

Efficacy of Liquid and Granular Insecticides for Curative Control of Sod Webworm Larvae in Creeping Bentgrass Turf, 2005

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Objective

The primary objective of this study was to describe the activity of selected liquid and granular insecticides on sod webworm larvae by: 1) Describing curative efficacy against the targeted pest, 2) Describing any problems with application, 3) Describing differences between doses

Rationale

Although sod webworms are common pests of short-cut bentgrass in the Midwest, there are no recent insecticide efficacy data available for Indiana golf courses. Therefore we evaluated liquid and granular formulations of several different insecticides and several rates of Allectus (a combination product containing imidacloprid and bifenthrin) in an effort to describe their efficacy and residual activity against this pest complex

How it was done

The experiment was located at the W.H. Daniel Turfgrass Research and Diagnostic Center (West Lafayette, IN) on a sand based green consisting of creeping bentgrass (var. G6) maintained at 3/16". Plots measuring 2 x 2 meters were arranged in a randomized complete-block design with 0.5 meter alleys between plots. Each treatment was replicated 4 times.

Liquid treatments were applied using a hand-held CO₂ boom sprayer configured with four 8010 nozzles operating at 30 psi and calibrated to deliver a spray volume of 2 gal/1000ft². Granular formulations were applied with a shaker jar. Following the applications, each plot received 0.64 cm of post-treatment irrigation. Treatments were applied 15 July. Field conditions on the 15 July treatment date were:

Soil: moist, 23.8 °C at 10 cm depth

Air Temp: 25.3 °C

Weather: sunny, clear, wind 3-5 mph

Thatch: 1”

Sod webworms: 80% 3rd – 5th instar, mixed species

Efficacy data were obtained 18 July (3 DAT) and 25 July (10 DAT), by soap flushing a 1.0 m² area inside each plot and counting the number of sod webworm larvae coming to the surface after 15 minutes. A different area within each plot was sampled on each sampling date. Analysis of Variance was performed using the log transformed total number of larvae per sample in each plot and treatment means were compared using the Fisher's LSD test ($\alpha=0.05$).

Results

Table 1. Efficacy of liquid and granular insecticides for curative control of sod webworm larvae in creeping bentgrass turf, West Lafayette, IN., 2005.

TR#	Treatment	Sod Webworms			
		0/m ²		% Control	
		3 DAT	10 DAT	3 DAT	10 DAT
1	Untreated Control	13.5 a	11.5 a	---	---
2	Allectus 0.81 SC @ 0.23 lb AI/A	1.3 c	0.3 c	90.7	97.8
3	Allectus 0.81 SC @ 0.36 lb AI/A	0.8 c	0 c	94.4	100
4	Merit 2F @ 0.30 lb AI/A	6.8 b	5.3 b	50	54.3
5	Talstar F @ 0.10 lb AI/A	0.5 c	0.3 c	96.6	97.8
6	Allectus G @ 0.20 lb AI/A	2.3 c	0.5 c	83.3	95.7
7	Allectus G @ 0.36 lb AI/A	1.0 c	0 c	92.5	100
8	Merit 0.5 G @ 0.3 lb AI/A	8.3 b	5.5 b	38.8	52.2
9	Talstar G @ 0.10 lb AI/A	1.5 c	0 c	88.9	100
10	Arena 50 WDG @ 0.25 lb AI/A	2.5 a	1.0 c	87.0	91.3

Within a column, numbers followed by same letters are not significantly different, LSD(0.05).

0/m²=number of larvae per square meter

DAT=days after treatment