

Evaluation of Various Chemical Treatments for Control of White Grubs on Turfgrass

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Objective

To compare the effect of pesticides and timing of applications on the control of annual white grubs on turfgrass

Rationale

Japanese Beetle (*Popillia japonica*) and Southern Masked Chafer (*Cyclocephala lurida*) populations continue to frustrate turfgrass managers. The advent of several 'new' chemicals to the arsenal of effective treatments has raised some concerns about relative effectiveness and about proper timing of applications for maximum control.

How It Was Done

Liquid sprays were applied at 1.35 gals/1000 ft² using a teejet 8002 evs nozzle tip attached to a Co₂ powered back pack sprayer. Granule applications were made using hand held shakers to uniformly distribute the material across the plot. Merit treatments (1-3) were applied on June 10, July 7 and Aug 21 respectively. Novartis was applied on July 7. Dylox and Mach 2 were both applied on Sept 8. Treatments were applied uniformly to plots measuring 7' X 7'. All plots received 0.5 inches of irrigation immediately post-treatment. Treatments were applied in a randomized complete block fashion and were replicated 5 times. An untreated control plots was included in each replicate.

Results

The cool wet spring and mild early summer conditions delayed the development of white grubs throughout the mid west during 1998. As a result, first emergence, peak flight and peak egg oviposition were delayed. Mild temperatures throughout the summer together with a lack of normal precipitation during July, most of Aug and Sept, further delayed grub development, and broadened the window of egg oviposition significantly when compared to normal years.

Product	Rate (ai/A)	Application date	Grub Control
Merit 0.5 GR	.3lb	June	Good
Merit 0.5 GR	.3lb	July	Excellent
Merit 0.5 GR	.3lb	Aug	Excellent
Dylox 6.2 GR	8lb	Sept	Good
Mach 2 1.5GR	1.5lb	Sept	Good
Novartis .22G	120G	July	Excellent
Untreated Control			Poor

Treatment effects were statistically analyzed and compared at $P > .05$. Merit applications whether applied during June, July or August, were all equally effective in controlling white grubs. Numerically, the level of control slightly

decreased with earlier dates of application however. Novartis' new insecticide applied in July provided equally effective grub control. Dylox, applied in September as a rescue treatment also performed very well and was not statistically different from the Merit or Novartis treatments. Although Mach 2 applied as a rescue treatment in September, performed as well as Dylox, it was statistically less effective than any of the earlier applications of Merit or Novartis products. Earlier tests have demonstrated that Mach 2, applied as a preventative, compare very favorably to Merit. All chemical applications were statistically very effective in controlling grubs when compared to the untreated control plots.