

Application Timing and Efficacy of Imidacloprid Against Masked Chafer Larvae in Turfgrass – 2006

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Objective:

The objective of this study was to describe how application timing affects the efficacy of imidacloprid against masked chafer grubs in turfgrass.

Rationale:

The residual activity of imidacloprid provides flexibility in application timing which can be an asset to turfgrass managers concerned about white grub management. This same property allows users to build efficiency into their insect management programs by making it easier to implement multiple targeting (i.e., controlling more than one insect pest with a single, well-timed application). Because white grubs are most likely the major concern for turfgrass managers, we examined how applications of imidacloprid made during different points in the growing season (i.e., points when other insect pest may be a concern), influence masked chafer larval populations.

How it was done:

The experiment was located at the driving range of the Birk-Boilermaker golf complex, Purdue University (West Lafayette, IN) on a stand of turfgrass consisting primarily of Kentucky bluegrass maintained at 1". Plots measuring 5 x 5 ft were arranged in a randomized complete-block design with 1 ft 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 using a shaker jar. All treatments received ¼" post-treatment irrigation on the day of application. Efficacy data were obtained during the second week of October by extracting 4 turf and soil cores (4.25" diameter) from each plot and counting the number of white grubs in each core. Samples were taken at least 0.25 m inside the border of each plot.

Results:

Table 1. Influence of application timing on efficacy of imidacloprid against masked chafer grubs in turfgrass.

Treatment	Application Date	White grubs % Control
Merit 2F @ 0.3 lb AI/A	May 15	71.4
Merit 0.5 G @ 0.3 lb AI/A	Jun 15	92.3
Merit 2F @ 0.3 lb AI/A	Aug 3	84.6
Merit 2F @ 0.3 lb AI/A	Aug 31	64.3
Untreated Control	----	---

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