

Soluble Concentrate Formulations of Bifenthrin (Talstar) and Spinosad (Conserve) for Curative Control of Black Cutworm Larvae in Creeping Bentgrass Turf, 2005

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Objective

The primary objective of this study was to describe and compare the activity of Talstar and Conserve on black cutworm larvae by: 1) Describing knockdown and residual activity against the targeted pest
2) Describing any problems with application

Rationale

Although black cutworms are sometimes serious pests of short-cut bentgrass in the Midwest, there are no recent insecticide efficacy data available for Indiana. Therefore we evaluated two products representing two different insecticide classes in an effort to describe their efficacy and residual activity against the black cutworm, *Agrotis ipsilon*. Bifenthrin (Talstar SC) is a synthetic pyrethroid insecticide with relatively long residual activity. Spinosad (Conserve SC) is a biorational compound derived from the fermentation of naturally occurring bacteria.

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 maintained at 3/16". Plots measuring 1 x 1 meters were arranged in a randomized complete-block design with 0.5 meter alleys between plots. Each treatment was replicated 4 times. 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. Treatments were applied 26 Aug. and each treatment was replicated 4 times.

Field conditions on the 26 Aug. treatment date were:

Soil: moist, 21.7 °C at 10 cm depth

Air Temp: 23.3 °C

Weather: sunny, clear, wind 3-5 mph

Thatch: 1”

Efficacy data were obtained 1 Sept. (3 DAT), 5 Sep. (7 DAT) and 12 Sep. (14 DAT) by soap flushing a 0.25 m² area inside each plot and counting the number of black cutworm larvae coming to the surface. A different area within each plot was sampled on each sampling date. Analysis of variance was performed using the total number of live larvae per sample and treatment means were compared using the Fisher's LSD test ($\alpha=0.05$).

Results

Table 1. Efficacy of liquid formulations of bifenthrin (Talstar SC) and spinosad (Conserve SC) for curative control of black cutworm larvae in creeping bentgrass turf, West Lafayette, IN., 2005.

		Black Cutworms					
		0/m ²			% Control		
TR#	Treatment	3 DAT	7 DAT	14 DAT	3 DAT	7 DAT	14 DAT
9	Talstar 0.67SC @ 0.05 lb AI/A	0.5de	0.3c	0.0c	83.3	90.0	100.0
10	Conserve 1SC @ 0.27 lb AI/A	0.3de	0.3c	0.0c	91.7	90.0	100.0
11	Untreated Control	3.0a	2.5a	1.0a	---	---	---

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

0/m²=number of larvae per square meter

DAT=days after treatment