

Japanese Beetles

By Sarah Hashimoto

Every year we have to contend with lots of pests in the garden: cucumber beetles, squash bugs, potato beetles, bean beetles, and flea beetles are just a few that bother us on a regular basis. This year, however, we have seen an unusually high number of Japanese beetles in the gardens (Zion has been hit particularly hard, but they have been present in other gardens as well). Realistically, this isn't a problem that is going to go away soon, especially if we get good crops of larvae thriving in the lawns this fall. Still, a little knowledge, some row covers, and a good supply of organic pesticides and biological controls go a long way. Good luck!

What do they look like?

Adults are about 3/8" - 1/2" long, with metallic green head and body, and copper wing covers ("space-age bugs," according to Dan Clark, the site coordinator at Zion). The larvae are C shaped white grubs, similar to June bugs or European chafers.

What do they eat?

The larvae are voracious eaters, feeding on turf roots in both the fall and spring. As Jeff McCabe, a gardener at Zion, noticed, pretty much everything (even tomato plants, when they're in a pinch). In the vegetable garden, they are particularly fond of beans, raspberries, blueberries, rhubarb, grapes. They are also very destructive in the flower garden, where they feed on everything--hardy geraniums, roses, shrubs...the list goes on and on.

What is their life cycle?

Two years. From early to mid-August, the adults will stop feeding and move to the lawn to lay eggs. The larvae (white, c-shaped grubs) will feed on the turf roots in the early fall, then they move down lower for the winter. They will surface and feed on the turf roots again (more briefly this time) in April and May before reemerging in mid-June to early July. Yes, these are the same grubs (but not the only ones) that make those ugly spots in the lawns.

How to control them?

There is a lot to keep in mind when trying to control Japanese beetles, since both the larvae and the adults can be devastating in their own right.

Larvae

The best prevention against Japanese beetle grub damage is a well-watered lawn. If a lawn is under stress, it will be much less able to withstand the feeding from the grubs, and it will most likely succumb under this pressure. On the other hand, if the lawn is healthy, it can bounce back from the damage. With this hot, dry (not that the humidity is low, just the rainfall) weather, it would seem that many lawns in Ann Arbor could be in real trouble this year.

To determine if you have a real problem with grubs, you'll have to do a sampling test. In late August, look for patches of dead grass in your lawn. Using a shovel, roll back the dead patch. If it rolls back easily, like a carpet, you've found the problem, that is, the grass rolls back easily because the grubs have eaten all the roots. I should note that if the grass does not roll back easily, it's likely that grubs are not your problem. Remember that your target is not zero grubs per square foot; this really isn't realistic. Rather, you'll have to settle for around eight grubs per square foot. If there has been plenty of rainfall, the lawn can probably take 10-12, but any more than that could be a problem.

If watering has not stemmed the tide for you, you can also try biological controls like beneficial nematodes. (I should note here that milky spore is often cited as an effective control for grubs, but that is less reliable in

Michigan because of the cold winters). Nematodes can be very effective, but they do take a while to start working, so don't expect immediate results. You will see results once the nematodes have had a chance to get established in your soil, because then they can start feeding on the grubs (thus you would want to apply the nematodes in spring for the best results). Nematode populations will increase even more with yearly applications, and by the third year, the results will be considerable. Never apply nematodes to a dry lawn. First, water (at least 1/4"), then apply the nematode solution, then water again (at least 1/4"). Nematodes are living creatures, held in suspension until wetted; once they revive, they need to swim in the water until they reach a depth in the soil where they can live. If that water is not available, they will dry up and die.

Adults

As far as the adults are concerned, there is no simple solution. Part of the problem is simply that the insects are good flyers and are usually present in staggering numbers. The best approach is to combine approaches.

- One thing you might want to consider is pheromone traps. Place the traps at least 50 feet away from the plants you want to protect (in the woods?). Don't wait for the traps to completely fill before emptying, since this may cause you even more trouble later on. Traps are controversial, though, so you'll have to keep that in mind. Do they bring even more insects to the area? Is that even possible? The jury is still out on this one.
- Sometimes it's best to protect your plants with row covers--Reemay or something similar. This is very effective, since the insects reach plants by flying.
- Handpicking. If you handpick, try to do it in the morning, since this is when the bugs are slowest. As Jeff McCabe has discovered, it is helpful to scoop the bugs into a bucket of water, since they can't fly off once they hit the water.
- Pesticides. These bugs really do require the big guns, as far as pesticides are concerned: pyrethrin (this has been very effective for me), rotenone, neem. Repeat applications are often necessary.