



# Bayer

TECHNICAL DOCUMENT

## Best Management Practices for Effective White Grub Control

White Grub species include Northern and Southern Masked Chafers (*Cyclocephala borealis*, *C. immaculata*, and/or *C. lurida*), Asiatic Garden Beetle (*Maladera castanea*), European Chafer (*Rhizotrogus majalis*), May or June Beetle (*Phyllophaga* spp.), Japanese Beetle (*Popillia japonica*), Green June Beetle (*Cotinis nitida*) and Oriental Beetle (*Anomala orientalis*). Injury to turfgrass occurs from larval feeding on the roots, resulting in infested areas first turning yellow, then brown, and finally dying. When grub populations are heavy, areas of turf can be easily lifted from the soil. In addition, moles, raccoons, skunks, birds and other vertebrate animals feed on White Grubs. Turf can be heavily damaged by the activities of these animals as they forage for grubs in infested turf.

### Preventive White Grub Control

Imidacloprid, the active ingredient in Merit® formulations and Allectus® on fertilizer, is a broad-spectrum, systemic insecticide that provides residual activity so that application can be made preceding the egg-laying activity of the adult stage. Merit should be applied between June 1st and August 15th, while Allectus on fertilizer applications should begin late June/early July.

Bayer recommends imidacloprid be applied at 0.4 lb. per acre, especially in regions with increased pressure from Oriental Beetle and/or the Chafer complex. Formulation equivalencies to achieve this rate are as follows:

- Merit 75WSP = 5 x 1.6 oz. packets per acre
- Merit 0.5 G = 80 lbs. per acre
- Merit 2F = 25.6 fl. oz. per acre
- 0.2% Merit on Fert = 200 lbs. per acre
- 0.225% Allectus on Fert = 2 applications (4-6 weeks apart) at 160 lbs. per acre, or supplement 1 Allectus application with an additional Merit application to achieve a total of 0.4 lb. of imidacloprid per acre

Optimum control is achieved when:

- Irrigation or rainfall ( $\geq 0.5$  inch) occurs within 24 hours after application to move the active ingredient through the thatch into the soil profile. If a complete irrigation cycle is not possible, then syringe immediately and complete irrigation later in the day.
- Do not apply to turfgrass soils that are waterlogged or saturated and will not accept irrigation. Adequate distribution of the active ingredient cannot be achieved under these conditions. The treated turf must be in such a condition that the irrigation or rainfall will penetrate vertically into the soil profile.
- If possible, avoid mowing turf until rainfall or irrigation has occurred so that uniformity of application will not be affected.



Merit®



Dylox®

## Curative White Grub Control

Dylox® insecticide is a broad-spectrum insecticide that works by both contact and ingestion. Trichlorfon, the active ingredient in Dylox, is very quick acting, killing damaging large-instar Grubs in 1-3 days. Dylox is typically applied in late-summer and fall to target second and third instar grubs. But, it can also be effective when applied in the spring for overwintering grub larvae.

Apply Dylox at the following recommended rates:

- Dylox 6.2G – 130 lbs. per acre
- Dylox 420SL – 300 fl. oz. per acre

For optimum control:

- It is critical Dylox gets moved through the thatch into the soil profile by irrigation or rainfall ( $\geq 0.5$  inch) within 24 hours after application.
- Under dry conditions where thatch is present, irrigate the area to be treated prior to application. Wetting the thatch/soil interface encourages the larvae to move closer to the surface.
- Understand that as grub larvae mature from first instar to third instar, they become more difficult to control due to their body size and weight. Therefore, it is crucial to make sure applications are timed properly to optimize insecticide control.

