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2008 Postemergence Crabgrass Efficacy Trial

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Abstract

The objectives of this study were to compare the efficacy of Drive XLR8 to Drive 75DF and to compare Drive XLR8 to several other postemergence crabgrass products at two different crabgrass growth stages.

Keywords

Horticulture

Disciplines

Agricultural Science | Agriculture | Horticulture

2008 Postemergence Crabgrass Efficacy Trial

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Objectives

The objectives of this study were to compare the efficacy of Drive XLR8 to Drive 75DF and to compare Drive XLR8 to several other postemergence crabgrass products at two different crabgrass growth stages.

Materials and Methods

This study was conducted at the Iowa State University Horticulture Research Station, Ames, IA, on a blend of Alene, Brooklawn, and Newport Kentucky bluegrass. The soil is a disturbed Nicollet clay-loam soil, with a pH of 6.1, 4.1% organic matter, 113 ppm K, and 6 ppm P. Plots were arranged in a split-plot randomized complete block design with three replications.

Plot area was seeded with large crabgrass on April 25, 2008. Initial treatments (Table 1) were applied June 10 at the 2 to 4 leaf stage of the crabgrass, and the second application was made July 14 at the 1 to 2 tiller stage of the crabgrass. Treatments were applied using a backpack CO₂ sprayer at 40 psi, and at a spray volume equivalent to 3 gallons/1000ft².

Data were collected on percentage crabgrass control and phytotoxicity to Kentucky bluegrass (Tables 2, 3, and 4). Data collection began July 14 and concluded on August 25.

Results and Discussion

At the end of the season, all treatments reduced crabgrass populations to less than that of the untreated controls (Table 3). There was no difference between Drive XLR8 and Drive 75DF applied as an early postemergence control (Table 4). However, Drive XLR8 did provide better crabgrass control than Drive 75DF at the end of the season for the late postemergence application. There was no difference between Drive XLR8 applied as an early postemergence control to all other treatments applied as an early postemergence control. However, Drive XLR8 applied as a late postemergence control provided better crabgrass control at the end of the season than all treatments applied as a late postemergence control, with the exception of Acclaim, for which there was no difference.

Phytotoxicity was observed only on plots treated with late postemergence application of Acclaim (high rate – 0.64 oz/1000ft²) (Table 2). All other treatments did no damage to the Kentucky bluegrass.

One observation that was made during the mixing process was that the QuinStar 75DF was much more difficult to mix than the Drive 75DF. We make solutions of the product in order to pipette the appropriate amount of chemical into our treatment bottles in order to spray 25ft² plots. The QuinStar would not go into solution as easily as the Drive 75DF.

Table 1. Treatment list and application timing for BASF crabgrass control study.

Trt	Product	Rate	Rate/25ft ²	MSO rate	Application date
1	Control	-			
2a [¶]	Drive XLR8	1.5 oz/1000	1.11 mL	0.41 mL	June 10
2b	Drive XLR8	1.5 oz/1000	1.11 mL	0.41 mL	July 14
3a	Drive 75DF	0.367 oz/1000	0.26 g	0.41 mL	June 10
3b	Drive 75DF	0.367 oz/1000	0.26 g	0.41 mL	July 14
4a	Acclaim Extra	0.3 oz/1000	0.22 mL		June 10
4b	Acclaim Extra	0.64 oz/1000	0.47 mL		July 14
5a	QuinStar	0.367 oz/1000	0.26 g	0.41 mL	June 10
5b	QuinStar	0.367 oz/1000	0.26 g	0.41 mL	July 14
6a	Mesotrione	5 oz/A	0.085 mL	0.7 mL (NIS) [§]	June 10
6b	Mesotrione	5 oz/A	0.085 mL	0.7 mL (NIS)	July 14

[¶]Treatments designated as “a” are early post and “b” are late post applications.

[§]Non-ionic surfactant.

Table 2. Phytotoxicity ratings (9 = no damage; 1 = worst damage; 6 = minimum acceptable rating).

Treatments	Phytotoxicity			
	July 21	July 30	August 4	August 25
1 Control	9	9	9	9
2a Drive XLR8	9	9	9	9
2b Drive XLR8	9	9	9	9
3a Drive 75DF	9	9	9	9
3b Drive 75DF	9	9	9	9
4a Acclaim Extra	9	9	9	9
4b Acclaim Extra	7	6	8	8
5a QuinStar	9	9	9	9
5b QuinStar	9	9	9	9
6a Mesotrione	9	9	9	9
6b Mesotrione	9	9	9	9
LSD (0.05)	0	0	0	0

Table 3. Percentage crabgrass cover in plots throughout growing season.

Treatments	Percentage crabgrass		
	July 14	August 4	August 25
1 Control	18	58	63
2a Drive XLR8	1	12	17
2b Drive XLR8	12	2	6
3a Drive 75DF	0	6	12
3b Drive 75DF	10	10	20
4a Acclaim Extra	2	13	17
4b Acclaim Extra	10	1	1
5a QuinStar	0	8	13
5b QuinStar	23	22	32
6a Mesotrione	2	18	25
6b Mesotrione	19	15	20
LSD (0.05)	12	13	18

Table 4. Percentage crabgrass control in plots throughout growing season.

Treatments		Crabgrass control		
		July 14	August 4	August 25
1	Control	0	0	0
2a	Drive XLR8	99	88	83
2b	Drive XLR8	0	98	94
3a	Drive 75DF	100	94	88
3b	Drive 75DF	0	90	80
4a	Acclaim Extra	98	87	83
4b	Acclaim Extra	0	99	99
5a	QuinStar	100	92	87
5b	QuinStar	0	78	68
6a	Mesotrione	98	82	75
6b	Mesotrione	0	85	80
LSD (0.05)		1	10	12