

Expected Changes in Weed Herbicide Resistance for Select Weeds

Introduction

This fact sheet provides information to help growers adapt their weed management strategies for variable weather events. As temperatures and precipitation fluctuate, herbicide efficacy changes, and different weeds respond in different ways. Here we summarize information from an extensive research review into short summaries (advice) to help growers make informed decisions in their weed management. (LI = light intensity, RH = relative humidity)

Lambsquarters (*Chenopodium album*):



	Temp Inc	CO ₂ Inc	RH Inc
<i>Flumiclorac</i> (14)	+		no
<i>Fluthiacet</i>	+		data
<i>Glyphosate</i> (9)	-	-	

Key points: Glyphosate will underperform in heat waves. Flumiclorac & Fluthiacet should be used instead.

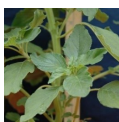
Palmer Amaranth (*Amaranthus palmeri*):



	Temp Inc	CO ₂ Inc	RH Inc
<i>Mesotrione</i> (27)	-		
<i>Glyphosate</i> (9)		-	
<i>Glufosinate</i> (10)			+

Advice: Glufosinate will perform well in humid weather. In heat waves, the time to apply post-emergence herbicides will be shorter.

Smooth Pigweed (*Amaranthus palutis*):



	Temp Inc
<i>Alachlor</i> , <i>Bentazon</i> (6), <i>Ethalfuralin</i> , <i>Glufosinate</i> (10), <i>Glyphosate</i> (9), <i>Linuron</i> (7), <i>Metolachlor</i> (15)	+

No data for CO₂ or RH.

Advice: Smooth Pigweed will be easier to tackle under high temperatures, all herbicides listed showed some improvement in efficacy.

Redroot Pigweed
(*Amaranthus retroflexus*):



	Temp Inc	CO ₂ Inc	RH Inc	LI Inc
<i>Flumiclorac</i>	+			
<i>Fluthiacet</i>	+			
<i>Mesotrione</i>	-			
<i>Metsulfuron</i>		-		
<i>Glufosinate</i>			+	
<i>Paraquat</i>				-

Advice: Glufosinate, Flumiclorac, and Fluthiacet will likely be the best choices during hot and wet summers.

Waterhemp
(*Amaranthus rudis* &
Amaranthus tuberculatus):



	Temp Inc	CO ₂ Inc	RH Inc
<i>Mesotrione</i>	-		+
<i>Glufosinate</i>			+

Advice: As temperature increases, The effective window of time for applying *post-emergence herbicides* shrinks. Under drought stress, waterhemp becomes more competitive.

Large Crabgrass
(*Digitaria sanguinalis*):



	Temp Inc	CO ₂ Inc	RH Inc	LI Inc
<i>Mesotrione</i>	-	no	+	
<i>Paraquat</i> (22)		data		-

Advice:

HERBICIDE KEY:

	C	S	F
<i>Bentazon</i> (6)			
<i>Ethalfuralin</i> (3)			
<i>Flumiclorac</i> (14)			
<i>Glufosinate</i> (10)			
<i>Glyphosate</i> (9)			

	C	S	F
<i>Linuron</i> (7)			
<i>Mesotrione</i> (27)			
<i>Metolachlor</i> (15)			
<i>Paraquat</i> (22)			
C=corn, S=soybean, F=forage			

For full reference list, please see [insert not-yet-built website here].