

Creeping Bentgrass Control with Fall Applications of Mesotrione or Certainty

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Background/Objective:

To determine effectiveness of late fall applications of Certainty or mesotrione for selective creeping bentgrass control in Kentucky bluegrass.

Site Information

Location: Number 1 Rough, Coyote Crossing Golf Course
West Lafayette

Application Information

Application Date:	28 Sep	11 Oct	26 Oct	11 Nov	21 Nov
Application Time:	8:30am	8:30am	10:30am	10:00am	11:00am
Air Temperature C⁰(F⁰):	19.1 (66)	13.6 (56)	15.4 (60)	7.3 (45)	4.5 (40)
Relative Humidity(%):	73	98	63	53	62
Wind Speed m s⁻¹ (mph):	1.3 (3)	1.8 (4)	0.9 (2)	2.2 (5)	3.6 (8)
Soil Temperature(7.6 cm depth) C⁰(F⁰):	18.3 (65)	15.6 (60)	12.8 (55)	7.2 (45)	1.1 (34)
Soil Moisture:	moist	moist	moist	moist	moist
Spray Volume L ha⁻¹ (gal 1000 ft⁻²):	814 (2)				
Spray Pressure:	35psi				
Spray Nozzle:	8001.5				
Spray Equipment:	CO ₂ backpack				
Irrigation After Application:	None				
Experimental Design:	Randomized complete block				
Replications:	3				
Plot Size m (ft):	1.5 X 1.5 (5 X 5)				

Results:

Mesotrione:

When rated on 21 Nov 2005, mesotrione applied at 0.25+0.25 or 0.166+0.166+0.166 lbs ai/A starting on 28 Sep provided almost complete control of creeping bentgrass (Table 1). A single application of mesotrione at 0.5 lbs ai/A on 28 Sep reduced creeping bentgrass cover only slightly by Nov 21. Multiple applications of mesotrione are much more effective for creeping bentgrass control than single applications. Applications later in the year were less effective as mesotrione appears to lose its effectiveness on creeping bentgrass in cooler temperatures.

Most of the treated creeping bentgrass recovered by 20 April 2006, and only mesotrione at 0.166+0.166+0.166 lbs ai/A starting on 28 Sep significantly reduced creeping bentgrass cover (Table 2). This suggests that multiple applications over a number of years will be needed for complete control of creeping bentgrass with mesotrione.

Certainty:

When rated on 21 Nov 2005, a number of the Certainty treatments reduced creeping bentgrass cover and the best performing treatments were 1.0+1.0 and 1.5+1.0 oz/A initially applied on Sep 28 (Table 3). Applications of Certainty beginning after Sep 28 reduced creeping bentgrass cover on 21 Nov., but not to the extent of the earlier applications. This may be a function of limited growing season remaining after the later applications, and thus damage could not be fully detected. Certainty tends to be more active on creeping bentgrass under cooler temperatures.

Most of the treated creeping bentgrass recovered by 20 April 2006 (Table 4). The most effective Certainty treatments were 2.0 oz/A applied on 11 Oct and 1.5+1.0 oz/A beginning on 26 Oct. Like mesotrione, multiple applications over multiple years will be most effective for Creeping bentgrass control with Certainty.

Table 1. Percent cover of green bentgrass on 21 Nov 2005.

Treatment ^a	Rate of application	Initial application date		
		28 Sep	26 Oct	11 Nov
	lb ai/A	-----% cover ^b -----		
Mesotrione 4SC	0.5	68.3	66.7	
Mesotrione 4SC	0.25+0.25 ^c	4.0	81.7	90.0
Mesotrione 4SC	0.166+0.166+0.166 ^c	2.3	58.3	
Check		95.0		
LSD (0.05)		23.3		

^a Applications included NIS 0.25% v/v.

^b Percent of the plot area covered by green bentgrass.

^c Sequential applications made at 2 week intervals

Table 2. Percent cover of green bentgrass on 20 April 2006

Treatment ^a	Rate of application	Initial application date ^a		
		28 Sep	26 Oct	11 Nov
	lb ai/A	-----% cover ^b -----		
Mesotrione 4SC	0.5	98.3	93.7	
Mesotrione 4SC	0.25+0.25 ^c	78.3	83.3	97.3
Mesotrione 4SC	0.166+0.166+0.166 ^c	31.7	87.3	
Check		97.7		
LSD (0.05)		11.6		

^a Applications included NIS 0.25% v/v.

^b Percent of the plot area covered by green bentgrass.

^c Sequential applications made at 2 week intervals

Table 3. Percent cover of green bentgrass on 21 Nov 2005.

Treatment ^a	Rate of application	Initial application date			
		28 Sep	11 Oct	26 Oct	21 Nov
	oz prod/A	-----% cover ^b -----			
Certainty	1.0			75.0	78.3
Certainty	1.5			71.7	91.7
Certainty	2.0	89.3	60.0	68.3	93.3
Certainty	1.0+1.0 ^c	21.7		63.3	
Certainty	1.5+1.0 ^c	33.3		86.7	
Check		95.0			
LSD (0.05)		23.3			

^a Applications included NIS 0.25% v/v.

^b Percent of the plot area covered by green bentgrass.

^c Sequential applications made at 2 week intervals

Table 4. Percent cover of green bentgrass on 20 April 2006

Treatment ^a	Rate of application	Initial application date			
		28 Sep	11 Oct	26 Oct	21 Nov
	oz prod/A	-----% cover ^b -----			
Certainty	1.0			93.3	98.0
Certainty	1.5			97.7	97.7
Certainty	2.0	98.0	81.7	97.0	91.0
Certainty	1.0+1.0 ^c	91.0		88.3	
Certainty	1.5+1.0 ^c	97.7		81.7	
Check		97.7			
LSD (0.05)		11.6			

^a Applications included NIS 0.25% v/v.

^b Percent of the plot area covered by green bentgrass.

^c Sequential applications made at 2 week intervals