# Evaluating Acelepryn for adult preventive control of billbugs in Kentucky bluegrass turf

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SUMMARY: Billbugs are a common but often improperly diagnosed pest in turfgrass systems. As such, they become a frustration for professional Turfgrass Managers to deal with. Choosing effective insecticides, rates and timing are critical to successful control of these pests. This study is designed to shed light on the efficacy of various rates of Acelepryn applied at adult preventive timing against billbugs. Acelepryn is a relatively recent and novel product available for use by the turfgrass industry.

The following study was designed to evaluate different application rates of Acelepryn for control of billbugs in Kentucky bluegrass turf. Information of this kind is essential to developing a current and comprehensive pesticide profile for this novel chemistry.

## Materials and Methods

The experiment was located at the Nursery Complex at Purdue University (West Lafayette, IN) on a stand of turfgrass consisting primarily of Kentucky bluegrass maintained at 7.6 cm. Plots measuring 2.4 x 2.4 meters were arranged in a randomized complete-block design with 0.3 meter alleys between plots. Each treatment was replicated 4 times. All materials were applied using a hand-held $CO_2$ boom sprayer configured with four 8010 nozzles operating at 30 psi and calibrated to deliver a spray volume of 2 gal/1000ft$^2$. The combined density of billbug larvae, and pupae was determined on July 7 using a golf course cup cutter to remove 5 cores (4.25" diameter) from each plot to a depth of 3". The soil and thatch in each core was carefully examined for all billbug life stages and the number of billbugs in each core was recorded. Variation in billbug larval/pupal densities was examined using main effects ANOVA and treatment means were compared using Fisher's LSD test ($\alpha$=0.05). Billbug species composition at the site consisted mainly of Sphenophorus parvulus with S. minimus and S. inaequalis also being present.

Field conditions on the April 15 treatment date were:
(1) Soil Temp.: 15°C
(2) Air Temp: 20°C
(3) Weather: Partly Cloudy, wind 5-7 mph
(4) Thatch: 1.0 cm

## RESULTS:

All rates of Acelepryn provided acceptable levels of billbug control (Table 1). Acelepryn and treatments containing the two highest rates of Acelepryn consistently provided excellent control. These levels of control matched or exceeded levels of control provided by the insecticides standard (Merit). No indications of phytotoxicity were observed at any point during the study.

Additional index words:
Efficacy tests, Acelepryn, Billbugs, Purdue University, Entomology, Turfgrass Insects

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Table 1. Number of billbugs per square foot (±SE) and % control in plots of Kentucky bluegrass turf treated with different rates of Acelepryn. West Lafayette, Indiana 2011.

| Treatment | Product | Rate (ml product/1000ft2) | Billbugs/ft2 (±SE) | % Control |
|---|---|---|---|---|
| 1 | Acelepryn 1.67SC | 2.715 | 2.5±1.0 bc | 80 |
| 2 | Acelepryn 1.67SC | 4.07 | 0.0±0.0 a | 100 |
| 3 | Acelepryn 1.67SC | 5.43 | 1.0±1.0 ab | 92 |
| 4 | Merit 75WP | 4.17 | 0.5±0.5 ab | 96 |
| 5 | Control | --- | 12.5±2.1 d | --- |

* Numbers within a column followed by different letters are significantly different (α=0.05)