

Control of 1- to 2- Leaf Crabgrass

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Background/Objective: Evaluate herbicides alone and in combination for crabgrass control.

Site Information

Location:	William H. Daniel Research and Diagnostic Center
Soil Type:	Starks-Fincastle silt loam
Soil pH:	7.2
Turfgrass Species:	Kentucky bluegrass blend
Turf Condition:	fair
Turf Management: Mowing Height cm (in):	6.4 (2.5)
Fertilization:	1 lb N/M/YR
Irrigation:	To prevent moisture stress
Testing on Site Previous Year:	none
Target Pest:	crabgrass (<i>Digitaria sp.</i>)
Growth Stage:	1 to 2 leaf

Application Information

Application Date:	2 June	23 June
Application Time:	8:30 a.m.	1:00 p.m.
Air Temperature C⁰(F⁰):	16.8 (62)	26 (79)
Relative Humidity(%):	82	54
Wind Speed m s⁻¹ (mph):	0.6 (1.3)	1.8 (4)
Soil Temperature(7.6 cm depth) C⁰(F⁰):	18.9 (66)	28.9 (84)
Soil Moisture:	moist	moist
Spray Volume L ha⁻¹ (gal 1000 ft⁻²):	814 (2)	
Spray Pressure:	30psi	
Spray Nozzle:	8001.5	
Spray Equipment:	CO ₂ backpack and shakerbottle	
Irrigation After Application:	None	
Experimental Design:	Randomized complete block	
Replications:	3	
Plot Size m (ft):	1.5 X 1.5 (5 X 5)	

Results:

- This was a difficult test for crabgrass because the site was Kentucky bluegrass mowed at 1 inch, plus July heat and rain caused a late flush of germination and maturation of crabgrass.
- By 6 July, most of the herbicides provided good to excellent control of crabgrass compared to the check, led by mesotrione at 0.25+0.25 lb ai/A.
- Control from many of the herbicide treatments started to suffer by 25 July. The split applications of all the EXC treatments reduced crabgrass cover better than the single applications, other than EXC934.
- EXC881 at 173+173 lbs/A provided almost 20% less cover than the next closest treatment by 18 Aug, which was EXC878 at 173+173 lbs ai/A.

Table 1. Effect of herbicides on presence and cover of crabgrass.

Treatment	Rate of application	23 June	6 July	25 July	18 Aug
	a.i./A	presence ^a	—————% ^b —————		
Dimension Ultra 2EW	0.5	1.7	3.7	15.3	41.7
Dimension 1EC	0.5	1.7	0.7	2.7	33.3
Dimension Ultra 40WSP	0.5	2.0	0.7	5.0	28.3
EXC878 0.144G	173.0 ^d	1.3	2.0	13.3	55.0
EXC878 0.144G	173.0 ^d	2.0	1.7	3.7	23.3
EXC878 0.144G ^c	173.0 ^d				
EXC881 0.433G	173.0 ^d	1.3	1.7	5.7	33.3
EXC881 0.433G	173.0 ^d	1.7	1.0	1.3	5.0
EXC881 0.433G ^c	173.0 ^d				
EXC889 0.288G	173.0 ^d	1.3	7.7	26.7	81.7
EXC889 0.288G	173.0 ^d	1.3	1.7	9.3	51.7
EXC889 0.288G ^c	173.0 ^d				
EXC890 0.157G	173.0 ^d	1.0	6.0	33.3	90.0
EXC890 0.157G	173.0 ^d	1.3	2.0	9.0	40.0
EXC890 0.157G ^c	173.0 ^d				
EXC891 0.866G	173.0 ^d	1.0	10.0	41.7	91.7
EXC891 0.866G	173.0 ^d	1.7	1.7	11.0	40.0
EXC891 0.866G ^c	173.0 ^d				
EXC888 0.722G	173.0 ^d	1.0	13.3	43.3	96.7
EXC888 0.722G	173.0 ^d	1.0	8.0	25.0	85.0
EXC888 0.722G ^c	173.0 ^d				
EXC892 0.202G	173.0 ^d	1.7	6.0	31.7	83.3
EXC892 0.202G	173.0 ^d	1.3	3.3	16.7	65.0
EXC892 0.202G ^c	173.0 ^d				
EXC934 18.99G	150.0 ^d	1.0	18.3	46.7	95.0
EXC934 18.99G	150.0 ^d	1.0	15.0	60.0	100.0
EXC934 18.99G ^c	150.0 ^d				
Mesotrione 4SC ^e	0.25	2.0	2.0	18.3	68.3
Mesotrione 4SC ^e	0.25	1.7	0.0	4.3	28.3
Mesotrione 4SC ^{ce}	0.25				
Check		1.0	25.0	55.0	98.3
LSD (0.05)		0.7	7.4	17.3	34.5

^a 1 = crabgrass visible on plot and 2 = no crabgrass visible.

^b Percent of the plot area covered by crabgrass.

^c Indicates treatments with a three week split application with the first application 2 June and the second 23 June.

^d Rate of application was pounds product per acre.

^e Mesotrione 4SC treatments included a NIS at the rate of 0.25 percent volume per volume.