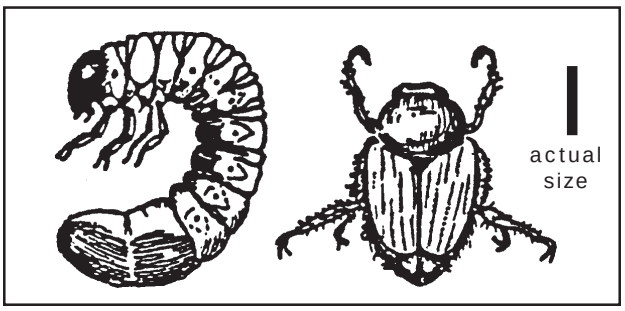
HOME GROUNDS FACT SHEET

Cornell University
Cooperative Extension
Nassau County

Horticulture Center
Demonstration & Community Gardens
at East Meadow Farm
832 Merrick Avenue
East Meadow, NY 11554
Phone: 516-565-5265

Turfgrass Grubs



Grubs are the immature or larval stage of beetles that cause major economic losses to turfgrass by chewing off its roots. Japanese beetle, Oriental beetle grubs and European chafer cause the greatest turf damage on Long Island.

Identification of turfgrass grubs

Grubs are one-half to one inch long and usually lie in a C-shaped position. They are dull white with a brown head. The posterior part of their bodies may be darkened, but that is dependent on whether the insect has recently been feeding - the darkened area is the contents of the intestine. Grubs can be further identified by the pattern of hairs on the tip of the grub on the "belly" side. It is important to know what grub you have because it makes a difference as to what kind of treatment you use and the timing of that treatment.

Damage from turfgrass grubs

Damage occurs whenever larger grubs are feeding on turf roots near the surface during the early fall and spring. Turfgrass areas heavily infested with grubs can be rolled up like a carpet because the grubs have severed the roots from the plants. Lawns and other turf areas that are infested with turfgrass grubs can be completely killed.

Determining if grubs are present

To check for grubs, choose an area that is just outside a dead or thinning patch of grass. Pull up a piece of turf and examine the root zone for grubs. Grub-injured turf will pull up easily. If you have a high population of grubs in the spring, hold off treatment because they will not be very susceptible to treatment at this stage. The most vulnerable stage is right after they have hatched.

Life cycle

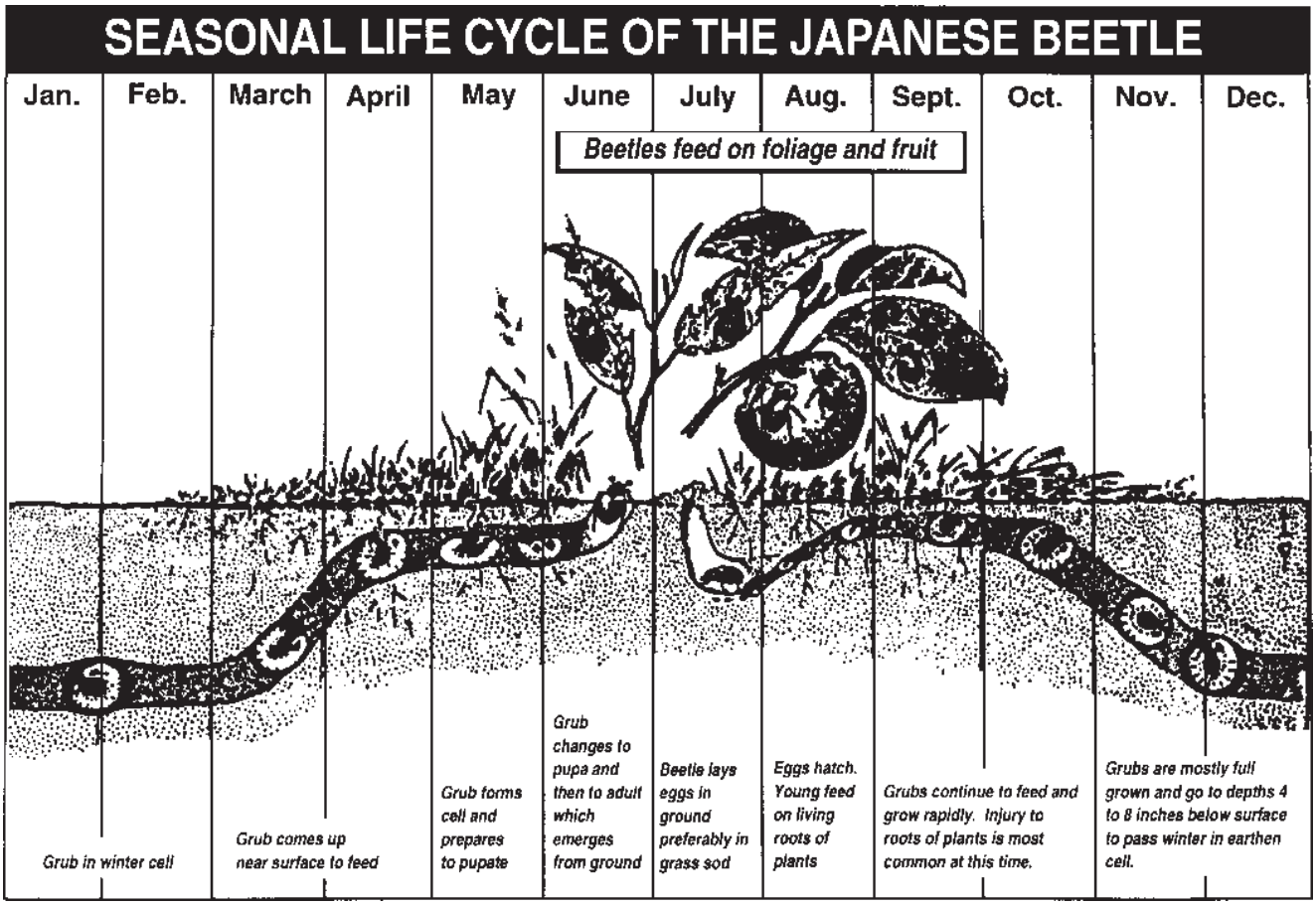
White grubs are the immature stage of Japanese beetles, Oriental beetles, European chafers, Asiatic garden beetles and others. They generally complete their life cycle in one year. The adult beetle lays its eggs in early to mid-summer and by August the young larvae are feeding on turfgrass roots. The grubs are small, feeding close to the surface and vulnerable to treatment at this time. In the fall, the larvae move deeper in the soil (2-6"), where they stay for the winter. When the soil temperatures begin to rise in early spring, the grubs move toward the surface, where they feed on actively growing turf roots in the upper two inches of soil. They move up and down in the soil with fluctuations in temperature and moisture. When feeding is completed, the grubs pupate and emerge as adults. Some feed on foliage and fruit of a wide variety of plants in the garden.

Prior grub damage

White grubs generally feed in the spring and throughout the late summer and early fall. The damage is usually more evident during the later feeding period. During the spring, populations of grubs can go unnoticed because cool temperatures and plentiful amounts of rainfall provide the grass with enough water and a stress-free environment. Damage can be observed in July when the grubs are no longer in the soil but the grass can be easily pulled up, as if grubs were present. This prior grub damage can weaken the grass for the rest of the summer. Replace badly damaged areas, fertilize and regularly irrigate weakened areas during periods of dry weather.

C-2-17 MTC:re revised RT 6/06

-continued-



Integrated Pest Management (IPM) Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

** A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g.* ***insect****icide,* ***fung****icide,* ***herb****icide, etc.*

Milky (spore) disease powder

This is a bacteria that only affects Japanese beetle grubs. It has been applied extensively on turfgrass in the Northeast for many years, but is of questionable value on Long Island for the following reasons:

- The bacteria is only effective on Japanese beetle grubs and is of limited value against other common grub species infesting turfgrass on L.I.
- Soil temperatures are often too cool for rapid buildup of the milky spore disease; therefore, it often takes at least several years minimum for disease populations to rise to sufficient levels to make an impact on Japanese beetle grub populations.
- Milky disease bacteria can only multiply in the living bodies of grubs; therefore, one must be willing to tolerate a period of relatively high grub populations to obtain disease levels to control grubs.

Controlling grubs

Treat when turf averages 8-10 or more grubs per square foot, or if damage from grub feeding is evident. Sampling should be done in early August when soil is moist.

If the count deems a treatment necessary, apply to moist soil during mid-August through mid-September. Water with at least ¼" to ½" of water before and after you treat to attract grubs to the surface. This will ensure better contact between grubs and treatment. Only late summer or fall treatments will reduce next spring's population.

Currently there are no spring-applied products available to consumers on Long Island that will control grubs for the whole season. While you may hear or see advertisements for spring-applied products for season long control, their residual nature and impact on the aquifers has resulted in the NYS Department of Environmental Conservation (DEC) restricting their use. These products are only available for sale and use by Certified Pesticide Applicators.

If you choose to use a pesticide, please contact your local Cornell Cooperative Extension office for specific recommendations.

Additional IPM considerations

- Don't use Japanese beetle "traps."
- Reducing irrigation and increasing the height of mowing may discourage egg laying by adult beetles.
- Asiatic garden beetle grubs feed deeper in soil than other grubs and may not need to be treated.

C-2-17 MTC:re revised RT 6/06