

## Beetle-mania

By Mike Goatley, Extension Turfgrass Specialist, Virginia Tech

It's been well over 40 years since John, Paul, Ringo, and George swarmed over the United States in their version of "Beatle-mania". However, homeowners still experience "beetle mania" almost every summer in the mid-Atlantic. If you're having trouble with beetles (and/or grubs in your lawn and landscape) then mid-summer is the ideal time to treat.



There are a host of beetles that descend on our landscapes, gardens, and outdoor lighting in mid-summer. Some are potential worrisome pests, while many are causing little, if any, damage. Of most concern is the Japanese beetle (pictured above), a voracious feeder on the foliage of many ornamental and garden plants that often warrants treatment as an adult. However, it is the



soil-residing grub stage of beetles that find in and around the landscape (June beetles, masked chafers, etc. pictured to the left) that might be contributing to problems very soon.

If you are targeting beetles because of damage to ornamental and garden plants, please refer to specific extension publications on insect control for these situations at the <http://www.ext.vt.edu/resources/> web link. For this publication I will consider only beetle management from a turf standpoint, and that deals

primarily with the immature stage that resides in the soil: the white grub.

**First of all-- is treatment necessary?** That is something only YOU or your lawn care professional can decide. It is normal to get several calls about grubs early in the year when folks first start stirring in their gardens and ornamental beds and they find quite large grubs in their tilled soil. Grubs rarely cause noticeable damage at this time of year because of the mild temperatures, but if you find more than 5 large grubs per sq ft, a spring insecticide treatment might even be warranted. However, their size and location deeper in the soil make this treatment usually much less effective than desirable. Later on in the year, if the turf is reasonably healthy and summer moisture and heat stress are minimal, it is still very likely that treatment is not necessary, even on cool-season grasses. Warm-season grasses have an even greater inherent tolerance to grubs since they are actively growing during the summer months.



**How can you identify grub damage?** Mother Nature provides numerous clues that suggest their presence. If your turf has had (or currently has) patchy, dying spots that can easily be pulled from the soil (photo on right), this would suggest grub damage because of the lack of a root system. Of course, the only way to confirm grubs is to sample the soil in the area with a shovel or spade and see if you can find grubs. However, realize that in mid-summer they will be very small



in size and quite difficult to see. Another sign of heavy grub pressure is turf damage due to birds or skunks digging into the turf in search of a tasty meal (photo, top of next page). Most of the time, the damage done to the turf by the hunting animals is usually far worse than the grub activity, so address this problem quickly to minimize turf disruption. Insectivore feeding activity is more common in late spring or mid-fall when the grubs are fairly large in size, rather than mid-summer when the grubs are very early in development.



**So when is the BEST time to treat?** Adult beetles mate and lay eggs on the soil surface of lawns throughout the summer period. The eggs hatch and thousands of young grubs begin to feed on turfgrass roots. Their small size means they cause only minimal damage for a few weeks, but their large numbers, voracious appetite, and rapid growth rate can turn an insignificant pest into a

full-blown problem quickly. Since the grubs are small and near the soil surface, insecticide treatments are optimized during mid-summer. However, remember that if the turf is healthy, it can withstand quite a bit of grub feeding.

**What to treat with?** Refer to the 2008 Pest Management Guide <http://www.ext.vt.edu/pubs/pmg/hga5.pdf> for a complete discussion of control options. There are several biological control agents (nematodes, bacteria, fungi) that provide excellent grub control (though some are species specific) IF appropriate commitment is made to staying with the program and following the specific handling and application instructions. In particular, milky spore is a very popular biological control agent sold at many big-box retailers. However, milky spore is only active on Japanese beetle grubs, so if one happens to have other species present, they will not be affected. Numerous broad-spectrum synthetic pyrethroids, carbamates, and organophosphate insecticides that have been around for years are still labeled for various turf uses, and a great deal of attention is given to new generations of low use, very pest-specific insecticides (i.e. low impact on non-target insects) that offer extended control and greatly reduced possibilities of undesirable environmental impact. Two of the most popular active ingredients to look for in these new generation products are imidacloprid and halofenozide. As for any pesticide: **ALWAYS FOLLOW THE LABEL INSTRUCTIONS TO MAXIMIZE CONTROL AND MINIMIZE NON-TARGET EFFECTS. THE LABEL IS THE LAW.**

**What about beetle traps?** No discussion on beetle control would be complete if it did not include some mention on traps. 'Beetle bags' are highly effective in attracting and capturing beetles. VT Entomologist Eric Day indicates that the lures in the traps contain a sex pheromone that attracts the male beetles and a "flora lure" (i.e. something mimicking a "flower") comprised of a chemical called eugenol that is attractive to both female and male beetles. The beetles enter the bag, and due to some great engineering design, they can not escape. One can capture literally bags of beetles on a daily basis during swarm periods. And this brings up a critical point in maximizing their effectiveness -- empty the bags regularly during the heaviest insect pressure periods. No, it's not a pleasant job, but this is the only way to use traps effectively. Eric even indicates there is some evidence that pulverizing the dead beetles (some have used a blender to make a beetle slurry... could this be referred to as 'Beetlejuice' ?!) in a blender and pouring this concoction around plants has 'beetle deterrent' properties. So, if you want to wow your friends and neighbors... ?



Most have heard that you should be suspicious if a neighbor gives YOU a beetle trap as a 'gift'. Research many years ago indicated that although traps are highly effective in attracting beetles, the net effect was that they often were not a "significant control" mechanism, and there typically was more landscape damage from beetles attracted by the traps that decided to feed on surrounding plants while they waited for their opportunity to enter the bag. However, Eric Day recommends that beetle traps can be used effectively IF you clean them regularly AND place multiple traps within 30-40 feet of the plant material you desire to protect.

If you have further questions, please be sure to contact your local extension office for more information on best management practices in lawn and landscape management.