

## Mesotrione: Nimblewill Control in Turfgrass

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### Background/Objective:

Determine potential of mesotrione for controlling nimblewill.

### Site Information

<b>Location:</b>	William H. Daniel Research and Diagnostic Center
<b>Soil Type:</b>	Starks-Fincastle silt loam
<b>Soil pH:</b>	7.2
<b>Turfgrass Species:</b>	Kentucky bluegrass
<b>Turf Condition:</b>	Fair
<b>Turf Management:</b>	
<b>Mowing Height cm (in):</b>	6.4 (2.5)
<b>Fertilization:</b>	non
<b>Irrigation:</b>	To prevent moisture stress
<b>Testing on Site Previous Year:</b>	None
<b>Target Pest:</b>	Nimblewill
<b>Growth Stage:</b>	Mature

### Application Information

<b>Application Date:</b>	25 June	15 July	6 August
<b>Application Time:</b>	1:00pm	8:30am	9:00am
<b>Air Temperature C<sup>0</sup>(F<sup>0</sup>):</b>	19.4 (67)	21.8 (71)	16.5 (62)
<b>Relative Humidity(%):</b>	50	77	73
<b>Wind Speed m s<sup>-1</sup> (mph):</b>	0.9-2.7 (2-6)	0.4-1.3 (1-3)	calm
<b>Soil Temperature(7.6 cm depth) C<sup>0</sup>(F<sup>0</sup>):</b>	22.8 (73)	21.1 (70)	18.9 (66)
<b>Soil Moisture:</b>	moist	moist	moist
<b>Spray Volume L ha<sup>-1</sup> (gal 1000 ft<sup>-2</sup>):</b>	814 (2)		
<b>Spray Pressure:</b>	35psi		
<b>Spray Nozzle:</b>	8001.5		
<b>Spray Equipment:</b>	CO <sub>2</sub> backpack		
<b>Irrigation After Application:</b>	None		
<b>Experimental Design:</b>	Randomized complete block		
<b>Replications:</b>	4		
<b>Plot Size m (ft):</b>	0.75 X 0.75 (2.5 X 2.5)		

### Results

- Golf course cup cutter size plugs of nimblewill were transferred to the plot area in April and early May of 2004 and allowed to establish prior to the initial application on 25 June.
- Applications made July 15 were most effective in reducing spread of nimblewill based on rate of spread on 19 Aug.
- July 15 applications were most effective regardless if it was the sequential or only application made.
- Though the effect on transplanted plugs may not be identical to mature nimblewill stands, this study shows that mesotrione has the potential for controlling nimblewill.

**Table 1.** Effect of mesotrione on nimblewill.

Treatment	Rate of application	Application timing	Discoloration <sup>a</sup>			Presence <sup>b</sup>	Spread <sup>c</sup>
			2 July	7 July	20 July	6 Aug	19 Aug
	lb a.i./A		-----%-----				
Barricade 4FL	0.65	25 June	0.0	2.8	10.0	2.0	7.3
Mesotrione 4SC NIS	0.25 0.25 <sup>d</sup>	25 June	16.5	75.0	76.3	2.0	5.8
Mesotrione 4SC NIS	0.187 0.25 <sup>d</sup>	25 June	12.3	52.5	52.5	2.0	4.8
Mesotrione 4SC NIS	0.25 0.25 <sup>d</sup>	25 June	9.5	60.0	46.3	2.0	5.5
Mesotrione 4SC NIS	0.125 0.25 <sup>d</sup>	25 June	10.5	47.5	52.5	1.8	5.5
Mesotrione 4SC NIS	0.187 0.25 <sup>d</sup>	15 July	10.0	65.0	78.8	1.5	2.0
Mesotrione 4SC NIS	0.25 0.25 <sup>d</sup>	15 July	10.0	60.0	70.0	1.5	1.5
Mesotrione 4SC NIS	0.187 0.25 <sup>d</sup>	25 June	20.0	73.8	77.5	1.3	1.8
Mesotrione 4SC NIS	0.187 0.25 <sup>d</sup>	15 July					
Mesotrione 4SC NIS	0.25 0.25 <sup>d</sup>	25 June	11.0	42.5	75.0	1.0	1.5
Mesotrione 4SC NIS	0.25 0.25 <sup>d</sup>	15 July					
Mesotrione 4SC NIS	0.187 0.25 <sup>d</sup>	6 Aug	7.3	42.5	47.5	2.0	7.5
Mesotrione 4SC NIS	0.25 0.25 <sup>d</sup>	6 Aug	12.5	57.5	50.0	2.0	4.5
Check			0.3	6.3	10.0	2.0	6.3
LSD (0.05)			NS	28.9	24.8	0.4	2.2

<sup>a</sup> Percent of the nimblewill that was white or brown.

<sup>b</sup> 1 = nimblewill absent from plot and 2 = nimblewill present on plot.

<sup>c</sup> Increase or decrease of the nimblewill area with 5 = the size of original plug, 1 = maximum decrease, and 9 = maximum increase.

<sup>d</sup> Rate of application was percent volume per volume.