10/5/2022

White Grubs

White grubs, the larvae of *Cyclocephala pasadene* beetles (Exhibit 1), commonly known as Japanese beetles, are a common problem throughout Southern California, the southwest and northern Mexico. They are a beetle larva, white in color, C-shaped, and about 1/4’ to 1½” in length, dependent upon the larvae age. These grubs appear in late spring and into fall. Females lay eggs in the soil, with larvae feeding on both grass roots and organic soil debris.

Exhibit 1

The presence of grubs does not necessarily present a problem; it is the density of the grub population that creates the issues. A thick stand of turf, which denotes quality soil, quality irrigation water and not under stress will typically have a healthy root system. This healthy turf can usually fend off or survive a smaller volume of grubs. High volumes of grubs per square foot denotes an infestation, usually associated with weak turfgrass. Irregularly shaped, large brown patches in turf is a sign of white grub infestation (Exhibit 2).

Exhibit 2

The average life cycle of the beetles is a single generation per year, with adults active from June to October. Adult abundance generally peaks strongly in July. In recent years, many parts of the west have seen not only an increase in average temperatures during the spring, summer, and fall seasons, but also a severe lack of rain. The increase in temperatures over longer periods has allowed the beetle population the ability to have more than one life cycle a year, greatly increasing the populations.

Additionally, the lack of rainfall has decreased the quality of soil by not allowing the accumulated salts in the soil to be "flushed' from the turf root zone. To compound this, the reclaimed water (potable water to a lesser extent but still an issue) used at Laguna Woods Village to irrigate the turf is high in salts and heavy metals. This accumulation of salts from the poor water quality, lack of rainfall, and more recently water restrictions due to drought has driven the salt levels in the soil to extreme levels. These extreme levels add to the already stressed turf which acts as a beacon to adult beetles. The beetles will lay their eggs in weakened turfgrass, just as the predator hunts the weakened animal, knowing that the turfgrass's natural ability to fend off their young larvae has been greatly reduced. The beetle's instincts tell them their young will have a greater chance of survival in these weakened areas.

MTC Horticulture was engaged by VMS staff to inspect the conditions and evaluate current methodologies, and if necessary, propose ideal methodologies for the treatment of the grubs in Laguna Woods Village. MTC recently inspected turf areas showing evidence of grub activity in Laguna Woods Village. The inspection included shallow excavations to investigate the subsurface conditions. The excavations revealed large infestations of *Cyclocephala pasadene* larvae (Exhibit 3).

Exhibit 3

In the exhibit, multiple sizes of grubs are present, indicating that the eggs were laid over a longer period. Most of the grubs, the larger ones in the photo, were most likely deposited last fall and overwintered and or were deposited in early spring. The smaller grubs indicate that an early and late summer egg deposit has occurred in the turf.

Due to this infestation and multiple ages of the grubs, a chemical insecticide treatment is recommended. Merit®, with the key active ingredient of Imidacloprid, comes in multiple labels and forms is the recommended. The granular form is Merit .5 G, a granular form of the product while, Merit WP is a wettable powder that can be tank mixed and sprayed through a large spray tank directly on the turf. It is recommended to water in the granular form then cover with mulch to aid in moisture retention and turf rebound. Supplementing with a gypsum and a good fertilizer similar to Simplot® 6-24-24, would aid in the regrowth of the turf.

A review of the methodology used by VMS staff for the treatment of grubs meets the above criteria; VMS staff will begin implementing gypsum and fertilizer in future treatments.

Respectfully.

M. Tom Carrasco
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