

2022 PEANUT PEST MANAGEMENT REPORT

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Peanut weed and disease management trials were conducted at the Oklahoma State University Caddo Research Station near Fort Cobb. Spanish peanut 'Ole' were planted on May 10, 2022, in 36-in rows. Preemergence treatments were applied immediately after planting. The Gramoxone Tolerance, Liberty Tolerance and disease management trials received an overlay of Prowl (1 qt/A) + Valor (2 oz/A) PRE, Cadre (4 fl oz/A) + Butyrac 200 (1 pt/A) + Dyne-Amic (6 fl oz/A) and Select (1 pt/A) + Dyne-Amic (6 fl oz/A) POST. These trials were weed-free, irrigated and maintained throughout the growing season. Trials were visually evaluated for peanut response and weed control or leafspot. Peanut crops were dug, field dried and harvested (10/27/22).

The first trial was established to evaluate the response of peanut to POST applications of Gramoxone alone and in combination with Dual Magnum. Gramoxone was applied at 10.8 (1X) and 21.6 (2X) fl oz/A either alone or in combination with Dual Magnum at 21.3 (1X) and 42.6 (2X) fl oz/A. Applications were made at 14 days after crack (DAC), 28 DAC, or both 14 and 28 DAC. All treatments were applied with Induce (non-ionic surfactant) at 0.25% v/v.

Peanut stands were reduced less than 5% from any of the herbicide treatments applied (Table 1). Initial peanut stunting was 15 to 70% from the POST1 (14 DAC) application timing (Table 2). The most severe stunting occurred from the combinations with Dual Magnum and from the 2X rate applications. This stunting generally subsided and was less than 5% by 79 days after planting (DAP). Initial stunting was less severe from the POST2 (28 DAC) ranging from 3 to 8%. Stunting from a POST1 + POST2 applications was 6 to 26% across the various treatment combinations. Similar to the POST1 timing, injury subsided to 5% or less by 79 DAP. Leaf burn (Table 3) and overall visual injury (Table 4) followed a similar trend to the peanut stunting. All treatments yielded over 5,500 lbs/A (weed-free yield = 5,714 lbs/A) with the exception of two applications of Gramoxone + Dual Magnum, both applied at 2X of the labeled rate which yielded 4,617 lbs/A (Table 4).

The second trial was established to evaluate the effects of preplant and preemergence applications of Liberty (glufosinate) on peanut. Liberty was applied on May 10 at 0, 25, 50 and 75 fl oz/A. Peanut crops were planted immediately prior to the Liberty application or 7 days later. No injury or yield effects were observed from any of the Liberty treatments (Table 5).

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A trial was established on the Steve King Farm near Eakly to evaluate weed management and peanut response to Anthem Flex combinations. Initial injury (7 days after treatment [DAT]) was between 6 and 10% with all treatments (Table 6). Injury was slightly higher with Anthem Flex compared to Dual Magnum. This is to be expected due to the addition of Aim in the Anthem Flex herbicide. Injury was not visible by 16 DAT with any of the treatments. The only weed in a significant population was volunteer cotton. However, even this population was sporadic across the trial area. It was observed that the addition of Aim to Anthem Flex, equal to a total of 2.0 fl oz/A of Aim, increased volunteer cotton control. This may be a potential option where Enlist cotton was planted, and a producer would prefer not to apply Gramoxone.

The next weed management trial evaluated various combinations of Prowl, Pursuit and Valor for preemergence weed management in peanut. All PRE treatments were followed with a POST application of 2,4-DB and a POST application of Select. Initial control of Palmer amaranth (Table 7), Texas panicum (Table 8) and ivyleaf morningglory (Table 9) was at least 90% with all treatments 21-27 DAP. These same species were controlled 100%, 58 DAP with Pursuit (4 fl oz/A) + Valor (3 fl oz/A) together or in combination with Prowl H2O (32 fl oz/A). Peanut injury was less than 10% with all treatments applied (Table 10). Peanut yield was over 5,100 lbs/A with the three-way combination of Prowl H2O + Pursuit + Valor compared to 3,717 lbs/A when no PRE was applied.

The final trial was established to evaluate Lucento based fungicide programs for leafspot. Leafspot was extremely low averaging less than 1 (very few leafspot lesions) on the Florida Leaf Spot Scale the entire growing season. This was true even with the untreated. Due to the low level of leaf spot there were no differences for any of the treatments in level of leafspot or peanut yield (Table 11).

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Table 1. Gramoxone rates, timings and combinations effects on peanut stand at Fort Cobb, 2022.

			27 DAP	34 DAP	42 DAP	49 DAP	58 DAP	79 DAP
Treatment ^a	Rate (fl oz/A)	Timing			% Stand I	Reduction		
Gramoxone	10.8	14 DAC	0	4	3	3	0	0
+ Dual Magnum	21.3	14 DAC	0	4	3	3	1	0
Gramoxone	10.8	28 DAC			1	0	0	0
+ Dual Magnum	21.3	28 DAC			1	1	0	0
Gramoxone	21.6	14 DAC	3	4	3	4	4	0
+ Dual Magnum	42.6	14 DAC	3	4	4	4	4	0
Gramoxone	21.6	28 DAC			3	3	0	0
+ Dual Magnum	42.6	28 DAC			4	4	1	0
Gramoxone	10.8	14 + 28 DAC	0	4	3	3	3	0
+ Dual Magnum	21.3	14 + 28 DAC	1	4	4	4	1	0
Gramoxone	21.6	14 + 28 DAC	0	4	4	4	1	0
+ Dual Magnum	42.6	14 + 28 DAC	3	4	4	4	4	0
GM + DM + Basagran	10.8 + 21.3 + 16	28 DAC			4	0	0	0
LSD (P=0.10)			2	NS	NS	3	2	NS
CV (%)			182	65	89	86	144	0
Treatment Prob (F)			0.1091	0.2676	0.4837	0.0373	0.015	1

^a All treatments applied with Induce (0.25 %v/v); GM - Gramoxone, DM = Dual Magnum, DAC = days after cracking, LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, NS = not significant.



Table 2. Gramoxone rates, timings and combinations effects on peanut stunting at Fort Cobb, 2022.

			27 DAP	34 DAP	42 DAP	49 DAP	58 DAP	79 DAP
Treatment ^a	Rate (fl oz/A)	Timing			% Stu	unting		
Gramoxone	10.8	14 DAC	23	9	6	5	4	1
+ Dual Magnum	21.3	14 DAC	45	13	13	13	4	2
Gramoxone	10.8	28 DAC			3	3	3	1
+ Dual Magnum	21.3	28 DAC			8	4	5	1
Gramoxone	21.6	14 DAC	50	14	14	14	6	3
+ Dual Magnum	42.6	14 DAC	68	24	26	30	10	4
Gramoxone	21.6	28 DAC			5	5	4	1
+ Dual Magnum	42.6	28 DAC			8	10	6	0
Gramoxone	10.8	14 + 28 DAC	16	5	6	9	6	2
+ Dual Magnum	21.3	14 + 28 DAC	40	10	16	15	8	0
Gramoxone	21.6	14 + 28 DAC	38	15	16	21	8	2
+ Dual Magnum	42.6	14 + 28 DAC	58	25	26	46	15	5
GM + DM + Basagran	10.8 + 21.3 + 16	28 DAC			3	3	4	0
LSD (P=0.10)			17	4	7	9	4	1
CV (%)			38	28	51	57	55	76
Treatment Prob (F)			0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

^a All treatments applied with Induce (0.25 %v/v); GM - Gramoxone, DM = Dual Magnum, DAC = days after cracking, LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, NS = not significant.



Table 3. Gramoxone rates, timings and combinations effects on peanut leaf burn (necrosis) at Fort Cobb, 2022.

			27 DAP	34 DAP	42 DAP	49 DAP	58 DAP	79 DAP
Treatment ^a	Rate (fl oz/A)	Timing			% Lea	f Burn		
Gramoxone	10.8	14 DAC	28	11	10	4	0	0
+ Dual Magnum	21.3	14 DAC	48	14	11	5	0	0
Gramoxone	10.8	28 DAC			13	9	0	0
+ Dual Magnum	21.3	28 DAC			15	10	0	0
Gramoxone	21.6	14 DAC	45	13	11	6	0	0
+ Dual Magnum	42.6	14 DAC	68	13	10	10	0	0
Gramoxone	21.6	28 DAC			14	8	1	0
+ Dual Magnum	42.6	28 DAC			13	10	0	0
Gramoxone	10.8	14 + 28 DAC	25	11	15	8	0	0
+ Dual Magnum	21.3	14 + 28 DAC	38	11	15	10	0	0
Gramoxone	21.6	14 + 28 DAC	45	11	16	10	1	0
+ Dual Magnum	42.6	14 + 28 DAC	53	11	14	10	0	0
GM + DM + Basagran	10.8 + 21.3 + 16	28 DAC			14	8	0	0
LSD (P=0.10)			16	3	3	4	NS	NS
CV (%)			34	27	22	45	508	0
Treatment Prob (F)			0.0001	0.0001	0.0001	0.0036	0.4697	1

^a All treatments applied with Induce (0.25 %v/v); GM - Gramoxone, DM = Dual Magnum, DAC = days after cracking, LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, NS = not significant.



Table 4. Gramoxone rates, timings and combinations effects on peanut injury and yield at Fort Cobb, 2022.

			27 DAP	34 DAP	42 DAP	49 DAP	58 DAP	79 DAP	Yield
Treatment ^a	Rate (fl oz/A)	Timing			% Ir	njury			lb/A
Gramoxone	10.8	14 DAC	28	15	14	8	4	1	5619
+ Dual Magnum	21.3	14 DAC	40	20	19	15	5	2	5794
Gramoxone	10.8	28 DAC			14	9	3	1	5561
+ Dual Magnum	21.3	28 DAC			16	10	5	1	5750
Gramoxone	21.6	14 DAC	45	20	20	23	10	3	5547
+ Dual Magnum	42.6	14 DAC	68	38	40	38	15	4	5663
Gramoxone	21.6	28 DAC			16	9	5	1	5525
+ Dual Magnum	42.6	28 DAC			18	14	8	0	5685
Gramoxone	10.8	14 + 28 DAC	23	13	18	15	10	2	5663
+ Dual Magnum	21.3	14 + 28 DAC	38	14	26	21	9	0	5721
Gramoxone	21.6	14 + 28 DAC	40	18	41	28	9	2	5764
+ Dual Magnum	42.6	14 + 28 DAC	53	31	45	53	20	5	4617
GM + DM + Basagran	10.8 + 21.3 + 16	28 DAC			15	10	5	0	5583
LSD (P=0.10)			17	7	9	11	4	1	524
CV (%)			37	30	34	50	49	76	8
Treatment Prob (F)			0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.087

^a All treatments applied with Induce (0.25 %v/v); GM - Gramoxone, DM = Dual Magnum, DAC = days after cracking, LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, NS = not significant.



Table 5. Liberty rates and timings effects on peanut stand, stunting, injury and yield at Fort Cobb, 2022.

			27 DAP	34 DAP	27 DAP	34 DAP	27 DAp	34 DAP	Yield
Treatment ^a	Rate (fl oz/A)	Timing	% Stand	Reduction	% Stu	unting	% Injury		lb/A
Liberty	0	7 DPP	0	0	0	0	0	0	5735
Liberty	25	7 DPP	0	0	0	0	0	0	5750
Liberty	50	7 DPP	0	0	0	0	0	0	5663
Liberty	75	7 DPP	0	0	0	0	0	0	5692
Liberty	0	PRE	0	0	0	0	0	0	5343
Liberty	25	PRE	0	0	0	0	0	0	5431
Liberty	50	PRE	0	0	0	0	0	0	5467
Liberty	75	PRE	0	0	0	0	0	0	5547
LSD (P=0.10)			NS	NS	NS	NS	NS	NS	NS
CV (%)			0	0	0	0	0	0	5
Treatment Prob (F)			1	1	1	1	1	1	0.2403

^a DPP = days prior to planting, DAP = days after planting, LSD = least significant difference, CV = coefficient of variation, NS = not significant.



Table 6. Peanut injury and volunteer cotton control with Anthem Flex at Eakly, 2022.

			7 DAT	16 DAT	49 DAT	7 DAT	16 DAT	49 DAT	
Treatment ^a	Rate (fl oz/A)	Timing		% Injury		% Volunteer Cotton			
Anthem Flex	3.5	POST	10	0	0	56	70	75	
Anthem Flex + 2,4-DB	3.0 + 16	POST	10	0	0	38	83	88	
Anthem Flex + 2,4-DB	3.5 + 16	POST	9	0	0	60	76	75	
Anthem Flex + 2,4-DB	4.0 + 16	POST	10	0	0	26	63	79	
Anthem Flex + 2,4-DB + Select	3.5 + 16 + 12	POST	10	0	0	40	76	75	
Dual Magnum	22	POST	6	0	0	28	61	79	
Dual Magnum + 2,4-DB	22 + 16	POST	8	0	0	60	73	74	
Dual Magnum + 2,4-DB + Select	22 + 16 + 12	POST	8	0	0	20	69	74	
Anthem Flex + Aim	3.0 + 1.5	POST	10	0	0	90	94	100	
LSD (P=0.10)			2	NS	NS	33	33	31	
CV (%)			22	0	0	66	41	36	
Treatment Prob (F)			0.0001	1	1	0.006	0.0058	0.0015	

^a All treatments applied with Agridex (1 %v/v); DAT = days after POST treatment, LSD = least significant difference, CV = coefficient of variation, NS = not significant



Table 7. Preemergence herbicide combinations Palmer amaranth control at Fort Cobb, 2022.

			01 040	07.04.0	24 0 4 0	40.040	
			21 DAP	27 DAP	34 DAP	42 DAP	58 DAP
Treatment ^a	Rate (fl oz/A)	Timing			% Control		
Prowl H20	32	PRE	100	99	100	96	98
Pursuit	4	PRE	94	90	86	81	78
Valor EZ	3	PRE	100	100	99	99	99
Prowl + Valor	32 + 3	PRE	100	99	95	96	95
Prowl + Pursuit	32 + 4	PRE	100	100	98	92	93
Pursuit + Valor	4 + 3	PRE	100	100	100	100	100
Prowl + Pursuit + Valor	32 + 4 + 3	PRE	100	100	100	100	100
LSD (P=0.10)			4	7	8	9	11
CV (%)			4	6	7	8	10
Treatment Prob (F)			0.0001	0.0001	0.0001	0.0001	0.0001

^a DAP = days after planting, LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, NS = not significant.



Table 8. Preemergence herbicide combinations Texas panicum control at Fort Cobb, 2022.

			21 DAP	27 DAP	34 DAP	42 DAP	58 DAP
Treatment ^a	Rate (fl oz/A)	Timing			% Control		
Prowl H20	32	PRE	100	95	98	89	95
Pursuit	4	PRE	94	98	97	90	98
Valor EZ	3	PRE	100	100	99	96	98
Prowl + Valor	32 + 3	PRE	100	96	99	91	98
Prowl + Pursuit	32 + 4	PRE	100	100	100	100	99
Pursuit + Valor	4 + 3	PRE	100	100	100	100	100
Prowl + Pursuit + Valor	32 + 4 + 3	PRE	100	100	100	100	100
LSD (P=0.10)			1	5	4	20	7
CV (%)			1	5	3	21	6
Treatment Prob (F)			0.0001	0.0001	0.0001	0.0001	0.0001

^a DAP = days after planting, LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, NS = not significant.



Table 9. Preemergence herbicide combinations ivyleaf morningglory control at Fort Cobb, 2022.

							50 5 4 5
			21 DAP	27 DAP	34 DAP	42 DAP	58 DAP
Treatment ^a	Rate (fl oz/A)	Timing			% Control		
Prowl H20	32	PRE	100	100	100	100	100
Pursuit	4	PRE	99	99	94	93	98
Valor EZ	3	PRE	100	100	100	100	100
Prowl + Valor	32 + 3	PRE	100	100	100	100	100
Prowl + Pursuit	32 + 4	PRE	100	100	100	100	100
Pursuit + Valor	4 + 3	PRE	100	100	100	100	100
Prowl + Pursuit + Valor	32 + 4 + 3	PRE	100	100	100	100	100
LSD (P=0.10)			1	1	3	4	2
CV (%)			1	1	3	4	2
Treatment Prob (F)			0.0001	0.0001	0.0001	0.0001	0.0001

^a DAP = days after planting, LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, NS = not significant.



Table 10. Preemergence herbicide combinations effects on peanut injury and yield at Fort Cobb, 2022.

			7 DAP	21 DAP	27 DAP	34 DAP	42 DAP	58 DAP	Yield
Treatment ^a	Rate (fl oz/A)	Timing			% Ir	njury			lb/A
Prowl H20	32	PRE	4	6	5	4	1	0	4516
Pursuit	4	PRE	3	4	4	3	3	3	4646
Valor EZ	3	PRE	4	6	5	4	3	1	4487
Prowl + Valor	32 + 3	PRE	4	5	5	4	1	0	4545
Prowl + Pursuit	32 + 4	PRE	3	3	3	3	1	1	4538
Pursuit + Valor	4 + 3	PRE	6	9	8	4	0	0	4705
Prowl + Pursuit + Valor	32 + 4 + 3	PRE	3	5	5	4	4	3	5169
LSD (P=0.10)			NS	3	NS	NS	NS	NS	NS
CV (%)			75	62	92	113	140	203	16
Treatment Prob (F)			0.3194	0.0124	0.1213	0.7289	0.3866	0.6857	0.3082

^a All treatments applied with Induce (0.25 %v/v); GM - Gramoxone, DM = Dual Magnum, DAC = days after cracking, LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, NS = not significant; No PRE Yield = 3717 lb/A



Table 11. Peanut leaf spot and yield with Lucento based fungicide programs at Fort Cobb, 2022.

				DAP			
		79	91	112	128	149	Yield
Treatment ^a	Timing			% Injury			lb/A
Untreated		0.0	0.0	0.0	0.3	0.3	4183
Lucento, Bravo, Folicur, Lucento	75, 90, 90, 105	0.0	0.0	0.0	0.0	0.3	5088
Lucento, Headline, Lucento	75, 90, 105	0.0	0.0	0.0	0.3	0.0	4635
Lucento, Abound, Lucento	75, 90, 105	0.0	0.0	0.0	0.0	0.0	4731
Lucento, Fontelis, Lucento	75, 90, 105	0.0	0.0	0.0	0.0	0.5	3949
Bravo, Folicur, Lucento, Bravo, Folicur, Lucento	60, 60, 75, 75, 75 105	0.0	0.0	0.0	0.3	0.3	3991
Bravo, Folicur, Lucento, Headline, Lucento	60, 75, 90, 105	0.0	0.0	0.0	0.3	0.0	4087
Bravo, Folicur, Lucento, Abound, Lucento	60, 60, 75, 90, 105	0.0	0.0	0.0	0.5	0.0	4402
Fopsin, Penncozeb, Lucento, Abound, Lucento	60, 60, 75, 90, 105	0.0	0.0	0.0	0.5	0.0	4275
Bravo, Folicur, Abound, Abound	75, 75, 90, 105	0.0	0.0	0.0	0.5	0.3	3648
SD (P=0.10)		NS	NS	NS	NS	NS	759
CV (%)		0	0	0	187	247	15
Freatment Prob (F)		1.000	1.000	1.000	0.651	0.545	0.109

^a Treatment rates in fl oz/A: Lucento = 5.5, Bravo Weather Stik = 20, Folicur = 7.2, Headline = 12, Abound Flowable = 18.5, Fontelis = 20, Topisin M WSB = 0.5 lb/A, Penncozeb 75 DF = 1.5 lb/A; DAP = days after planting; Florida Leaf Spot Scale: 0 = No disease, 1 = very few lesions, 10 = plant death