

Control of Palmer Amaranth in South Texas Peanuts

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Introduction

Brake herbicide (active ingredient fluridone) is a Group 12 herbicide for preemergence control of weeds in peanut. According to label precautions, it may cause temporary bleaching, stunting, or necrosis in untested peanut cultivars. In 2023, late season injury in the form of chlorosis (“yellow flash”) was observed with Brake treatments, exacerbated by higher rates. The objective of this study was to evaluate the efficacy of PRE and PRE + postemergence (POST) herbicide programs for season-long control of key weed species and to further investigate peanut response to Brake herbicide.

Background information

A field study was conducted in 2024 in an irrigated peanut field near Pearsall, TX. Soil at the study site was a Duval very fine sandy loam. The trial included eighteen treatments and was arranged as a randomized complete block with three replications. Plots were two rows (38" spacing) wide by 30 ft long. The field was planted to Georgia 09B peanut on June 6, 2024. Preemergence (PRE) treatments were made two days later on June 8, 2024. Early postemergence (EPOST) applications were made on July 17, 2024, 39 days after PRE applications were made. Applications were made with a CO₂ pressurized backpack sprayer with a handheld spray boom equipped with TeeJet Drift Guard 11002 spray nozzles calibrated to deliver a total spray volume of 20 (PRE) or 15 (EPOST) GPA.

Table 1. Treatment list

ID	Treatments	Rates	PRE	EPOST
1	Nontreated			
2	Prowl H ₂ O	1 qt	x	
3	Prowl H ₂ O	1 qt	x	
	Dual Magnum	1.33 qt	x	
4	Prowl H ₂ O	1 qt	x	
	Valor	2 oz	x	
	Warrant	1.5 qt	x	
5	Prowl H ₂ O	1 qt	x	
	Valor	3 oz	x	
	Warrant	1.5 qt	x	
6	Prowl H ₂ O	1 qt	x	
	Valor	2 oz	x	
	Warrant	1.5 qt	x	
	Warrant	1.5 qt		x
	2,4-DB	1.6 qt		x
7	Prowl H ₂ O	1 qt	x	
	Warrant	1.5 qt	x	
	Warrant	1.5 qt		x
	2,4-DB	1.6 qt		x
8	Prowl H ₂ O	1 qt	x	
	Dual Magnum	1.33 qt	x	
	Valor	2 oz	x	
9	Prowl H ₂ O	1 qt	x	
	Dual Magnum	1.33 qt	x	
	Valor	3 oz	x	
10	Prowl H ₂ O	1 qt	x	
	Dual Magnum	1.33 qt	x	
	Valor	2 oz	x	
	Dual Magnum	1.33 qt		x
	2,4-DB	1.6 qt		x

ID	Treatments	Rates	PRE	EPOST
11	Prowl H ₂ O	1 qt	x	
	Dual Magnum	1.33 qt	x	
	Valor	3 oz	x	
	Dual Magnum	1.33 qt		x
	2,4-DB	1.6 qt		x
12	Prowl H ₂ O	1 qt	x	
	Dual Magnum	1.33 qt	x	
	Dual Magnum	1.33 qt		x
	2,4-DB	1.6 qt		x
13	Prowl H ₂ O	1 qt	x	
	Anthem Flex	3.5 oz		x
14	Prowl H ₂ O	1 qt	x	
	Brake	8 oz	x	
15	Prowl H ₂ O	1 qt	x	
	Brake	12 oz	x	
16	Prowl H ₂ O	1 qt	x	
	Brake	8 oz	x	
	Pursuit	4 oz	x	
17	Prowl H ₂ O	1 qt	x	
	Brake	8 oz	x	
	Dual Magnum	1.33 qt		x
	2,4-DB	1.6 qt		x
18	Prowl H ₂ O	1 qt	x	
	Cadre	4 oz		x
	2,4-DB	1.6 qt		x

Results and Discussion

At 19 days after planting, slight bleaching was observed in seedling peanuts with treatments including Brake (Table 2). Peanut quickly grew out of this early season bleaching and was not observed again. Control of Palmer amaranth was excellent (98-100%) with all treatments other than Prowl H₂O alone (96%). Palmer amaranth was the primary weed species present in nontreated plots and was the sole weed species rated for the duration of the study. At the time of EPOST applications (39 DAP), control of Palmer amaranth remained excellent, except for treatments consisting of Prowl H₂O alone (70-87%). Sixteen days after EPOST applications were made (57 DAP), control of Palmer amaranth was excellent (90-100%) with all treatments except for Prowl H₂O PRE followed by Anthem Flex EPOST (80%) and Prowl H₂O PRE (73%). A similar trend was seen at the next evaluation (95 DAP) (Table 2). Brake treatments exhibited slight chlorosis very late in the season (0-9%) (Table 2).

Table 2. Weed control, early- and late-season peanut injury (%), Pearsall, TX.

Treatment ID	Crop injury (%)		Palmer Amaranth Control (%)			95 DAP	Crop injury - yellow flash (%)
	19 DAP	19 DAP	41 DAP	57 DAP	109 DAP		
1	0	0	0	0	0	0	0
2	0	96	70	73	67	0	0
3	0	100	100	100	100	0	0
4	0	100	100	100	100	0	0
5	0	100	98	99	100	0	0
6	0	100	99	99	99	0	0
7	0	100	100	100	99	0	0
8	0	100	100	100	100	0	0
9	0	100	100	100	100	0	0
10	0	100	100	100	100	0	0
11	0	100	100	100	100	0	0
12	0	100	100	100	100	4	0
13	0	100	93	80	80	0	0
14	1	100	98	98	98	1	1
15	5	100	100	100	100	9	9
16	2	100	100	100	100	1	1
17	0	100	100	100	100	0	0
18	0	100	87	90	90	0	0

Values highlighted with yellow are significantly same as the highest values.



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Figure 1. Example of late-season peanut injury (yellow-flash) in plots treated with Brake PRE (Photo courtesy of Dr. Josh McGinty).