

LSU AgCenter
Department of Agronomy.

Roundup Ultra Max Efficacy as Affected by Nozzle Type and Spray Volume

Experiment number : 01SB10JG
Location..... : Ben Hur Research Farm - Baton Rouge, LA
Experimental design : Randomized complete block (factorial arrangement)
Number of reps : 4
Plot size : 10' X 25'
Row width/# per plot : 30"/4 (2 rows treated)
Soil type..... : clay loam
%OM : 1.5
pH : 5.9
Planting date : 06-19-01
Harvest date : N/A
Crop/Variety : Soybean/Deltapine 5915RR
Uniform std. treatment..... : N/A

Application type : POST
Date applied (mm/dd/yy)..... : 07-16-01
Time (hh:mm-hh:mm) : 10:00-11:00 am
Incorporation equipment : N/A
Incorporation depth : N/A
Air/Soil temperature (F) : 98/81
Wind (mph, direction) : 4/W
Cloud cover (%) : 15
Relative humidity (%) : 47
Soil/Leaf surface moist..... : dry/dry
Crop stage/height..... : V4-5/10-14"
Sprayer type/mph..... : trctrCA/3.75
Nozzle type/size..... : FF/(015)
Boom ht/#noz/sp. (in)..... : 18"/4/20"
GPA/psi : 15/30
Applied by : Jones

Weed species (population) -----(height/# leaves)-----
ECHCG (10-20/ft²)..... : 8-9"/6-8lf
IPOLA (2-6/ft²) : 5-7"/5-6lf
SEBEX (2-6/ft²)..... : 4-7"/4-5lf

Rainfall (in.)
0-24 hr/1-3 days..... : 0.00/0.07
4-7 days/2nd week..... : 0.06/0.92
3rd week/4th week..... : 0.93/0.83

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Comments

Treatments:

Nozzles types - Turbo TeeJet and Greenleaf AirMix/AM 100015 compared with XR TeeJet/110015 (standard nozzle)

Spray volume - 3 and 8 GPA for Turbo TeeJet and AirMix and 10 GPA for XR TeeJet

Spray pressure - 30 psi for all nozzles and ground speed was varied to change GPA

Roundup UltraMax applied at 1.2 and 1.6 pt/A to barnyardgrass, pitted morningglory, and hemp sesbania at 5 to 9 inches

Visual weed control ratings made 7 and 30 days after treatment (DAT)

Conclusion:

1. Both the Turbo TeeJet and Greenleaf AirMix nozzles were equally effective in controlling weeds when applied in either 3 or 8 GPA, and control was no less than that obtained with the XR TeeJet nozzle at 10 GPA

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Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Appl Code	ECHCG control % 07-24-01 8DAT	IPOLA control % 07-24-01 8DAT	SEBEX control % 07-24-01 8DAT	Soybean injury % 07-24-01 8DAT	ECHCG control % 08-14-01 29DAT
1	Roundup UltraMax Turbo TeeJet 3 GPA	5	L	1.2	pt pr/A	POST	63 a	54 ab	41 bc	0 a	50 c
2	Roundup UltraMax Turbo TeeJet 8 GPA	5	L	1.2	pt pr/A	POST	65 a	51 ab	33 c	0 a	66 abc
3	Roundup UltraMax Greenleaf AirMix 3 GPA	5	L	1.2	pt pr/A	POST	63 a	50 ab	38 bc	0 a	51 c
4	Roundup UltraMax Greenleaf AirMix 8 GPA	5	L	1.2	pt pr/A	POST	63 a	48 ab	37 bc	0 a	55 bc
5	Roundup UltraMax XR TeeJet 10 GPA	5	L	1.2	pt pr/A	POST	58 a	44 b	37 bc	0 a	66 abc
6	Roundup UltraMax Turbo TeeJet 3 GPA	5	L	1.6	pt pr/A	POST	70 a	56 ab	51 ab	0 a	83 a
7	Roundup UltraMax Turbo Teejet 8 GPA	5	L	1.6	pt pr/A	POST	69 a	51 ab	45 abc	0 a	68 abc
8	Roundup UltraMax Greenleaf AirMix 3 GPA	5	L	1.6	pt pr/A	POST	70 a	49 ab	57 a	0 a	54 bc
9	Roundup UltraMax Greenleaf AirMix 8 GPA	5	L	1.6	pt pr/A	POST	64 a	49 ab	36 c	0 a	65 abc
10	Roundup UltraMax XR TeeJet 10 GPA	5	L	1.6	pt pr/A	POST	64 a	59 a	35 c	0 a	74 ab
11	Nontreated						0 b	0 c	0 d	0 a	0 d
	LSD (P=.05)						14.5	11.9	13.0	0.0	18.6
	Standard Deviation						10.0	8.2	8.9	0.0	12.9
	CV						17.05	17.72	23.99	0.0	22.43
	Replicate F						0.655	2.222	1.800	0.000	0.662
	Replicate Prob(F)						0.5860	0.1060	0.1753	1.0000	0.5822
	Treatment F						15.702	15.027	10.402	0.000	11.191
	Treatment Prob(F)						0.0001	0.0001	0.0001	1.0000	0.0001

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Trt No	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Appl Code	SEBEX control % 08-14-01 29DAT	IPOLA control % 08-14-01 29DAT	Soybean injury % 08-14-01 8DAT
1	Roundup UltraMax Turbo TeeJet 3 GPA	5	L	1.2	pt pr/A	POST	76 ab	71 ab	0 a
2	Roundup UltraMax Turbo TeeJet 8 GPA	5	L	1.2	pt pr/A	POST	53 c	69 ab	0 a
3	Roundup UltraMax Greenleaf AirMix 3 GPA	5	L	1.2	pt pr/A	POST	75 ab	84 a	0 a
4	Roundup UltraMax Greenleaf AirMix 8 GPA	5	L	1.2	pt pr/A	POST	60 bc	65 ab	0 a
5	Roundup UltraMax XR Teejet 10 GPA	5	L	1.2	pt pr/A	POST	65 abc	51 b	0 a
6	Roundup UltraMax Turbo TeeJet 3 GPA	5	L	1.6	pt pr/A	POST	64 abc	70 ab	0 a
7	Roundup UltraMax Turbo TeeJet 8 GPA	5	L	1.6	pt pr/A	POST	71 ab	60 ab	0 a
8	Roundup UltraMax Greenleaf AirMix 3 GPA	5	L	1.6	pt pr/A	POST	70 ab	71 ab	0 a
9	Roundup UltraMax Greenleaf AirMix 8 GPA	5	L	1.6	pt pr/A	POST	68 abc	68 ab	0 a
10	Roundup UltraMax XR TeeJet 10 GPA	5	L	1.6	pt pr/A	POST	79 a	68 ab	0 a
11	Nontreated						0 d	0 c	0 a
	LSD (P=.05)						15.1	20.9	0.0
	Standard Deviation						10.5	14.5	0.0
	CV						16.96	23.51	0.0
	Replicate F						0.538	0.445	0.000
	Replicate Prob(F)						0.6602	0.7224	1.0000
	Treatment F						17.402	9.163	0.000
	Treatment Prob(F)						0.0001	0.0001	1.0000