

Quicksilver® (Carfentrazone) for Spring Broadleaf Weed Control

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Background/Objective:

Evaluate speed and efficacy of carfentrazone for spring control of dandelion.

Site Information

Location:	William H. Daniel Research and Diagnostic Center, W. Lafayette, IN.
Soil Type:	Starks-Fincastle silt loam
Soil pH:	7.2
Soil Organic Matter (%):	NA
Turfgrass Species:	Kentucky bluegrass
Turf Condition:	Fair
Turf Management: Mowing Height cm (in):	6.35 (2.5)
Fertilization:	None
Irrigation:	To prevent moisture stress
Testing on Site Previous Year:	None
Target Pest:	Dandelion (<i>Taraxacum officinale</i>)
Growth Stage:	Actively growing

Application Information

Application Date:	May 14
Application Time:	7:00 AM
Air Temperature C°(F°):	16.1 (61)
Relative Humidity(%):	58
Wind Speed m s⁻¹ (mph):	Calm
Soil Temperature (7.6 cm depth) C°(F°):	12.8 (55)
Soil Moisture:	Moist
Spray Volume L ha⁻¹ (gal 1000 ft⁻²):	814 (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 m (ft):	1.5 X 3 (5 X 10)

Results:

Quicksilver alone or in combination with any of the other products burned dandelions within three days of application, whereas treatments without Quicksilver produced only marginal burning after 5 to 8 days (Table 1). Additionally, there was no damage to the Kentucky bluegrass from Quicksilver (Table 2), which is similar to results from earlier studies. Quicksilver represents a tremendous improvement in quick burn down for the LCO market.

Quicksilver did not provide significantly lower cover of dandelion compared to the check at any time during this study (Table 3). Therefore, Quicksilver should not be applied alone. Measured two months after application, addition of Quicksilver to any of the tankmixes did not decrease control of dandelion to a statistically significant level compared to the tankmix partner alone. However, every tankmix with Quicksilver gave numerically poorer control on 8 July than when the tankmix partner was used alone. This may indicate that control measured 3 months or more after application may be decreased by Quicksilver. We will observe the plots for a few more months to help clarify this observation. Though Vista(fluroxypyr) + Quicksilver were not randomized within the experiment and thus cannot be compared to the other treatments, it appears that Quicksilver may reduce efficacy of Vista and this tankmix should be investigated more thoroughly.

Table 1. Phytotoxicity^a to dandelion after applications of Quicksilver with and without tankmix partners.

Treatment	Rate of application	17 May	19 May	22 May
Quicksilver	pints/A 1.3 ^b	4.0	5.3	7.3
Quicksilver + Trimec Classic	1.3 ^b 3.25	4.3	4.7	4.3
Quicksilver + Trimec Classic + NIS	1.3 ^b 3.25 0.25 ^c	4.0	3.0	3.3
Trimec Classic	3.25	8.3	7.3	7.0
Quicksilver + Eliminate	1.3 ^b 2.0	4.0	3.7	3.3
Eliminate	2.0	8.3	8.3	7.0
Quicksilver + Chaser 2 amine	1.3 ^b 2.0	3.0	3.3	3.3
Chaser 2 amine	2.0	8.3	7.7	7.0
Confront	1.5	8.3	8.0	7.3
Triplet SF	3.5	7.7	7.0	6.0
Check	-	9.0	9.0	8.3
LSD (0.05)		1.2	1.1	1.8
Vista + Quicksilver ^d	1.33 1.3 ^b	5.0	4.3	2.7

^a Phytotoxicity was rated on a scale of 1 to 9, with 1 = total brown, 5 = 50% of the plant brown/yellow and/or twisted/curled, and 9 = no phytotoxicity.

^b Application rate was fluid ounces of product per acre.

^c Application rate was percent volume per volume.

^d Vista+Quicksilver was a late addition and was not randomized within the other treatments. Therefore, means cannot be compared with the others and are presented for information only.

Table 2. Phytotoxicity^a to Kentucky bluegrass after applications of Quicksilver with and without tankmix partners.

Treatment	Rate of application	22 May	30 May	12 June
Quicksilver	pints/A 1.3 ^b	9	9	9
Quicksilver + Trimec Classic	1.3 ^b 3.25	9	9	9
Quicksilver + Trimec Classic + NIS	1.3 ^b 3.25 0.25 ^c	9	9	9
Trimec Classic	3.25	9	9	9
Quicksilver + Eliminate	1.3 ^b 2.0	9	9	9
Eliminate	2.0	9	9	9
Quicksilver + Chaser 2 amine	1.3 ^b 2.0	9	9	9
Chaser 2 amine	2.0	9	9	9
Confront	1.5	9	9	9
Triplet SF	3.5	9	9	9
Check	-	9	9	9
LSD (0.05)		NS	NS	NS
Vista + Quicksilver ^d	1.33 1.3 ^b	9	9	9

^a Phytotoxicity was rated on a scale of 1 to 9, with 1 = total brown, 7 = acceptable damage, and 9 = no phytotoxicity.

^b Application rate was fluid ounces of product per acre.

^c Application rate was percent volume per volume.

^d Vista+Quicksilver was a late addition and was not randomized within the other treatments. Therefore, means cannot be compared with the others and are presented for information only.

Table 3. Percent cover^a of dandelion after applications of Quicksilver with and without tankmix partners.

Treatment	Rate of application	30 May	7 June	12 June	27 June	8 July
Quicksilver	pints/A 1.3 ^b	31.7	30.0	33.3	41.7	38.3
Quicksilver + Trimec Classic	1.3 ^b 3.25	2.7	0.7	1.3	5.0	10.0
Quicksilver + Trimec Classic + NIS	1.3 ^b 3.25 0.25 ^c	7.0	1.3	1.3	4.3	6.3
Trimec Classic	3.25	4.3	0.7	0.7	1.7	1.7
Quicksilver + Eliminate	1.3 ^b 2.0	5.7	1.3	6.0	15.3	20.0
Eliminate	2.0	7.3	3.3	6.0	18.0	17.7
Quicksilver + Chaser 2 amine	1.3 ^b 2.0	4.3	1.7	1.7	7.7	11.7
Chaser 2 amine	2.0	6.7	2.0	1.7	4.0	6.7
Confront	1.5	6.0	4.0	2.0	4.7	6.7
Triplet SF	3.5	10.0	4.3	4.3	4.3	6.7
Check	-	38.3	31.7	36.7	45.0	41.7
LSD (0.05)		8.0	7.3	11.7	15.8	15.4
Vista + Quicksilver ^d	1.33 1.3 ^b	11.7	16.7	33.3	65.0	63.3

^a Percent of the plot area covered by dandelions.

^b Application rate was percent volume per volume.

^c Application rate was fluid ounces of product per acre.

^d Vista+Quicksilver was a late addition and was not randomized within the other treatments. Therefore, means cannot be compared with the others and are presented for information only.