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CHEMICAL LOG

White Grubs: Know The Enemy

When it comes to white grubs, to know them is to dread them. However, knowing the damage they cause and how to identify specific species and their life cycles, turf managers can control this pest.

"White grub" is a generic term referring to the larval stage of several beetle species. The most familiar turf pest species of beetles in the Northeastern United States include the Japanese beetle, Asiatic Garden beetle, Oriental beetle, European Chafer and the Northern Masked Chafer. In the Midwest and South, major pests include May and June beetles and the Southern Masked Chafer.

Damage

In general, most grubs of turf-inhabiting beetle species are similar in appearance except for size differences. Grubs are often white/cream-colored with a brown head capsule. They have three pairs of legs and are usually curled into a "C" shape.

White grubs feed on turfgrass roots and kill grass plants by severing their root systems from foliar plant parts. In fact, extensive grub damage to turfgrass often results in very large areas of grass that can be rolled back, as if it were freshly cut sod or carpeting, due to severing of roots. Damage often appears as patches of large, localized areas of yellow/brown grass as result of desiccation and eventual plant death.

Diagnosis and Identification

Identification of white grub species that are causing damage can be made by observing diagnostic structures on the larvae. Sampling for and obtaining larvae involves removing a patch of turf and probing underlying soil and

thatch. Grub species are identified by using a 10X hand lens to observe the pattern of spines at the tip of the larval abdomen.

Life Cycle/Control

For most of the species mentioned above, except for May and June beetles, the complete life cycle takes one year. May and June beetles have a three-year life cycle.

Insecticides are most effective if applied with the time of occurrence of the most vulnerable stages of insect pests.

In the three-year life cycle of May and June beetles, larvae are the most vulnerable stage. They can be controlled with an insecticide applied during fall of the first year when small, young larvae are feeding on roots close to the soil surface.

Control is also possible during the second year from June to September. However, efficacy may not be as good during the first year due to the larger grubs present during the second year. Control during the third year is not normally needed since there is little larval feeding upon grass roots during the spring.

Those interested in controlling white grubs are highly advised to consult the extension service at state universities for up-to-date information regarding local pest biologies and time of occurrence of vulnerable life stages.

Insecticides in combination with sound turfgrass agronomic practices are currently the most effective method of white grub management. Timing insecticide applications with the occurrences of young larvae in the one inch of soil maximizes effectiveness and can reduce costly treatment. Irrigation or precipitation before and after insecticide application also can significantly improve control.

A number of insecticides are currently labeled for control of white grubs. These include bendiocarb (Turcam), carbaryl (Sevin), chlorpyrifos (Dursban), diazinon, ethoprop (Mocap), fonofos (Crusade), isazofos (Triumph), isofenphos (Oftanol) and trichlorfon (Dylox, Proxol).

Be sure to read and follow label directions. Several of these products have restrictions limiting where they may be applied or may require application by certified applicators. □

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