

BASF herbicide efficacy trial
Zac Reicher and Dan Weisenberger
Dept. of Agronomy
Purdue University
West Lafayette, IN
26 Sep 2008

Background/Objective: 1) Compare efficacy of Drive XLR8 to Drive 75DF to show enhanced efficacy and 2) Compare Drive XLR8 to several other postemergence crabgrass products at two different crabgrass growth stages.

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:	good
Turf Management:	Mowing Height in: 1
	Fertilization: 1 lb N/M/YR
	Irrigation: To prevent moisture stress
Testing on Site Previous Year:	none
Target Pest:	Crabgrass (<i>Digitaria</i> sp.)
Growth Stage:	4 leaf and 3 tiller

Application Information

Application Date:	23 Jun	11 Jul
Application Time:	10:00am	9:30am
Air Temperature F^o:	68	76
Relative Humidity(%):	68	76
Wind Speed mph:	6	1
Soil Temperature(3 in depth) F^o:	68	73
Soil Moisture:	moist	moist
Spray Volume gal 1000 ft⁻²:	2	
Spray Pressure:	30psi	
Spray Nozzle:	8001.5	
Spray Equipment:	CO ₂ backpack	
Irrigation After Application:	None	
Experimental Design:	Randomized complete block	
Replications:	3	
Plot Size ft:	5 X 5	

Results

- Crabgrass pressure on the experimental area was intense because of intentionally low-mowed and under-fertilized turf. In spite of this, treatments used in this study provided exceptional reduction in crabgrass cover. Sequential applications would have likely improved the control of all applications as would the inclusion of a preemergence herbicide in each tankmix, but these were outside the scope of this study.
- All herbicides applied at the 4-leaf stage reduced crabgrass cover compared to the untreated check until 8 Aug, but there was no statistical difference in control among the treatments. (Table 1)
- However by 5 Sep., crabgrass cover in the mesotrione plots applied at 3-leaf was equivalent to that in the untreated check plots. This is somewhat expected as only a single application of mesotrione was used in this study and our experience suggests two or three applications are more effective.
- Applications at the 4 tiller stage provided results similar to those at the 3-leaf stage. All herbicides applied at the 4-tiller stage reduced crabgrass cover to <10% by 8 Aug, but there was no statistical differences in control among the herbicide treatments.

Table 1. Percent cover of and injury to crabgrass after applications of postemergence herbicides.

Treatment	Rate of application	Application timing ^c	16 Jul	24 Jul	29 Jul	8 Aug	5 Sep	24 Jul
	oz prod/M		-----% cover ^a -----					injury ^b
Drive XLR8	1.5	4L	1	2	2	4	18	9
MSO	1.5 ^d							
Drive 75DF	0.37	4L	0	3	3	5	18	9
MSO	1.5 ^d							
Acclaim Extra	0.3	4L	1	3	3	12	20	9
Quali-Pro Quinclorac	0.37	4L	1	2	2	4	17	9
MSO	1.5 ^d							
Mesotrione 4SC	5 ^e	4L	2	10	10	17	40	9
NIS	0.25 ^f							
Check		4L	22	40	42	52	50	9
Drive XLR8	1.5	3T	3	2	3	9	21	5
MSO	1.5 ^d							
Drive 75DF	0.37	3T	4	1	2	7	22	5
MSO	1.5 ^d							
Acclaim Extra	0.64	3T	4	1	0	0	7	5
Quali-Pro Quinclorac	0.37	3T	3	2	2	2	17	2
MSO	1.5 ^d							
Mesotrione 4SC	5 ^e	3T	4	4	2	5	28	6
NIS	0.25 ^f							
Check		3T	18	33	35	52	60	9
LSD (0.05)			7	10	13	16	30	4

^a Cover is the percent of the plot area covered by crabgrass.

^b Injury to crabgrass was rated on a 1 to 9 scale with 1 = total brown, 5 = 50% brown, and 9 = no injury.

^c Application timing: 4L is 4 leaf crabgrass development with application on 23 Jun and 3T is 3 tiller crabgrass development with application on 11 Jul.

^d Rate of application was pints per acre.

^e Rate of application was ounces per acre.

^f Rate of application was percent volume per volume.