

# Preemergence Broadleaf Weed Control with Tenacity in a Hydro-Seeded Establishment

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## Introduction

Broadleaf weed control evaluations were conducted on an establishment site at The Valentine Turfgrass Research Center, Penn State University, University Park, Pa. The objectives of the study were to determine the efficacy of Tenacity for the pre and post emergence control of dandelion (*Taraxacum officinale*), white clover (*Trifolium repens*), and buckhorn plantain (*Plantago lanceolata*) when applied with a traditional spray application or when mixed with hydromulch material and to evaluate the phytotoxicity of these compounds to newly established 'Amazing GS' perennial ryegrass (*Lolium perenne*).

## Methods and Materials

One month prior to the application of any material, the area was prepared with herbicide applications of RoundUp ProMaxx at 3qt/A and Trimec Classic at 4 pt/A. On June 29, 2012, (SEED) the entire test area was core cultivated, verticut, and overseeded, either with a drop spreader or mixed with hydromulch as indicated, with dandelion at a rate of 1.5 lbs/M, white clover at 0.25 lbs/M, buckhorn plantain at 1 lb/M, and 'Amazing GS' perennial ryegrass at 4 lbs/M. In addition to seeding, at the time of applications, urea (46-0-0) was applied at 0.25 lb N/M immediately following the overseeding processes. Additionally, on June 29, 2012, establishment areas treated with Tenacity received these applications either with a three foot CO<sub>2</sub> powered boom sprayer (Figure 1) calibrated to deliver 80 gpa using one, flat fan, TP9508EVS nozzle at 40 psi, or as a treatment mixed with hydromulch material as indicated.

The study was a non-replicated demonstration trial and test plots were 60 ft<sup>2</sup> each. All test areas were rated by recording the total percent cover of broadleaf weeds and comparing these populations to untreated test plots.

Once established, the test site (Figures 2 and 3) was mowed at three inches weekly with a rotary mower with clippings returned to the site. The test site was irrigated to prevent moisture stress and encourage plant establishment.

## Results and Discussion

There was no turfgrass phytotoxicity found on any rating date (Table 1). There were three rating dates during the study.

Two weed control ratings were taken about one month apart (Table 2). Overall, the control decreased from the first date to the second. At the conclusion of the study all treated turfgrass observationally reduced the weed populations compared to non-treated turfgrass.

It appears that Tenacity provides turfgrass managers with numerous options to control weeds at the time of planting.

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**Table 1.** Evaluations of turfgrass phytotoxicity, where 0 = dead turf, 7 = acceptable, and 10 = no phytotoxicity in 2012.

Treatment	Form	Rate oz/A	Timing	(-----Turf Phytotoxicity-----)		
				7/6	7/13	7/20
TENACITY NO MULCH SEED SEPARATE	4SC	5	SEED	10.0	10.0	10.0
SEED ONLY NO MULCH/TENACITY			SEED	10.0	10.0	10.0
NO TENACITY MULCH W/ SEED			SEED	10.0	10.0	10.0
MULCH W/ TENACITY+SEED	4SC	5	SEED	10.0	10.0	10.0
TENACITY SEPARATE	4SC	5	SEED	10.0	10.0	10.0
MULCH W/ SEED			SEED			

**Table 2.** Percent control of the broadleaf weed populations following applications of selected herbicides in 2012.

Treatment	Form	Rate oz/A	Timing	(-----Weed Control <sup>1</sup> -----)	
				7/25	8/15
TENACITY NO MULCH SEED SEPARATE	4SC	5	SEED	63.2	54.1
SEED ONLY NO MULCH/TENACITY			SEED	0.0	0.0
NO TENACITY MULCH W/ SEED			SEED	15.8	13.3
MULCH W/ TENACITY+SEED	4SC	5	SEED	94.7	89.8
TENACITY SEPARATE	4SC	5	SEED	89.5	79.6
MULCH W/ SEED			SEED		



*Figure 1: CO<sub>2</sub> powered boom sprayer used for application of liquid materials.*



*Figure 2: Representative overview of broadleaf trial at the conclusion. Photo taken 8/15/12.*



*Figure 3: Tenacity at 5 oz/A mixed with hydromulch at the conclusion of the trial. Photo taken 8/15/12.*