

## Tolerance of Cool-Season Turfgrass to QuickSilver Alone and in Combination with Other Herbicides

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### Background/Objective:

To determine the tolerance of common species of cool-season turfgrass to tank mixtures containing QuickSilver in combination with other postemergence herbicides.

### Site Information

<b>Location:</b>	William H. Daniel Research and Diagnostic Center, W. Lafayette, IN.
<b>Soil Type:</b>	Starks-Fincastle silt loam
<b>Soil pH:</b>	7.2
<b>Soil Organic Matter (%):</b>	4.0-6.0%
<b>Turfgrass Species:</b>	Kentucky bluegrass and turf-type tall fescue
<b>Turf Condition:</b>	Good
<b>Turf Management: Mowing Height cm (in):</b>	6.25 (2.5)
<b>Fertilization:</b>	192 kg N/ha/yr (4.0 lbs/1000 ft <sup>2</sup> /yr)
<b>Irrigation:</b>	To prevent moisture stress
<b>Testing on Site Previous Year:</b>	None
<b>Target Pest:</b>	Phytotoxicity
<b>Growth Stage:</b>	NA

### Application Information

<b>Application Date:</b>	23 May	27 June	11 Sept
<b>Application Time:</b>	7:30 AM	8:00 AM	9:30 AM
<b>Air Temperature C<sup>0</sup>(F<sup>0</sup>):</b>	14.9 (59)	16.8 (62)	23 (73)
<b>Relative Humidity(%):</b>	5	71	71
<b>Wind Speed m s<sup>-1</sup> (mph):</b>	0.9-1.3 (2-3)	Calm	1.8-2.2 (4-5)
<b>Soil Temperature(7.6 cm depth) C<sup>0</sup>(F<sup>0</sup>):</b>	13.3 (56)	18.3 (65)	21.1 (70)
<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>	3		
<b>Plot Size m (ft):</b>	1.5 X 1.5 (5 X 5)		

### Results:

There was no visible phytotoxicity from any of the treatments on Kentucky bluegrass during our study. However, phytotoxicity did occur on tall fescue on 29 May where Quicksilver at 4.2 oz/A with and without the surfactant caused noticeable phytotoxicity, but this phytotoxicity was not considered unacceptable. Quicksilver is safe on Kentucky bluegrass, but rare instances of phytotoxicity might occur on tall fescue.

Table 1. Phytotoxicity to Kentucky bluegrass from up to 3 applications of Quicksilver alone or tankmixed with other herbicides or a surfactant.

Treatment <sup>b</sup>	Rate of application	23 May	26 May	29 May	5 June	20 June	28 June	30 June	3 July	11 July	25 July	12 Sept	15 Sept	18 Sept	25 Sept	7 Oct
	oz/A															
QuickSilver	2.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver	4.2	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver	4.2	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
NIS	0.25 <sup>c</sup>															
QuickSilver	2.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Trimec Classic	4.0 <sup>d</sup>															
QuickSilver	2.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Eliminate	3.0 <sup>d</sup>															
QuickSilver	2.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Chaser 2 amine	3.5 <sup>d</sup>															
Trimec Classic	4.0 <sup>d</sup>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Eliminate	3.0 <sup>d</sup>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Chaser 2 amine	3.5 <sup>d</sup>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Vista	0.67 <sup>d</sup>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Vista	0.67 <sup>d</sup>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver	1.27															
QuickSilver <sup>e</sup>	2.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver <sup>f</sup>	2.1							9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver <sup>g</sup>	2.1											9.0	9.0	9.0	9.0	9.0
Check		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
LSD (0.05)		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

<sup>a</sup> Phytotoxicity was rated on a 1 to 9 scale where 1 = completely brown turf, 7 = acceptable damage, and 9 = no phytotoxicity.

<sup>b</sup> The same plots were used for treatments 1 thru 12 on all three spray dates.

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

<sup>d</sup> Rate of application was pints per acre.

<sup>e</sup> Treatment was applied 23 May only.

<sup>f</sup> Treatment was applied 27 June only.

<sup>g</sup> Treatment was applied 11 September only.

Table 2. Phytotoxicity to a turf-type tall fescue from up to 3 applications of Quicksilver alone or tankmixed with other herbicides or a surfactant.

Treatment <sup>b</sup>	Rate of application	23 May	26 May	29 May	5 June	20 June	28 June	30 June	3 July	11 July	25 July	12 Sept	15 Sept	18 Sept	25 Sept	7 Oct
	oz/A															
QuickSilver	2.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver	4.2	9.0	9.0	8.3	8.7	9.0	9.0	9.0	8.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver	4.2	9.0	9.0	7.7	8.3	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
NIS	0.25 <sup>c</sup>															
QuickSilver	2.1	9.0	9.0	8.7	8.7	9.0	9.0	9.0	8.3	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Trimec Classic	4.0 <sup>d</sup>															
QuickSilver	2.1	9.0	9.0	8.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Eliminate	3.0 <sup>d</sup>															
QuickSilver	2.1	9.0	9.0	9.0	8.7	9.0	9.0	9.0	8.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Chaser 2 amine	3.5 <sup>d</sup>															
Trimec Classic	4.0 <sup>d</sup>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Eliminate	3.0 <sup>d</sup>	9.0	9.0	9.0	8.7	9.0	9.0	9.0	8.3	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Chaser 2 amine	3.5 <sup>d</sup>	9.0	9.0	9.0	8.7	9.0	9.0	9.0	8.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Vista	0.67 <sup>d</sup>	9.0	9.0	9.0	8.3	9.0	9.0	9.0	8.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Vista	0.67 <sup>d</sup>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver	1.27															
QuickSilver <sup>e</sup>	2.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver <sup>f</sup>	2.1							9.0	8.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0
QuickSilver <sup>g</sup>	2.1											9.0	9.0	9.0	9.0	9.0
Check		9.0	9.0	9.0	8.7	9.0	9.0	9.0	8.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0
LSD (0.05)		NS	NS	0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

<sup>a</sup> Phytotoxicity was rated on a 1 to 9 scale where 1 = completely brown turf, 7 = acceptable damage, and 9 = no phytotoxicity.

<sup>b</sup> The same plots were used for treatments 1 thru 12 on all three spray dates.

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

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<sup>e</sup> Treatment was applied 23 May only.

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