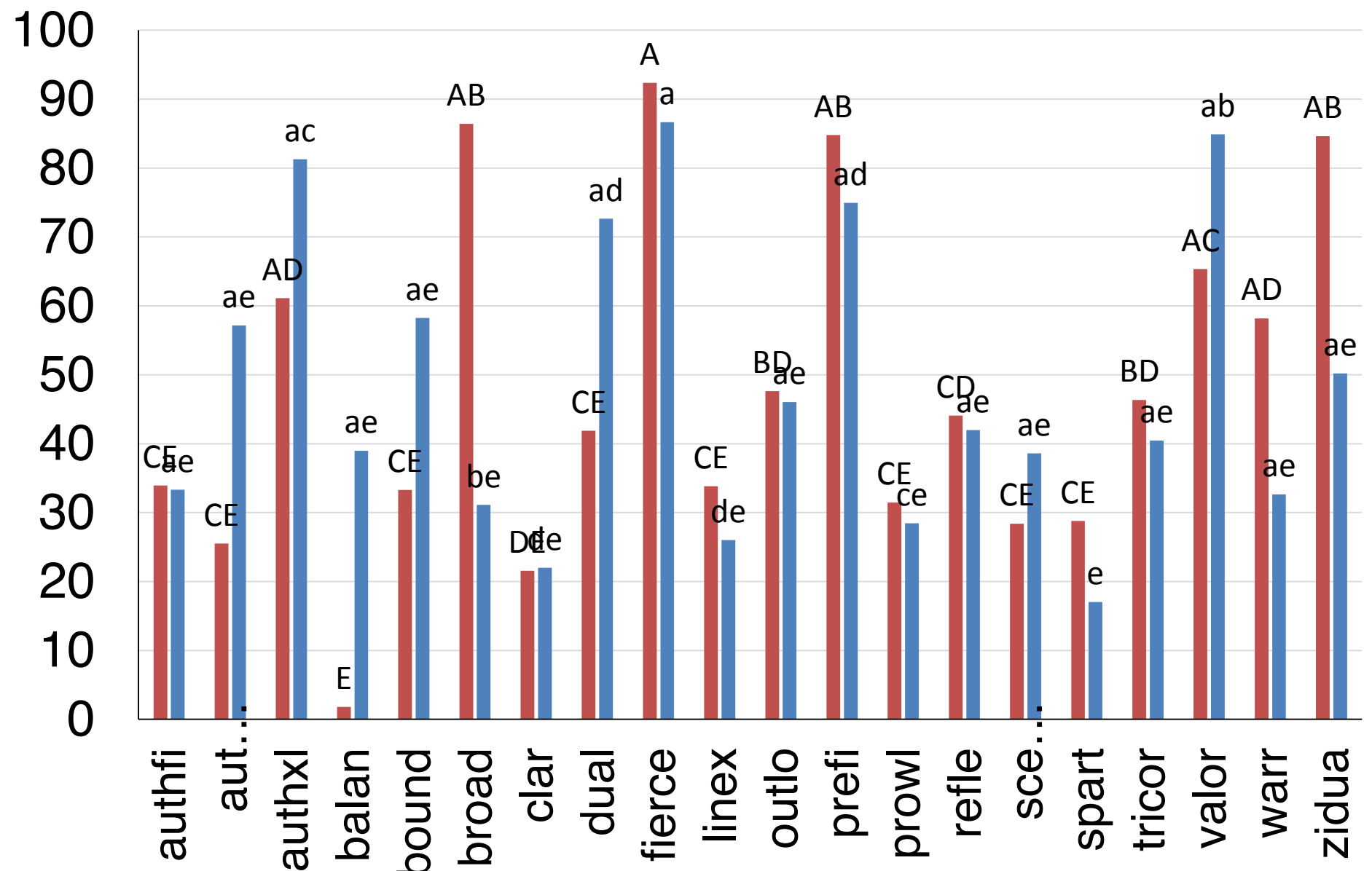


# Results



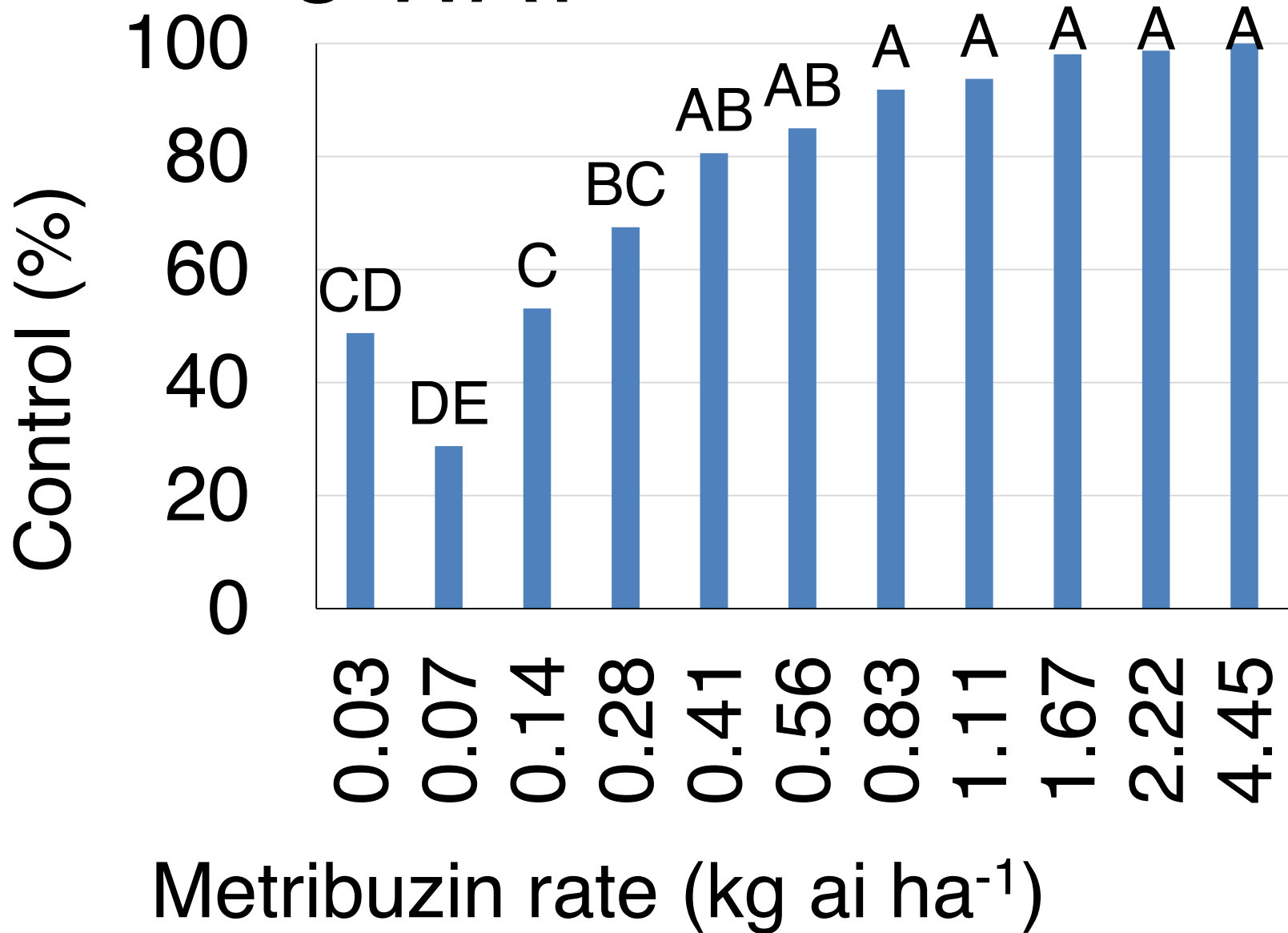


PPO Resistant Palmer amaranth Control with PRE Herbicides 4 WAT



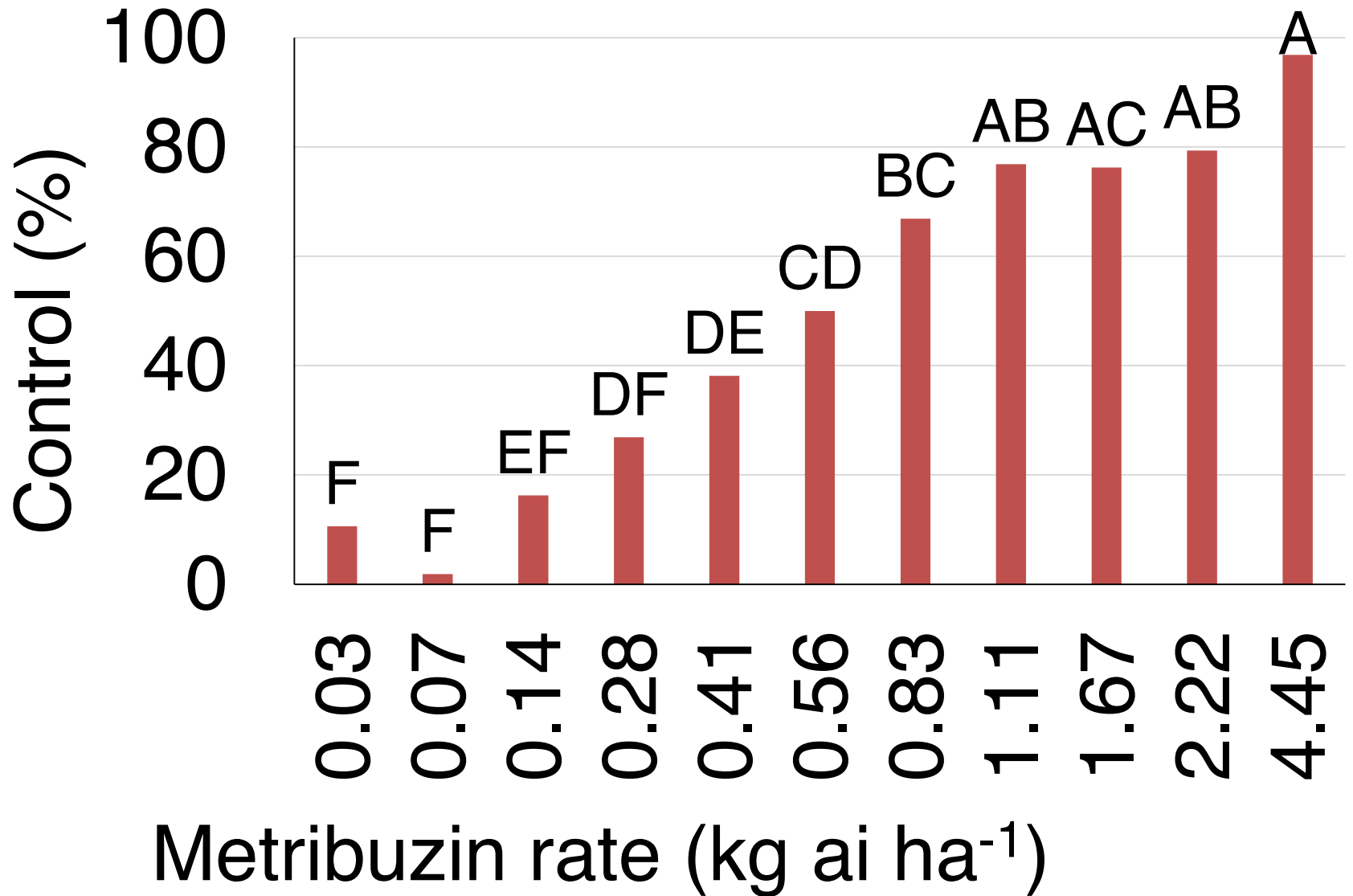


# 3 WAT



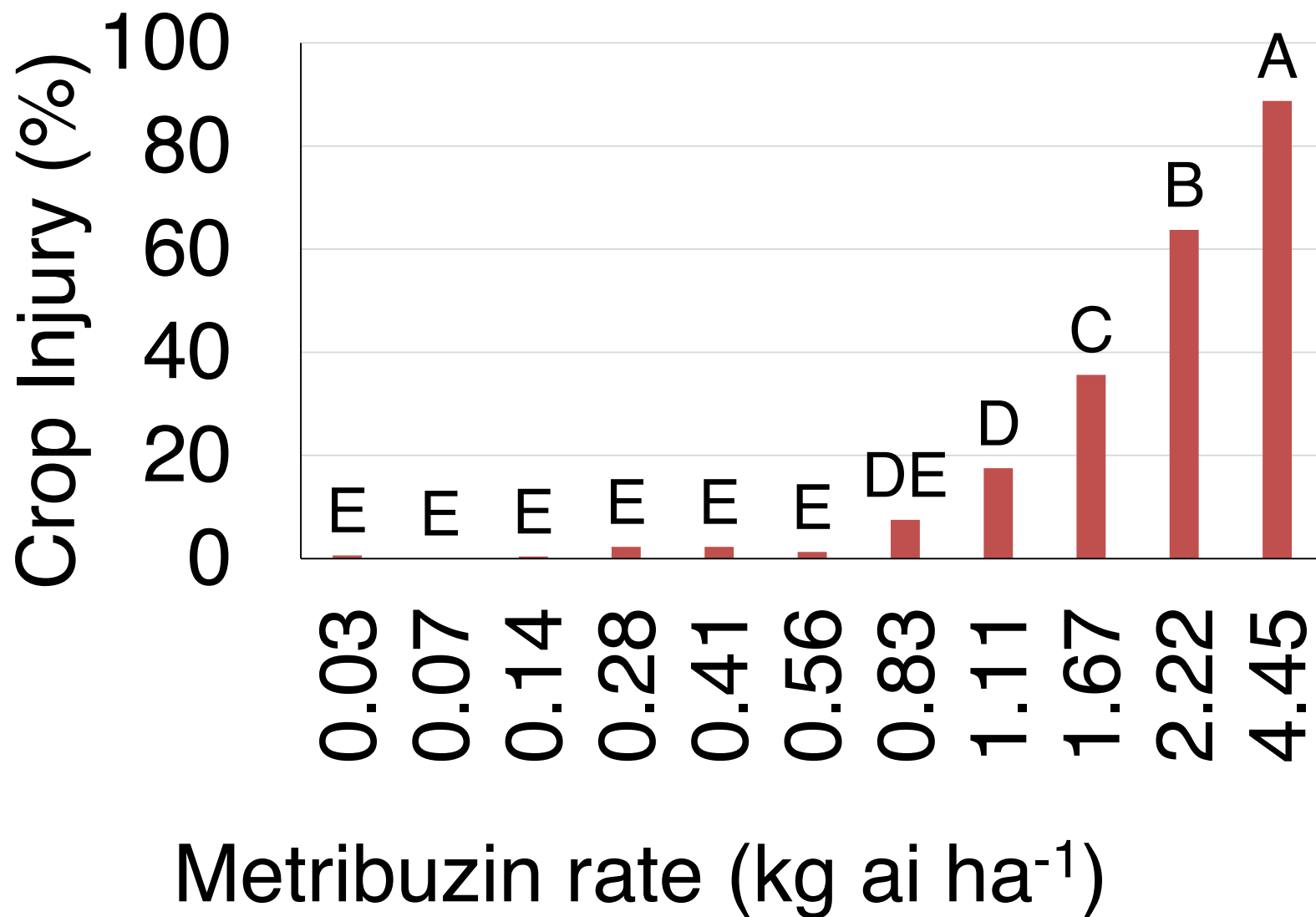


# 5 WAT





## 5 WAT





# Evaluation of Management Options for Glyphosate, ALS-, and PPO-resistant common ragweed



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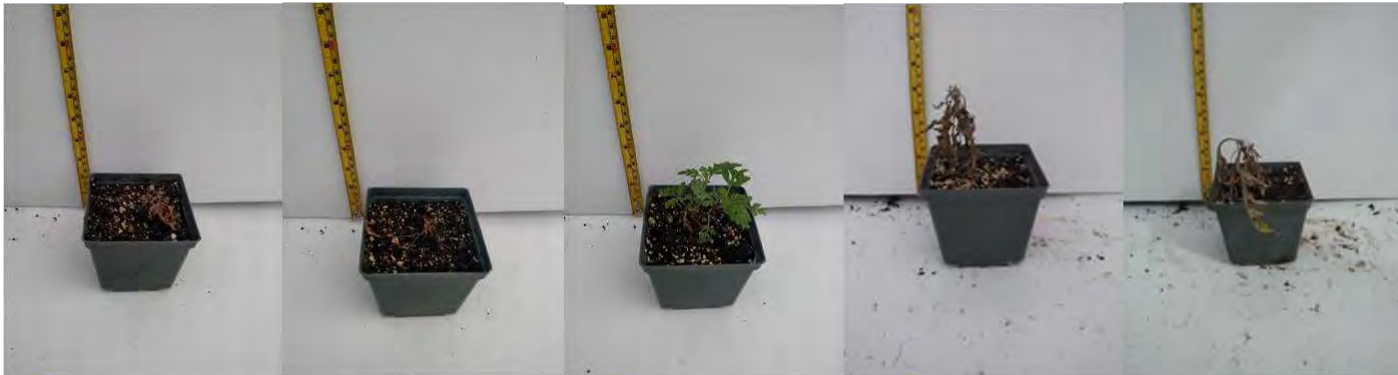


# 3 WAT

Moyock, NC



Rocky Mount, NC



Mississippi



Fomesafen  
Fomesafen

Carfentrazone  
Carfentrazone

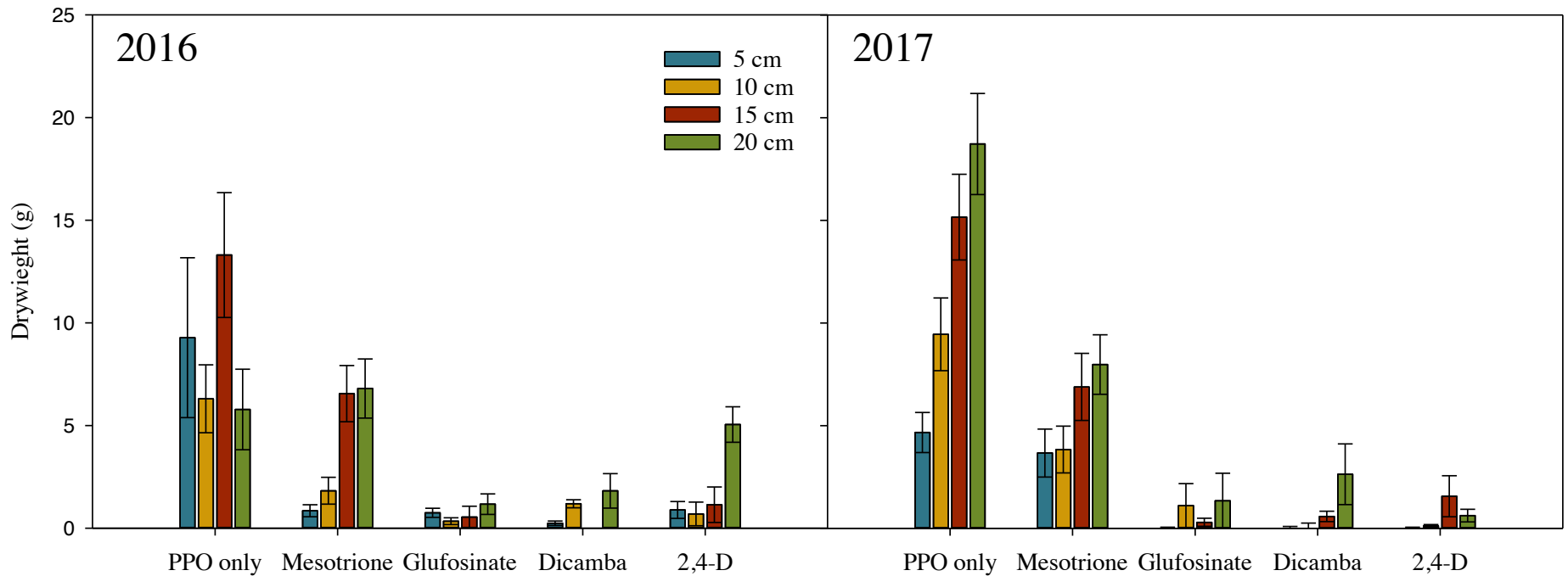
Flumiclorac  
Flumiclorac

Cloransulam  
Cloransulam

Chlorimuron  
Chlorimuron

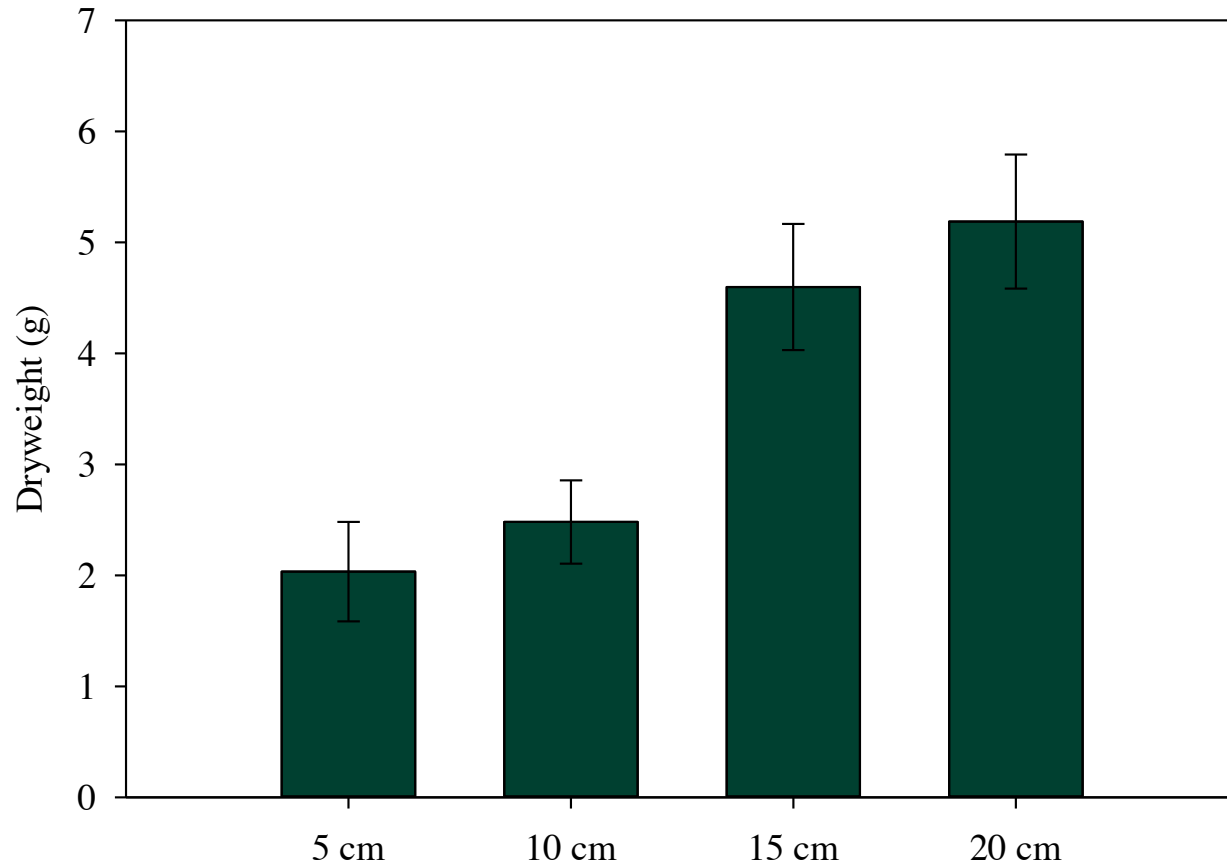


# Influence of year, herbicide technology and weed height on common ragweed biomass





# Effect of application timing on common ragweed biomass





# Influence of herbicide technology and PPO-inhibitor on common ragweed biomass

