TURFGRASS MATTERS

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Waas Up?? In White Grub Control

by Dr. Kevin Mathias

A combination of federal regulatory rulings and economic decisions by insecticide manufacturers has dramatically changed the landscape of white grub insecticides and control strategies. At the beginning of the 1990's white grub control insecticides consisted mainly of organophosphate and carbamate based chemistries with only a few biorational products available (Table 1). As a group, the organophosphate and carbamate insecticides, have a relatively short residual activity and are highly efficacious when used in curative control programs. Optimum results are attained if the products are applied in mid to late August or into September as white grub damage is first noticed and when the grubs are young and relatively small.

As we enter the new millennium many of the curative control products have been replaced by a group of new insecticides. These insecticides, Merit and Mach 2, offer greater applicator safety, have less adverse effect on the environment, provide a longer window of application due to their extended soil residual activities, have minimal impact on beneficial predators, and provide excellent control (+90%) of white grubs.

Table 1: White Grub Control Products

1990		
Organophospates	Carbamates	Biorationals
Dylox Oftanol Mainstay Diazinon Dursban Triumph Mocap	Sevin Turcam	Milky Disease Nematodes

2001			
Dylox Diazinon*	Sevin	Merit Mach 2 Meridian**	Milky Disease Nematodes Naturalis

* Diazinon cannot be applied to golf course turf and sod farms
** Meridian is expected to get EPA registration in 2001

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Merit and Mach 2 affect the early instar stages of white grubs and are much more effective in preventative than in curative control programs. A review of field evaluations for white grub control reported in Arthropod Management Tests from 1998 to 1999 demonstrated that applications of Mach 2 or Merit applied within the early June to early August time period provided excellent control (+90%), however, if these insecticide were applied from late August through September the average level of control dropped to 80%.

A recent survey conducted at the 2001 Maryland Turfgrass Conference illustrates how turfgrass managers have incorporated these new insecticides into their insect control programs (Figure 1). Merit was used by 60% of the respondents, followed by Dylox at 28%, and then Mach 2 at 19% for white grub control. Dylox, an organophosphate, was applied as a curative control for spot treatment to sites that had not been treated with Merit or Mach 2.

Organophosphate / Carbamate Update

The ongoing review process mandated by the Food Quality and Protection Act of 1996 and under the direction of the Environmental Protection Agency (EPA) has continued to affect product choices for turfgrass insect control. Dursban's (chlorpyrifos) new turfgrass labeling removes the application of this product to residential sites and restricts applications only to golf course and industrial sites. It also limits maximum application rates of 1 lb A.I./acre per season. Though never a stellar white grub control product due to its tendency to bind to organic matter, Dursban was quite effective at the 2 lb A.I./acre rate for adult control of the black turfgrass ataenius beetle. When applied in early spring prior to egg laying, Dursban will control the adults thus preventing or reducing

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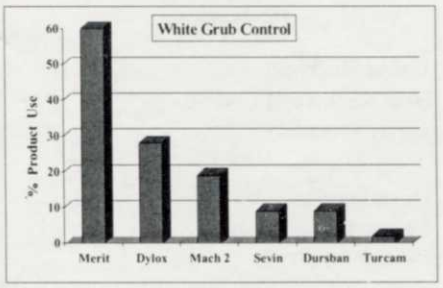

Figure 1. Survey results demonstrating the choice of white grub control used by turfgrass professionals in Maryland for the 2000 season. The survey was conducted at the 2001 Maryland Turfgrass Conference.

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