

Gallery 75DF in Conjunction with Hydroseeding

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Background/Objective: Broadleaf weeds can be a problem during an establishment of cool season grasses because of competition for sunlight, water, and nutrients. Young grass plants are injured by many postemergence broadleaf weed herbicides and label restrictions prevent application of these products until after multiple mowings. However, Gallery is a preemergence broadleaf weed herbicide and if it is safe on seedling turf, it might provide a weed control option during hydroseeding of cool-season turfgrass.

Site Information

Location:	William H. Daniel Research and Diagnostic Center
Turfgrass Species:	NA
Turf Condition:	NA
Turf Management:	Mowing Height in: 2.5
	Fertilization: NA
	Irrigation: to encourage germination
Target Pest:	broadleaf weeds
Growth Stage:	at germination

Application Information

Application Date:	in 2005	10 May
Spray Volume gal 1000 ft²:		94
Spray Equipment:		Sprinkling can
Experimental Design:		Randomized complete block
Replications:		3
Plot Size ft:		5 X 5

The design of this study was a 3 X 6 factorial with 3 species (Kentucky bluegrass at 2 lbs/1000 sq. ft., perennial ryegrass at 4 lbs/1000 sq. ft., and tall fescue at 6 lbs/1000 sq. ft.) and 6 combinations of Gallery and hydromulch. These treatments included Gallery at either 0.5, 1.0, and 2.0 lbs ai/A combined with hydromulch at 27 lbs dry weight/1000 sq. ft.; Gallery at 1.0 lb ai/1000 sq. ft. with no hydromulch; just hydromulch; and just seed with no Gallery or hydromulch. Treatments were applied in slurry on 10 May in approximately 94 gals water/1000 sq. ft. to mimic hydromulching and all treatments included Shaw's 6-24-24 fertilizer at 1.5 pounds P₂O₅ /1000 sq ft in the hydromulch slurry.

Results:

Kentucky bluegrass:

- All rates of Gallery inhibited germination rated 23 and 26 May (Table 1).
- All rates of Gallery reduced cover rated 1, 6, and 15 June.

Perennial ryegrass

- All rates of Gallery inhibited germination rated 18, 20, 23, and 26 May and the higher rates reduced germination more severely than the low rate (Table 2).
- All rates of Gallery reduced cover throughout the study.
- All rates of Gallery produced noticeable phytotoxicity, with the 0.5 lbs ai/A causing the most damage. This was likely a function of the 0.5 lb ai/A rate was the only treatments with enough turf to accurately assess the damage.

Tall fescue

- All rates of Gallery inhibited germination rated 18, 20, 23, and 26 May and the higher rates reduced germination more severely than the low rate (Table 3).
- All rates of Gallery reduced cover throughout the study
- All rates of Gallery produced noticeable phytotoxicity, with the 0.5 lbs ai/A causing the most damage. This was likely a function of the 0.5 lb ai/A rate was the only treatments with enough turf to accurately assess the damage.

Summary

Gallery should not be used in a hydroseed tankmix. Postemergence herbicides such as Drive and carfentrazone applied two to four weeks after emergence would be less damaging.

Table 1. Effect of Gallery and hydromulch on germination, percent cover, and phytotoxicity of Kentucky bluegrass seeded at 2 lbs/1000 sq. ft.

Gallery	Hydromulch	Germination ^a				Cover ^b			Phytotoxicity ^c	
		18 May	20 May	23 May	26 May	1 June	6 June	15 June	6 June	15 June
lbs ai/A	lbs/1000					-----%-----				
0.5	27	10.0	10.0	10.0	9.0	1.0	2.7	6.7	2.0	0.0
1	27	10.0	10.0	10.0	10.0	0.7	1.3	5.0	0.0	0.0
2	27	10.0	10.0	10.0	10.0	0.0	0.3	2.3	0.0	0.0
0	27	10.0	10.0	5.3	1.7	28.3	41.7	60.0	0.0	0.0
1	0	10.0	10.0	10.0	9.3	1.7	2.7	7.7	0.0	0.0
0	0	10.0	9.3	7.7	5.3	16.7	38.3	65.0	0.0	0.0
LSD (0.05)		1.9	1.3	1.4	1.7	8.2	6.4	6.0	1.5	1.6

^a Germination was rated on a scale of 1 to 10, with 0=100 percent and 10=no germination.

^b Percent cover is the percent of the plot area covered by the desired species.

^c Phytotoxicity was rated on a scale of 1 to 10, with 0=no phytotoxicity and 10=completely brown turf.

Table 2. Effect of Gallery and hydromulch on germination, percent cover, and phytotoxicity of perennial ryegrass seeded at 4 lbs/1000 sq. ft.

Gallery	Hydromulch	Germination ^a				Cover ^b			Phytotoxicity ^c	
		18 May	20 May	23 May	26 May	1 June	6 June	15 June	6 June	15 June
lbs ai/A	lbs/1000					-----%-----				
0.5	27	10.0	5.7	3.0	3.7	10.0	16.7	20.0	5.0	6.7
1	27	9.7	6.7	6.7	7.0	4.0	6.3	7.7	2.3	3.3
2	27	10.0	9.3	9.0	8.7	1.3	2.0	2.3	2.3	0.7
0	27	5.7	0.0	0.0	0.0	73.3	88.3	88.3	0.0	0.0
1	0	9.3	8.3	8.0	7.7	3.3	3.3	11.7	1.0	0.0
0	0	5.3	1.3	0.0	0.3	70.0	91.7	91.7	0.0	0.0
LSD (0.05)		1.9	1.3	1.4	1.7	8.2	6.4	6.0	1.5	1.6

^a Germination was rated on a scale of 1 to 10, with 0=100 percent and 10=no germination.

^b Percent cover is the percent of the plot area covered by the desired species.

^c Phytotoxicity was rated on a scale of 1 to 10, with 0=no phytotoxicity and 10=completely brown turf.

Table 3. Effect of Gallery and hydromulch on germination, percent cover, and phytotoxicity of tall fescue seeded at 6 lbs/1000 sq. ft.

Gallery	Hydromulch	Germination ^a				Cover ^b			Phytotoxicity ^c	
		18 May	20 May	23 May	26 May	1 June	6 June	15 June	6 June	15 June
lbs ai/A	lbs/1000					-----%-----				
0.5	27	10.0	7.3	4.0	4.3	15.0	13.3	13.3	5.0	7.7
1	27	10.0	9.7	9.0	8.7	2.0	4.3	2.3	3.3	3.0
2	27	10.0	10.0	10.0	9.0	0.7	1.3	1.0	1.7	0.0
0	27	9.7	3.0	0.0	0.3	46.7	70.0	76.7	0.0	0.0
1	0	10.0	9.7	9.7	9.0	1.3	2.7	3.7	0.7	0.0
0	0	8.7	4.3	0.0	1.0	38.3	63.3	70.0	0.0	0.0
LSD (0.05)		1.9	1.3	1.4	1.7	8.2	6.4	6.0	1.5	1.6

^a Germination was rated on a scale of 1 to 10, with 0=100 percent and 10=no germination.

^b Percent cover is the percent of the plot area covered by the desired species.

^c Phytotoxicity was rated on a scale of 1 to 10, with 0=no phytotoxicity and 10=completely brown turf.