

Annual Bluegrass Prevention on a Newly Established Putting Green

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Introduction

This study was conducted on a mixed stand of ‘Penncross’ creeping bentgrass (*Agrostis stolonifera*) and annual bluegrass (*Poa annua*) at the Valentine Turfgrass Research Center, University Park, PA. The objective of the study was to evaluate selected materials for the suppression of annual bluegrass encroachment into a newly established area maintained similar to a putting green.

Methods and Materials

This study was a randomized complete block design with three replications. Treatments were applied on September 4 (FALL), September 16 (14 DAT), October 1, 2003 (28 DAT), August 25 (FALL), September 7 (14 DAT), September 21, 2004 (28 DAT), September 2 (FALL), September 20 (14 DAT), October 10, 2005 (28 DAT), August 23 (FALL), September 7 (14 DAT), and September 21, 2006 (28 DAT) using a three-foot CO₂ powered boom sprayer calibrated to deliver 80 gpa using two 11004 flat fan nozzles at 40 psi.

The test area was established in July of 2002. Normal practices for a putting green establishment were conducted. Subsequently, the turf was maintained using cultural practices for irrigation, mowing, and fertilization that would be typical for a putting green.

Results and Discussion

None of the treatments caused discernable phytotoxicity to the turf (Table 1). Ratings for annual bluegrass encroachment in 2004 revealed that the untreated turf had the greatest percent increase, but the amount was not significantly different from that found as a result of any of the treatments (Table 2). Annual bluegrass encroachment rated in the spring of 2005 revealed some significant differences. Turfgrass treated with Betasan at 9.2 oz/M followed by Rubigan at 2 oz/M (applied twice) and Rubigan at 2 oz/M alone applied three times had significantly less annual bluegrass encroachment than untreated turfgrass. The percent annual bluegrass found in the spring of 2006 revealed an overall increase in the population compared to previous populations. All treated turfgrass had significantly less annual bluegrass than untreated on the April 13, 2006 rating date. On the May 15th, 2007 rating date, annual bluegrass populations again increased from the previous year. On this date, turfgrass treated with Batasan at any rate plus Rubigan at any timing and Rubigan alone had significantly less annual bluegrass than non treated turfgrass.

On August 15th, 2006 the study area was rated for the amount of moss cover (Table 3). All treated turfgrass had significantly less moss than non treated turfgrass.

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Table 2. Percent annual bluegrass ratings of a simulated 'Penncross' creeping bentgrass/annual bluegrass putting green from 2003, 2004, 2005, 2006, and 2007.

Treatment	Form	Rate oz/M	Timing	9/4/03	4/21/04	5/2/05	4/13/06	5/15/07
BETASAN	4EC	9.2	FALL	1.0a ¹	1.3a	15.0ab	16.7b	33.3ab
BETASAN	4EC	9.2	FALL	1.0a	1.7a	13.3ab	16.7b	25.0bc
RUBIGAN	AS	2	14DAT					
CHECK				1.0a	2.7a	18.3a	28.3a	38.3a
BETASAN	4EC	9.2	FALL	1.0a	1.7a	8.3b	20.0b	21.7c
RUBIGAN	AS	2	14DAT/28DAT					
BETASAN	4EC	9.2	FALL	1.0a	1.0a	13.3ab	21.7ab	21.7c
RUBIGAN	AS	2/4	14DAT/28DAT					
RUBIGAN	AS	2	FALL /14DAT/28DAT	1.0a	1.0a	8.3b	15.0b	26.7bc

1 - Means followed by same letter do not significantly differ (P = 0.05 Duncan's New MRT)

Table 3. Percent moss cover in the test area of a simulated 'Penncross' creeping bentgrass/annual bluegrass putting green in 2006.

Treatment	Form	Rate oz/M	Timing	8/15/06
BETASAN	4EC	9.2	FALL	15.0ab
BETASAN	4EC	9.2	FALL	18.3ab
RUBIGAN	AS	2	14DAT	
CHECK				30.0a
BETASAN	4EC	9.2	FALL	13.3b
RUBIGAN	AS	2	14DAT/28DAT	
BETASAN	4EC	9.2	FALL	6.7b
RUBIGAN	AS	2/4	14DAT/28DAT	
RUBIGAN	AS	2	FALL /14DAT/28DAT	20.0ab

1 - Means followed by same letter do not significantly differ (P = 0.05 Duncan's New MRT)