

RD4AG-Research Designed for Agriculture



Phototoxicity of Kalo Drift -X when used with herbicides in Cotton

Trial ID: 0809-03
 Protocol ID: Kalo Drift-X
 Project ID:

Location: Yuma, AZ
 Investigator: Steve West
 Study Director: Steve West
 Sponsor Contact: David Gehrts
 Trial Year: 2019

	C -	C -	C -	C -	C -
	BCOT	BCOT	BCOT	BCOT	BCOT
Crop Type, Code	Gossypium hirs>	Gossypium hirs>	Gossypium hirs>	Gossypium hirs>	Gossypium hirs>
BBCH Scale	American uplan>	American uplan>	American uplan>	American uplan>	American uplan>
Crop Scientific Name	27 Jun 2019	1 Jul 2019	4 Jul 2019	8 Jul 2019	19 Sep 2019
Crop Name	6:00 AM	7:15 AM	5:45 AM	6:15 AM	10:15 AM
Rating Date	7	8	4	5	6
Rating Time	X001	X001	X001	X001	X001
SE Group No.	% General phyt>	% General phyt>	% General phyt>	% General phyt>	% General phyt>
SE Name	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -
SE Description	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN
Part Rated	%	%	%	%	%
Rating Type	NC	NC	NC	NC	NC
Rating Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Calculation	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Collection Basis	1	1	1	1	1
Reporting Basis	1	1	1	1	1
Number of Subsamples	BBCH	BBCH	BBCH	BBCH	BBCH
Crop Stage Scale	19	19	52	52	61
Crop Stage Majority	S West	S West	S West	S West	K Roche
Assessed By	27 Jun 2019	1 Jul 2019	4 Jul 2019	8 Jul 2019	22 Jul 2019
Data Entry Date	3 3	7 7	10 10	14 14	87 87
Days After First/Last Applic.	3 DA-A	7 DA-A	10 DA-A	14 DA-A	35 DA-A
Trt-Eval Interval	56 DP-1	60 DP-1	63 DP-1	67 DP-1	140 DP-1
Plant-Eval Interval	47 DE-1	51 DE-1	54 DE-1	58 DE-1	131 DE-1
Days After Emergence					
Trt No.	1*	2*	3*	4*	5*
Treatment Name	1 Drift-X	2 Glyfos Plus	3 Drift-X	4 Glyfos Plus	5 Drift-X
Rate	1 % v/v	48 oz/a	1 % v/v	64 oz/a	1 % v/v
Rate Unit	AMS	AMS	AMS	AMS	AMS
Appl Code	A	A	A	A	A
	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
	17 lb/100 gal A	17 lb/100 gal A	17 lb/100 gal A	17 lb/100 gal A	17 lb/100 gal A
	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
LSD P=.05 (% mean diff)	.	.	.	.	.
Standard Deviation	0.00	0.00	0.00	0.00	0.00
CV	0.0	0.0	0.0	0.0	0.0
Grand Mean	0.00	0.00	0.00	0.00	0.00
Levene's F	0.00	0.00	0.00	0.00	0.00
Levene's Prob(F)	.	.	.	.	.
Skewness	.	.	.	.	.
Kurtosis	.	.	.	.	.
Minimum Replicates (power = 80)	.	.	.	.	.
Largest Mean Difference (% mean diff)	.	.	.	.	.

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,2,3,4,5 because error mean square = 0.

Could not calculate Largest Mean Difference (% mean diff) for columns 1,2,3,4,5 because Grand Mean = 0 which results in division by 0.

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Phytotoxicity of Kalo Drift -X when used with herbicides in Cotton		
Trial ID: 0809-03	Location: Yuma, AZ	Trial Year: 2019
Protocol ID: Kalo Drift-X	Investigator: Steve West	
Project ID:	Study Director: Steve West	
	Sponsor Contact: David Gehrts	

Randomized Complete Block (RCB) Least square estimation AOV For C BCOT Gossypium hirsutum American upland cotton 27 Jun 2019 6:00 AM 7 X001 % General phyto on plants (all symptoms) PLANT PHYGEN % NC 1 PLOT 1 PLOT 1 PLOT 1 BBCH 19 S West 27 Jun 2019 3 3 3 DA-A 56 DP-1 47 DE-1 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	19	0.0000000000000000^			
Replicate	3	0.0000000000000000	0.0000000000000000	0.000	1.0000
Treatment Type III	4	0.0000000000000000	0.0000000000000000	0.000	1.0000
Error(adj)	12	0.0000000000000000			

^ Total Sum of Squares may not equal Sum of Squares reported on this table because adjusted sum of squares are reported.

Randomized Complete Block (RCB) Least square estimation AOV For C BCOT Gossypium hirsutum American upland cotton 1 Jul 2019 7:15 AM 8 X001 % General phyto on plants (all symptoms) PLANT PHYGEN % NC 1 PLOT 1 PLOT 1 PLOT 1 BBCH 19 S West 1 Jul 2019 7 7 7 DA-A 60 DP-1 51 DE-1 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	19	0.0000000000000000^			
Replicate	3	0.0000000000000000	0.0000000000000000	0.000	1.0000
Treatment Type III	4	0.0000000000000000	0.0000000000000000	0.000	1.0000
Error(adj)	12	0.0000000000000000			

^ Total Sum of Squares may not equal Sum of Squares reported on this table because adjusted sum of squares are reported.

Randomized Complete Block (RCB) Least square estimation AOV For C BCOT Gossypium hirsutum American upland cotton 4 Jul 2019 5:45 AM 4 X001 % General phyto on plants (all symptoms) PLANT PHYGEN % NC 1 PLOT 1 PLOT 1 PLOT 1 BBCH 52 S West 4 Jul 2019 10 10 10 DA-A 63 DP-1 54 DE-1 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	19	0.0000000000000000^			
Replicate	3	0.0000000000000000	0.0000000000000000	0.000	1.0000
Treatment Type III	4	0.0000000000000000	0.0000000000000000	0.000	1.0000
Error(adj)	12	0.0000000000000000			

^ Total Sum of Squares may not equal Sum of Squares reported on this table because adjusted sum of squares are reported.

Randomized Complete Block (RCB) Least square estimation AOV For C BCOT Gossypium hirsutum American upland cotton 8 Jul 2019 6:15 AM 5 X001 % General phyto on plants (all symptoms) PLANT PHYGEN % NC 1 PLOT 1 PLOT 1 PLOT 1 BBCH 52 S West 8 Jul 2019 14 14 14 DA-A 67 DP-1 58 DE-1 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	19	0.0000000000000000^			
Replicate	3	0.0000000000000000	0.0000000000000000	0.000	1.0000
Treatment Type III	4	0.0000000000000000	0.0000000000000000	0.000	1.0000
Error(adj)	12	0.0000000000000000			

^ Total Sum of Squares may not equal Sum of Squares reported on this table because adjusted sum of squares are reported.

Randomized Complete Block (RCB) Least square estimation AOV For C BCOT Gossypium hirsutum American upland cotton 19 Sep 2019 10:15 AM 6 X001 % General phyto on plants (all symptoms) PLANT PHYGEN % NC 1 PLOT 1 PLOT 1 PLOT 1 BBCH 61 K Roche 22 Jul 2019 87 87 35 DA-A 140 DP-1 131 DE-1 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	19	0.0000000000000000^			
Replicate	3	0.0000000000000000	0.0000000000000000	0.000	1.0000
Treatment Type III	4	0.0000000000000000	0.0000000000000000	0.000	1.0000
Error(adj)	12	0.0000000000000000			

^ Total Sum of Squares may not equal Sum of Squares reported on this table because adjusted sum of squares are reported.

Crop Type Code
 C, G-ByrC7 = EPPO species (Bayer) codes
 , BCOT, Gossypium hirsutum, American upland cotton = US

SE Name
 FFFFFFFF, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFF, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,
 FFFFFFFE, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFE, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,
 FFFFFFFD, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFD, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,
 FFFFFFFC, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFC, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,
 FFFFFFFB, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFB, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,

Part Rated
 PLANT = plant

Rating Type
 PHYGEN = phytotoxicity - general / injury

Rating Unit
 % = percent

Calculation
 NC = no calculation

PLOT = total plot
 PLOT = total plot

RD4AG-Research Designed for Agriculture

Phytoxicity of Kalo Drift -X when used with herbicides in Cotton

Trial ID: 0809-03 Location: Yuma, AZ Trial Year: 2019
Protocol ID: Kalo Drift-X Investigator: Steve West
Project ID: Study Director: Steve West
Sponsor Contact: David Gehrts

PLOT = total plot

Crop Stage Scale

BBCH = BBCH uniform plant stages

Crop Stage Majority

19 = 9 or more true leaves unfolded; no side shoots visible

52 = match-head square

61 = Early bloom

Plant-Eval Interval

56 DP-1 = 1 GOSHI 2 May 2019

60 DP-1 = 1 GOSHI 2 May 2019

63 DP-1 = 1 GOSHI 2 May 2019

67 DP-1 = 1 GOSHI 2 May 2019

140 DP-1 = 1 GOSHI 2 May 2019

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Photoxicity of Kalo Drift -X when used with herbicides in Cotton

Trial ID: 0809-03 Location: Yuma, AZ Trial Year: 2019
 Protocol ID: Kalo Drift-X Investigator: Steve West
 Project ID: Study Director: Steve West
 Sponsor Contact: David Gehrts

Crop Description
Crop 1: C GOSHI Gossypium hirsutum American upland cotton **BBCH Scale:** BCOT
Entry Date: 16 Sep 2019
Planting Date: 2 May 2019 **Planting Rate:** 35000 S/A
Depth: 1.5 IN
Rows per Plot: 4
Row Spacing: 3.5 FT **Planting Method:** PLANTD planted
Spacing within Row: 4 IN **Planting Equipment:** VP vacuum planter
Seed Bed: SMOOTH smooth
Soil Moisture: DRY dry
Emergence Date: 11 May 2019

Site and Design
Treated Plot Width: 14 FT
Treated Plot Length: 100 FT
Treated Plot Area: 1400 FT2 **Treatments:** 5
Replications: 4 **Study Design:** RACOB Randomized Complete Block (RCB)

Maintenance

No.	Date	Type	Maintenance Product Name	Description	Rate	Rate Unit
1.	23 May 2019	HERB	Dual Mag		21	OZ/A
2.	3 May 2019	FERT	18-22.5	45 n 56 p	25	GAL/A
3.	23 May 2019	FERT	UN-32	28 units N	8	GAL/A
4.	7 Jun 2019	FERT	UN-32	28 units N	8	GAL/A
5.	17 Jun 2019	FERT	UN-32	28 units N	8	GAL/A
6.	5 Jul 2019	FERT	UN-32	28 units N	8	GAL/A
7.	22 Jul 2019	FERT	UN-32	28 units N	8	GAL/A

Soil Description
Description Name: Camel
% Sand: 87 **% OM:** 0.5 **Texture:** LS loamy sand
% Silt: 6 **pH:** 8.1 **Soil Name:** Superstion
% Clay: 7 **CEC:** 9 **Fert. Level:** P poor
Soil Drainage: E excellent

Moisture and Weather Conditions
Overall Moisture Conditions: NORMAL normal
Closest Weather Station: NOAA KNYL **Distance:** 1.5 mi **Official Weather Station:** X

No.	Date	Moisture Total	Unit	Precipitation	Unit	Min Temp	Max Temp	Avg Temp	Temp Unit	% Relative Humidity	Avg Wind	Unit	Avg Shortwave Radiation	Unit	Soil
1.	1 Jun 2019	0	IN	0	IN	58.28	93.56	78.26	F	33.5	6	MPH	29.48	MJ/m40	86.
2.	2 Jun 2019	0	IN	0	IN	60.98	92.48	77.54	F	37.6	5	MPH	29.27	MJ/m41	87.
3.	3 Jun 2019	0	IN	0	IN	59.72	94.82	77.9	F	35.7	4	MPH	29.43	MJ/m42	87.
4.	4 Jun 2019	0	IN	0	IN	61.16	98.42	79.88	F	36.8	4	MPH	29.05	MJ/m43	88.
5.	5 Jun 2019	0	IN	0	IN	64.4	101.84	83.12	F	31.7	5	MPH	29	MJ/m44	89.
6.	6 Jun 2019	0	IN	0	IN	66.38	100.58	83.3	F	35.4	7	MPH	29.22	MJ/m45	89.
7.	7 Jun 2019	0	IN	0	IN	62.24	100.22	82.22	F	38	5	MPH	28.94	MJ/m46	90.
8.	8 Jun 2019	0	IN	0	IN	65.3	100.4	82.94	F	39.7	4	MPH	29.21	MJ/m47	91.
9.	9 Jun 2019	0	IN	0	IN	61.16	105.98	84.56	F	32.5	3	MPH	29.19	MJ/m48	91.
10.	10 Jun 2019	0	IN	0	IN	64.94	110.3	89.78	F	24.7	3	MPH	29.39	MJ/m49	94.
11.	11 Jun 2019	0	IN	0	IN	67.1	113.36	91.04	F	25.4	3	MPH	28.42	MJ/m50	95
12.	12 Jun 2019	0	IN	0	IN	69.8	114.44	94.1	F	25.7	3	MPH	29.05	MJ/m51	96.
13.	13 Jun 2019	0	IN	0	IN	80.06	107.6	94.1	F	19.2	7	MPH	24.75	MJ/m52	96.
14.	14 Jun 2019	0	IN	0	IN	64.94	104.18	87.08	F	20.9	6	MPH	29.6	MJ/m53	93.
15.	15 Jun 2019	0	IN	0	IN	68.72	104.36	86.9	F	35.7	4	MPH	29.1	MJ/m54	94.
16.	16 Jun 2019	0	IN	0	IN	69.08	104.9	86.72	F	28.8	5	MPH	28.73	MJ/m55	94.
17.	17 Jun 2019	0	IN	0	IN	68.18	101.84	85.46	F	35.6	4	MPH	28.94	MJ/m56	95
18.	18 Jun 2019	0	IN	0	IN	67.82	103.1	85.46	F	27.2	3	MPH	30.01	MJ/m57	95.
19.	19 Jun 2019	0	IN	0	IN	62.78	103.64	84.92	F	30	4	MPH	29.83	MJ/m58	94.
20.	20 Jun 2019	0	IN	0	IN	65.84	106.16	87.26	F	28.7	5	MPH	29.27	MJ/m59	94.

RD4AG-Research Designed for Agriculture**Photoxicity of Kalo Drift -X when used with herbicides in Cotton**

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 Project ID:

Location: Yuma, AZ
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 Study Director: Steve West
 Sponsor Contact: David Gehrts

Trial Year: 2019

21.	21 Jun 2019	0	IN	0	IN	67.46	100.76	84.92	F	28.8	6	MPH	29.42	MJ/m60	94.
22.	22 Jun 2019	0	IN	0	IN	69.26	100.76	84.38	F	33.5	6	MPH	29.59	MJ/m61	93.
23.	23 Jun 2019	0	IN	0	IN	62.78	104.36	84.38	F	34.9	3	MPH	30.19	MJ/m62	94.
24.	24 Jun 2019	0	IN	0	IN	62.78	104.9	85.46	F	30.9	3	MPH	29.77	MJ/m63	94.
25.	25 Jun 2019	0	IN	0	IN	65.48	102.38	85.1	F	27.2	6	MPH	28.54	MJ/m64	92.
26.	26 Jun 2019	0	IN	0	IN	68.9	101.3	84.56	F	27.9	6	MPH	29.43	MJ/m65	93.
27.	27 Jun 2019	0	IN	0	IN	65.3	103.46	84.92	F	25.2	5	MPH	30.26	MJ/m66	92.
28.	28 Jun 2019	0	IN	0	IN	65.3	104.9	87.44	F	23	4	MPH	26.81	MJ/m67	92.
29.	29 Jun 2019	0	IN	0	IN	77.9	105.98	92.66	F	15.6	6	MPH	17.57	MJ/m68	92.
30.	30 Jun 2019	0	IN	0	IN	75.92	108.14	94.28	F	18.4	7	MPH	27.34	MJ/m69	96.
31.	1 Jul 2019	0	IN	0	IN	78.8	111.38	96.44	F	15.2	7	MPH	29.29	MJ/m70	98.
32.	2 Jul 2019	0	IN	0	IN	71.42	107.06	90.14	F	30.1	4	MPH	29.43	MJ/m71	97.
33.	3 Jul 2019	0	IN	0	IN	66.38	104.9	87.98	F	30.3	4	MPH	29.13	MJ/m72	96.
34.	4 Jul 2019	0	IN	0	IN	67.28	104.9	87.98	F	26.5	4	MPH	29.42	MJ/m73	96.
35.	5 Jul 2019	0	IN	0	IN	68.9	105.26	88.16	F	29.9	4	MPH	29.26	MJ/m74	96.
36.	6 Jul 2019	0	IN	0	IN	69.44	105.8	88.34	F	25	4	MPH	29.39	MJ/m75	96.
37.	7 Jul 2019	0	IN	0	IN	67.82	104	87.62	F	23.2	4	MPH	24.95	MJ/m76	94.
38.	8 Jul 2019	0	IN	0	IN	64.76	103.64	86.72	F	24.2	4	MPH	29.36	MJ/m77	94.
39.	9 Jul 2019	0	IN	0	IN	66.74	104.9	87.62	F	27.3	2	MPH	29.21	MJ/m78	96.
40.	10 Jul 2019	0	IN	0	IN	70.52	109.04	91.04	F	27.8	3	MPH	28.57	MJ/m79	97.
41.	11 Jul 2019	0	IN	0	IN	75.56	106.16	93.2	F	25.6	4	MPH	13.45	MJ/m80	94.
42.	12 Jul 2019	0	IN	0	IN	74.48	115.16	95.9	F	29.1	3	MPH	27.37	MJ/m81	98.
43.	13 Jul 2019	0	IN	0	IN	81.32	109.04	94.64	F	38	8	MPH	27.61	MJ/m82	101
44.	14 Jul 2019	0	IN	0	IN	82.4	109.76	94.82	F	40.6	5	MPH	26.97	MJ/m83	102
45.	15 Jul 2019	0	IN	0	IN	79.52	115.34	97.88	F	24.8	5	MPH	28.03	MJ/m84	102
46.	16 Jul 2019	0	IN	0	IN	78.8	113.9	98.6	F	19.1	7	MPH	28.48	MJ/m85	100
47.	17 Jul 2019	0	IN	0	IN	76.46	105.98	91.04	F	45	9	MPH	27.04	MJ/m86	101
48.	18 Jul 2019	0	IN	0	IN	76.1	107.96	92.48	F	33.6	4	MPH	28.02	MJ/m87	100
49.	19 Jul 2019	0	IN	0	IN	81.5	108.5	94.82	F	15.6	6	MPH	28.72	MJ/m88	99.
50.	20 Jul 2019	0	IN	0	IN	70.88	107.96	91.94	F	26.9	4	MPH	27.91	MJ/m89	100
51.	21 Jul 2019	0	IN	0	IN	77.9	105.44	92.3	F	49.6	7	MPH	27.07	MJ/m90	101
52.	22 Jul 2019	0	IN	0	IN	84.2	103.46	91.94	F	48.5	5	MPH	14.68	MJ/m91	99.
53.	23 Jul 2019	0	IN	0	IN	79.7	110.3	95.18	F	38.8	4	MPH	26.37	MJ/m92	101
54.	24 Jul 2019	0	IN	0	IN	84.38	100.04	90.32	F	48.8	6	MPH	11.16	MJ/m93	98.
55.	25 Jul 2019	0	IN	0	IN	80.6	108.5	93.38	F	44.5	5	MPH	25.1	MJ/m94	99.
56.	26 Jul 2019	0	IN	0	IN	79.7	109.22	95.72	F	37.8	4	MPH	26.42	MJ/m95	102
57.	27 Jul 2019	0	IN	0	IN	83.48	115.16	98.6	F	33.1	4	MPH	26.58	MJ/m96	104
58.	28 Jul 2019	0	IN	0	IN	85.28	112.1	97.88	F	37.3	8	MPH	25.33	MJ/m97	104
59.	29 Jul 2019	0	IN	0	IN	81.86	110.48	94.28	F	43.3	8	MPH	23.97	MJ/m98	102
60.	30 Jul 2019	0	IN	0	IN	86	104.36	93.2	F	47.8	8	MPH	17.51	MJ/m99	100
61.	31 Jul 2019	0	IN	0	IN	83.66	105.26	92.66	F	45.5	7	MPH	22.68	MJ/m100	102
62.	1 Aug 2019	0	IN	0	IN	79.88	108.86	94.82	F	35.3	3	MPH	25.9	MJ/m101	102
63.	2 Aug 2019	0	IN	0	IN	79.7	111.92	96.26	F	31.1	4	MPH	25.05	MJ/m102	102
64.	3 Aug 2019	0	IN	0	IN	79.16	112.1	96.26	F	33.8	4	MPH	24.61	MJ/m103	102
65.	4 Aug 2019	0	IN	0	IN	80.96	114.44	98.24	F	30.9	4	MPH	25.8	MJ/m104	103
66.	5 Aug 2019	0	IN	0	IN	79.34	115.16	96.62	F	31	5	MPH	24.22	MJ/m105	102
67.	6 Aug 2019	0	IN	0	IN	88.16	109.58	96.98	F	37	4	MPH	15.59	MJ/m106	102
68.	7 Aug 2019	0	IN	0	IN	85.1	105.98	93.56	F	45.8	6	MPH	21.29	MJ/m107	101
69.	8 Aug 2019	0	IN	0	IN	79.34	109.4	95	F	35.6	4	MPH	25.55	MJ/m108	101
70.	9 Aug 2019	0	IN	0	IN	80.78	105.44	92.66	F	44.3	4	MPH	25.27	MJ/m109	102
71.	10 Aug 2019	0	IN	0	IN	77.18	104	90.32	F	50.7	6	MPH	25.17	MJ/m110	101
72.	11 Aug 2019	0	IN	0	IN	76.1	105.62	90.32	F	40	4	MPH	26.49	MJ/m111	99.
73.	12 Aug 2019	0	IN	0	IN	73.4	106.88	90.5	F	32.4	4	MPH	26.59	MJ/m112	97.

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	Sponsor Contact: David Gehrts	

Application Description

	A
Application Date	24 Jun 2019
Appl. Start Time	1:25 PM
Appl. Stop Time	1:45 PM
Application Method	SPRAY
Application Timing	POST
Application Placement	FOLIAR
Applied By	Steve West
Appl. Entry Date	25 Jun 2019
Air Temperature Start, Stop	100 101 F
% Relative Humidity Start, Stop	18 18
Wind Velocity+Dir. Start	2 MPH SW
Wind Velocity+Dir. Stop	2 MPH SW
Wind Velocity+Dir. Max	3 MPH SW
Wet Leaves (Y/N)	N no
Soil Temperature	90 F
Soil Moisture	NORMAL
Soil Surface Condition	SMOOTH
% Cloud Cover	0

Comment:

Applicaion went fine

Protocol Application Directions:

Broadcast over the top in 20 GPA with finer tips (twinjet 2's) at 40 psi

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	GOSHI BCOT
Days after Emergence	44
Stage Scale Used	BBCH
Stage Majority, Percent	19 100
Stage Minimum, Percent	19 100
Stage Maximum, Percent	19 100
Crop Growth Condition	NO normal
Height Average	12 IN
Crop Coverage (%)	20

RD4AG-Research Designed for Agriculture

Phytotoxicity of Kalo Drift -X when used with herbicides in Cotton

Trial ID: 0809-03	Location: Yuma, AZ	Trial Year: 2019
Protocol ID: Kalo Drift-X	Investigator: Steve West	
Project ID:	Study Director: Steve West	
	Sponsor Contact: David Gehrts	

Application Equipment

	A
Appl. Equipment	HIGH CYCLE
Equipment Type	HICLSP
Operation Pressure	40 PSI
Nozzle Type	COHOSW
Nozzle Size	D3/25+TJ3
Nozzle Spacing	12 IN
Nozzles/Row	3
Band Width	14 FT
% Coverage	100
Boom Length	14 FT
Ground Speed	2.4 MPH
Carrier	WATER
Application Amount	20 GAL/AC
Minimum Mix/Treatment	2.571 GAL
Mix Size	3 GAL
Spray pH	7
Propellant	COMAIR

Equipment Comment: Drop Nozzles--Twin jet over top, and cone drops on each side excellent coverage

Date	By	Context	Notes
29 May 2019	Steve West	STATUS	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
25 Jun 2019	Steve West	STATUS	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

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SE Definitions

	1.	2.	3.	4.
Rating Timing	A1	A2	A3	A4
SE Name	X001	X001	X001	X001
SE Description	% General phyto on plants (all symptoms)	% General phyto on plants (all symptoms)	% General phyto on plants (all symptoms)	% General phyto on plants (all symptoms)
Part Rated	PLANT	PLANT	PLANT	PLANT
Rating Type	PHYGEN	PHYGEN	PHYGEN	PHYGEN
Rating Unit	%	%	%	%
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Collection Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Reporting Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Calculation	NC	NC	NC	NC
Crop Type, Code	C	C	C	C

Geographic Area/Environmental Considerations:

California Like Conditions

Cropping Considerations:

Crops that are sensitive to herbicides

Data to Collect:

3 7 10 and 14 days after application looking for Phytotoxicity

Statistical Analysis:

Anova p 0.05 and full write up for California Submission

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Block	1		2		3		4	
	109	4	209	5	309	3	409	1
	107	2	207	1	307	4	407	3
	105	1	205	3	305	2	405	5
	103	3	203	2	303	5	403	4
	101	5	201	4	301	1	401	2

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Phototoxicity of Kalo Drift -X when used with herbicides in Cotton			
Trial ID: 0809-03	Location: Yuma, AZ	Trial Year: 2019	
Protocol ID: Kalo Drift-X	Investigator: Steve West		
Project ID:	Study Director: Steve West		
Sponsor Contact: David Gehrts			

Reps: 4 Appl Code: A Plots: 14 by 100 feet
 Appl. Amount: 20 GAL/AC Mix Size: 3 GAL (total for 4 plots; minimum=2.571 GAL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code	Amt Product to Measure	Rep			
									1	2	3	4
1	Drift-X AMS	8.33 21 %	LB/GAL	EC G	1 % v/v 17 lb/100 gal	A A	A	113.6 mL/mx 231.3 g/mx	105	207	301	409
2	Glyfos Plus AMS	356 21 %	gAE/L	EC G	48 oz/a 17 lb/100 gal	A A	A	212.9 mL/mx 231.3 g/mx	107	203	305	401
3	Drift-X Glyfos Plus AMS	8.33 356 21 %	LB/GAL gAE/L	EC EC G	1 % v/v 48 oz/a 17 lb/100 gal	A A A	A	113.6 mL/mx 212.9 mL/mx 231.3 g/mx	103	205	309	407
4	Glyfos Plus AMS	356 21 %	gAE/L	EC G	64 oz/a 17 lb/100 gal	A A	A	283.9 mL/mx 231.3 g/mx	109	201	307	403
5	Drift-X Glyfos Plus AMS	8.33 356 21 %	LB/GAL gAE/L	EC EC G	1 % v/v 64 oz/a 17 lb/100 gal	A A A	A	113.6 mL/mx 283.9 mL/mx 231.3 g/mx	101	209	303	405

Sort Order: Application Code, Treatment

Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Unit	Form Type	Lot Code
425.813	mL	Drift-X	8.33	LB/GAL	EC	
1,445.818	g	AMS	21	%	G	
1,242.087	mL	Glyfos Plus	356	gAE/L	EC	

* 'Per area' calculations based on application amount= 20 GAL/AC, mix size= 3 GAL (mix size basis).

* Product amount calculations increased 25 % for overage adjustment.

* 'Per volume' calculations use spray volume= 20 GAL/AC, mix size= 3 GAL.

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	C -	C -	C -	C -	C -
Crop Type, Code	C -	C -	C -	C -	C -
BBCH Scale	BCOT	BCOT	BCOT	BCOT	BCOT
Crop Scientific Name	Gossypium hirs>	Gossypium hirs>	Gossypium hirs>	Gossypium hirs>	Gossypium hirs>
Crop Name	American uplan>	American uplan>	American uplan>	American uplan>	American uplan>
Rating Date	27 Jun 2019	1 Jul 2019	4 Jul 2019	8 Jul 2019	19 Sep 2019
Rating Time	6:00 AM	7:15 AM	5:45 AM	6:15 AM	10:15 AM
SE Group No.	7	8	4	5	6
SE Name	X001	X001	X001	X001	X001
SE Description	% General phyt>	% General phyt>	% General phyt>	% General phyt>	% General phyt>
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -
Rating Type	PHYGEN	PHYGEN	PHYGEN	PHYGEN	PHYGEN
Rating Unit	%	%	%	%	%
Calculation	NC	NC	NC	NC	NC
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Collection Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Reporting Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Number of Subsamples	1	1	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH
Crop Stage Majority	19	19	52	52	61
Assessed By	S West	S West	S West	S West	K Roche
Data Entry Date	27 Jun 2019	1 Jul 2019	4 Jul 2019	8 Jul 2019	22 Jul 2019
Days After First/Last Applic.	3 3	7 7	10 10	14 14	87 87
Trt-Eval Interval	3 DA-A	7 DA-A	10 DA-A	14 DA-A	35 DA-A
Plant-Eval Interval	56 DP-1	60 DP-1	63 DP-1	67 DP-1	140 DP-1
Days After Emergence	47 DE-1	51 DE-1	54 DE-1	58 DE-1	131 DE-1

Trt Treatment	Rate	Appl		1	2	3	4	5
No. Name	Rate Unit	Code Plot						
1 Drift-X	1 % v/v	A	105	0.0	0.0	0.0	0.0	0.0
AMS	17 lb/100 gal	A	207	0.0	0.0	0.0	0.0	0.0
			301	0.0	0.0	0.0	0.0	0.0
			409	0.0	0.0	0.0	0.0	0.0
			Mean =	0.0	0.0	0.0	0.0	0.0
2 Glyphos Plus	48 oz/a	A	107	0.0	0.0	0.0	0.0	0.0
AMS	17 lb/100 gal	A	203	0.0	0.0	0.0	0.0	0.0
			305	0.0	0.0	0.0	0.0	0.0
			401	0.0	0.0	0.0	0.0	0.0
			Mean =	0.0	0.0	0.0	0.0	0.0
3 Drift-X	1 % v/v	A	103	0.0	0.0	0.0	0.0	0.0
Glyphos Plus	48 oz/a	A	205	0.0	0.0	0.0	0.0	0.0
AMS	17 lb/100 gal	A	309	0.0	0.0	0.0	0.0	0.0
			407	0.0	0.0	0.0	0.0	0.0
			Mean =	0.0	0.0	0.0	0.0	0.0
4 Glyphos Plus	64 oz/a	A	109	0.0	0.0	0.0	0.0	0.0
AMS	17 lb/100 gal	A	201	0.0	0.0	0.0	0.0	0.0
			307	0.0	0.0	0.0	0.0	0.0
			403	0.0	0.0	0.0	0.0	0.0
			Mean =	0.0	0.0	0.0	0.0	0.0
5 Drift-X	1 % v/v	A	101	0.0	0.0	0.0	0.0	0.0
Glyphos Plus	64 oz/a	A	209	0.0	0.0	0.0	0.0	0.0
AMS	17 lb/100 gal	A	303	0.0	0.0	0.0	0.0	0.0
			405	0.0	0.0	0.0	0.0	0.0
			Mean =	0.0	0.0	0.0	0.0	0.0

Crop Type, Code
 C, G-ByrC7 = EPPO species (Bayer) codes
 , BCOT, Gossypium hirsutum, American upland cotton = US

SE Name
 FFFFFFFF, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFF, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,
 FFFFFFFE, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFE, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,
 FFFFFFFD, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFD, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,
 FFFFFFFC, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFC, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,
 FFFFFFFB, % General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , , = FFFFFFFB, %
 General phyto on plants (all symptoms), PLANT, , PHYGEN, %, NC, 1, PLOT, 1, PLOT, 1, PLOT, 1, , C, , ,

Part Rated
 PLANT = plant

Rating Type
 PHYGEN = phytotoxicity - general / injury

Rating Unit

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Project ID:

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Sponsor Contact: David Gehrts

Trial Year: 2019

% = percent

Calculation

NC = no calculation

PLOT = total plot

PLOT = total plot

PLOT = total plot

Crop Stage Scale

BBCH = BBCH uniform plant stages

Crop Stage Majority

19 = 9 or more true leaves unfolded; no side shoots visible

52 = match-head square

61 = Early bloom

Plant-Eval Interval

56 DP-1 = 1 GOSHI 2 May 2019

60 DP-1 = 1 GOSHI 2 May 2019

63 DP-1 = 1 GOSHI 2 May 2019

67 DP-1 = 1 GOSHI 2 May 2019

140 DP-1 = 1 GOSHI 2 May 2019