

**Post-Application Irrigation and the Curative Efficacy of Allectus, Merit and Arena on Billbug Larvae in Kentucky Bluegrass Turf – 2006**  
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**Objective:**

The objective of this study was to describe the influence of post-application irrigation on the curative activity of Allectus, Merit and Arena against bluegrass billbug larvae.

**Rationale:**

Billbug larvae can be a serious pest of Kentucky bluegrass turf. The availability of fast-acting, curative controls for this insect can make billbug management more efficient by providing turfgrass managers the ability to respond to infestations quickly and effectively when they are first noticed. We evaluated the influence of post-application irrigation on the curative efficacy of three insecticides against billbug larvae.

**How it was done:**

The experiment was located at the W.H. Daniel Center for Turfgrass Research and Education, Purdue University (West Lafayette, IN) on a lawn consisting primarily of Kentucky bluegrass maintained at 2.5". Plots measuring 5 x 5 ft were arranged in a randomized complete-block design with 1 ft alleys between plots. Each treatment was replicated 2 times in each of two blocks. Treatments were applied June 23<sup>rd</sup> 2006 using a hand-held CO<sub>2</sub> boom sprayer configured with four 8010 nozzles operating at 30 psi and calibrated to deliver a spray volume of 2 gal/1000ft<sup>2</sup>. Granular treatments were applied using a shaker jar. One block (2 replicates) received ¼" post-treatment irrigation and one block received no irrigation until natural rainfall occurred several days after application. Efficacy data were obtained July 6<sup>th</sup> by extracting 4 turf and soil cores (4.25" diameter) from each plot and counting the number of billbug larvae and pupae in each core. Samples were taken at least 0.25 m inside the border of each plot.

**Results:**

**Table 1.** Influence of post-treatment irrigation on efficacy of Allectus, Merit and Arena for curative control of bluegrass billbug larvae in turfgrass. Applications were made on June 23<sup>rd</sup> and efficacy was assessed on July 6<sup>th</sup>.

Irrigation	Treatment	Billbugs % Control
YES	Allectus0.81 SC @ 307 G AI/HA	77.8
NO	Allectus0.81 SC @ 307 G AI/HA	31.8
YES	Merit 2 F @ 350 G AI/HA	50.0
NO	Merit 2 F @ 350 G AI/HA	50.0
YES	Arena 50 WDG @ 280 G AI/HA	72.2
NO	Arena 50 WDG @ 280 G AI/HA	95.5

\* There were no signs of phytotoxicity associated with any of the insecticide treatments.