

Soluble Concentrate Formulations of Bifenthrin (Talstar) and Spinosad (Conserve) for Curative Control of Fall Armyworm Larvae in Kentucky Bluegrass 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 fall armyworm larvae by: 1) Describing knockdown and residual activity against the targeted pest
2) Describing any problems with application

Rationale

Although armyworms are occasional pests of turfgrass 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 fall armyworm, *Spodoptera frugiperda*. 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 (Purdue University, West Lafayette, IN) on an area consisting of Kentucky bluegrass maintained at 2.5". Plots measuring 1.25 x 0.25 meters were arranged in a randomized complete-block design with 0.5 meter alleys between plots. Three sets of 15 2nd and 3rd instar fall armyworm larvae were caged onto each plot using 8

inch diameter PVC pipes (6 inch length) window screening and plastic snap-cap rings. The following day, the lids of the cages were temporarily removed and treatments were applied using a hand-held CO₂ boom sprayer (single 8010 nozzle @ 30 psi, 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, 22.0 °C at 10 cm

Air Temp: 23.9 °C

Weather – sunny, clear, wind 4-6 mph

Thatch: 1”

Efficacy data were obtained 29 Aug. (3 DAT), 2 Sep. (7 DAT) and 9 Sep. (14 DAT) by soap flushing a single cylinder in each plot and counting the number of live fall armyworm larvae recovered. A different cylinder was flushed on each sampling date.

Results

Table 1. Efficacy of liquid formulations of bifenthrin (Talstar SC) and spinosad (Conserve SC) for curative control of fall armyworm larvae in Kentucky bluegrass turf, West Lafayette, IN., 2005.

		Fall Armyworms					
		0/ft ²			% Control		
TR#	Treatment	3 DAT	7 DAT	14 DAT	3 DAT	7 DAT	14 DAT
1	Talstar 0.67SC @ 0.05 lb AI/A	2.1bc	0.7b	0.0b	78.5	90.0	100.0
2	Conserve 1SC @ 0.273 lb AI/A	2.1bc	2.9b	0.0b	78.5	60.0	100.0
3	Untreated Control	10.0a	7.1a	5.0a	---	---	---

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

0/ft²=number of larvae per square foot

DAT=days after treatment