

What You Need to Know About Getting Rid of Japanese Beetles

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It's June, and my email account is overflowing with pleas from desperate gardeners. What's the big disaster? Japanese Beetles. From a purely visual point of view, the iridescent green carapaces of these insects are lovely -- but the little beetles themselves are evil, evil, evil. They can devastate your beautiful raspberries and lay waste to your rose bushes in less time than it takes to assemble that new patio furniture you're so proud of. If your landscape is experiencing a Japanese beetle infestation, you probably don't need any more descriptions of the damage they're capable of.

There is a lot of confusion about getting rid of Japanese Beetles. I'm a San Francisco Bay Area resident transplanted to the Midwest, so this particular garden pest wasn't on my radar a decade ago. When I saw my first Japanese beetle, I thought it was cute. Imagine. Here are a few hard won JB facts I've learned that you should know about:

Stopping a New Japanese Beetle Infestation Cold (Homemade Repellant)

Japanese Beetles overwinter in the soil. If your property has been spared in the past and this year you decided to plant, say, rose bushes, you are making your landscape more attractive to Japanese beetles and should be prepared to deal with them when they emerge in late spring. Here's the part that can be difficult to get a handle on:

If you haven't had beetle problems before, here's how it works: Scouts will follow the scent of new, tasty plantings to your property. Once they realize that you have good greens on offer, they'll invite their friends to come along for a free meal. Natural Japanese beetle control works great in this situation because you probably don't have beetle grubs emerging from your soil (more on that in a second). Here's how natural control works:

Snag JB scouts in June when they start to emerge from the ground and toss them in a bucket of soapy water. They're big enough that you can just grab them with your garden gloved hands. If you're squeamish about this method, you can knock them into the bucket by holding it next to the plant and shaking the branch. Plop, the beetle lands in the water and dies soon thereafter. Now, leave the bucket with the dead beetles inside near the plants that seem to be attracting the bugs. (By all means, keep adding to the carnage in the bucket as you discover new beetles.) Arriving beetles will get the scent of dead beetles and steer clear.

When Nabbing Japanese Beetle Scouts Won't Work As Well

This will not work nearly as well if you had a beetle infestation last year. Instead of the emerging beetles from down the block flying to a new location (your property), the grubs are probably already in your soil. When they emerge, lunch (your roses and other lovely plants) are waiting for them like an all-you-can-eat buffet. They just hop onboard and start chewing. Think of them as pesky residents. Your shrubs and plants are the first stop on their to-do list.

Other Ways of Discouraging Japanese Beetles

If you've had problems with beetles in past seasons and think they may be in your soil, there are a number of methods you can use to get rid of them:

Herbal and Organic Sprays - There are lots of natural methods for killing an established beetle infestation. You will probably have spotty luck, though. There are millions of beetles out there, and for every one you evict, another will be along in a few minutes.

It may not be quite that discouraging, but when you see your flowers so completely covered with voracious beetles that their stems are actually bending under the weight -- well, that's a sad day. Natural insecticidal soaps kill beetles that come into physical contact with the wet spray, but spraying the plant won't kill beetles that ingest the soap. Neem extracts are another natural option.

Insecticides -Multiple and diligent applications of insecticide over the course of the summer months can controlJapanese Beetles, but it won't eliminate them. This may seem like the most efficient choice, but it probably won't be as effective as you expect -- and you'll have to keep reapplying the insecticide regularly. Insecticides aren't selective, either. They kill the beetles, but they also kill beneficial insects like honey bees and lady bugs. The following insecticides kill Japanese beetles, but they aren't the only varieties that will do so.

For adults, you may have success with Malathion. To control grubs, some gardeners prefer Diazinon.

Check the labels at your garden center for options like: Sevin, Malathion, Rotenone, Diazinon, Ortho Bug-B-Gon and Spectracide.

Traps - Traps attract beetles and kill them. This sounds like a great idea, but because there are so many beetles in some areas of the country, attractants are like ringing the dinner bell. The traps don't catch all the beetles (the USDA suspects they capture about 75 percent of beetles that approach), and the survivors eat well and attract more beetles -- and more -- and more.

Nematodes - Nematodes are microscopic worms. You introduce them to your soil in spring or fall and they kill Japanese beetle grubs before they have a chance to emerge. There are lots of nematode varieties; some are beneficial in the garden and some are not. Using nematodes to control beetles can be a twofer: Nematodes that kill Japanese beetle grubs also kill other pests like flea beetles and bagworms. This is an all-natural option and nature's way of handling the problem, too. One nematode variety that kills Japanese beetles is the *Heterorhabditis bacteriophora*, but there are probably others, too. Ask your local garden shop for suggestions. Once you eliminate the next generation of beetles on your property, you can use another method, like an organic spray, to get rid of any wayward newcomers.

Milky Spore - This is another organic choice, a bacteria (Bacillus popillae-Dutky) that kills the grub stage of the beetle while it's in the soil (like nematodes) and isn't destructive to plants or beneficial garden insects. Milky spore reproduces in the dying grubs and creates a generation of millions of microscopic warriors blanketing your soil with organic Japanese beetle protection.

As with nematodes, this option won't help get Japanese beetles out of your backyard this season - it will help you control the pests next season and beyond, though. Milky spore comes in granule form. You can apply it to your lawn the way you would fertilizer.



You can see that the best way to control Japanese beetles is to tackle the problem before they become active on your property. After they're present in big numbers, your best option is:

- 1.Deal with the infestation as best you can this season using herbal methods or insecticides.
- 2.Apply nematodes or milky spore soil treatments to kill the immature stages of the pest before they emerge next year.
- 3.Start watching for Japanese beetle scouts next year around the time they're scheduled to emerge and use the soapy water/bucket method to kill them and keep them from spreading the word to other beetles. You can contact your local <u>Cooperative Extension Office</u> to get a better idea of the date Japanese beetles are likely to emerge in your area. They're pretty reliable, and the experts can narrow it down to a two week period or so.

Plants that Attract Japanese Beetles

The easiest way to avoid problems with Japanese beetles is to steer clear of landscape plants and trees that attract them -- if you can bear to forgo some of these garden favorites. If you were a Japanese beetle, these plants and trees would be on your birthday wish list of tasty things to eat:

- Althaea (Althaea spp.)
- American mountain-ash (Sorbus americana)
- Apple, crabapple (Malus spp.)
- Apricot
- Asparagus (Asparagus officinalis)
- Beech (Fagus grandifolia)
- Birch (Betula spp.)
- Black walnut (Juglans nigra)
- Cardinal flower (Labelia cardinalis)
- Cherry
- Clematis (Clematis spp.)
- Common mallow (Malva rotundifl ora)
- Crape-myrtle (Lagerstroemia indica)
- Dahlia (Dahlia spp.)
- Evening-primrose (Oenothera biennis)
- Gladiolus (Gladiolus spp.)
- Grape (Vitis spp.)
- Hawthorn (Crataegus spp.)
- Hibiscus (Hibiscus moscheutos)
- Hollyhock (Alcea rosea)
- Horse-chestnut (Aesculus hippocastanum)
- Japanese maple (Acer palmatum)
- Larch (Larix laricina)
- Linden, American, European (Tilia spp.)
- Lombardy poplar (Populus nigra var.)
- Morning-glory (Ipomoea purpurea)
- Norway maple (Acer platanoides)
- Peach
- Pennsylvania smartweed (Polygonum pensylvanicum)

- Peony (Paeonia spp.)
- Pin oak (Quercus palustris)
- Plum
- Red raspberry (Rubus idaeus)
- Rhubarb (Rheum rhabarbum)
- Rose (Rosa spp.)
- Sassafras (Sassafras albidum)
- Soybean (Glycine max)
- Summer-sweet (Clethra spp.)
- Sunflower (Helianthus annuus)
- Sweet corn (Zea mays)
- Virginia creeper (Parthenocissus quinquefolia)
- Willow (Salix spp.)
- Zinnia (Zinnia spp.)

[source: USDA]

Good luck and happy gardening.

Scouting for grubs

Grubs chew off grass roots and reduce the ability of grass to take up enough water to withstand stresses of hot, dry weather. As a result, large dead patches of grass develop in grub infested areas. These dead patches can be rolled back like a carpet to expose the lack of turf roots. Grubs can be found in adjacent green areas. Early recognition of the problem can prevent this destruction. Starlings and crows, as well as moles, shrews, and skunks may be seen digging up grubs, also damaging the turf.

Grub populations between 7 and 15 per square foot can cause significant damage to non-irrigated turf. Irrigated turf can withstand a higher grub count because the increase in water compensates for the roots chewed off by the grub.

Japanese beetle life cycle

Adults emerge from the soil in early July, feed, mate, and lay eggs. In July adults are noticed feeding on vines, linden trees, roses, and many other ornamentals. Activity is most intense over a 6 to 8 week period, after which the beetles gradually die off. Individual beetles live about 60 days. Over 2 months females can lay a total of 60 eggs.

JB adults feed in full sun at the top of plants, moving downward as the leaves are consumed. Odors emitted from beetle-damaged leaves causes beetles to aggregate. Also, adults release an attraction pheromone that causes them to aggregate. At dusk, this pheromone is no longer produced and the females fly to turf to lay eggs. Females burrow 2 to 3 inches into the soil and lay their eggs. The grubs grow quickly and by late September are almost full-sized (about 1 inch long). When the soil cools to about $60\tilde{A}, \hat{A}^{\circ}F$ in the fall, the grubs begin to move deeper. Most pass the winter 2 to 6 inches below the surface, although some may go as deep as 8 to 10 inches. Grubs feed again in May when ground temperatures are above $50\tilde{A}, \hat{A}^{\circ}F$ (Figure 3).

Timing pesticide application

Adults fly long distances to food plants; so adult infestations do not indicate turf infestations. Timing of pesticide treatment is important. Insecticides for grubs can be applied from May through mid-June, when recently overwintered grubs (larvae) start feeding. However, these grubs are large and may be difficult to kill. Starting in mid-June most grubs are in the pupal stage and insecticides are not effective. In early July adults emerge to feed on plants, mate, and then at night fly to grass to lay eggs. The best time to apply insecticides for grubs is from mid-July until early September. Granular applied insecticides distributed on soil with a spreader are usually the best insecticides for JB (Figure 3).

Figure 3. Life cycle of Japanese beetle: egg, grub, and adult stages. In June, the grub turns into a pupa. It emerges from the soil in late June and July as an adult, to mate and lay eggs. Females live for a few weeks feeding on trees, shrubs and roses in the morning, returning to the turf in the afternoon to lay more eggs. Eggs hatch in July and grubs are almost full grown by late August. Grubs dig deep in the soil for the winter months and then move upward in spring as the soil warms. Grubs do best in warm, slightly moist soil that has plenty of organic matter and tender grasses. However, they can survive in almost any soil.

Eliminate Japanese Beetle Grubs for Ten Years or More!

- Provides long term control of Japanese beetles
- Safe for people, pets and beneficial soil organisms

Milky Spore is a naturally occurring microscopic bacteria (*Bacillus popilliae*) that kills Japanese beetle grubs before they can grow into ravenous adults. It's a long-term solution because it survives winter temperatures. The Milky Spore population increases each year, reaching peak effectiveness about three years after application, and lasts ten years or more.

http://www.gardeners.com/buy/milky-spore-10-oz./05-153.html

- 10-oz. box covers 2,500 sq. ft.
- 40-oz. box covers 10,000 sq. ft.

Solutions for Japanese Beetle Control

By David Grist



A Japanese beetle, feasting on tender, new leaves of a rose bush. Photo: David Grist



Japanese Beetle Killer



Neem Oil Concentrate works on a wide variety of pests including Japanese beetles, aphids, mites, whiteflies, flea beetles and earwigs.



A trap for Japanese beetles.

Japanese beetle damage is pretty easy to identify. Usually, the bugs can be caught in the act. The telltale signs of Japanese beetles include skeletonized leaves or total defoliation. Japanese beetles also love to eat rosebuds — from the inside out. Keep in mind that Japanese beetles are seldom found west of the Mississippi River, but chances are good that they're headed your way.

The beetles are strangely beautiful: roughly 3/8-inch long and 1/4-inch wide. They have shiny, metallic-green bodies and copper-colored wing covers.

Five Ways to Combat Japanese Beetles

Play Defense: A multi-part attack is best. Start by spraying the affected plants with <u>Japanese Beetle Killer</u>(pyrethrin) or <u>neem</u> at the first sign of attack.

<u>Pyrethrin-based insecticide</u> is a safe and effective way to control these pests on vegetables, grapes, raspberries, flowers, roses, trees and shrubs. In addition to controlling Japanese beetles, it also controls cucumber beetles, flea beetles, cabbageworms, Colorado potato beetles, and more.

Neem oil comes from a tree; when sprayed on plants, it reduces feeding. Scientists call it an antifeedant. Important: neem works best when applications begin at first sign of attack.

Hand Pick: Japanese beetles are slow. You can easily pick them off plants with your hands and toss them into a bucket of soapy water. Do it in the morning when the beetles are less alert.

Prevent: Although the following solutions won't provide immediate gratification, you will be better off next year. Grub Guard kills the grubs that turn into Japanese beetles. Ideally, apply it in spring before the beetles emerge. The second half of this 1-2 prevention punch is Milky Spore, which also kills grubs. It takes a year or so to get established in your soil, but it keeps working for 10 years or more.

Trap: The Catch-Can with Bait is recommended only if you have a large yard, and can place the trap away from your garden. If you have a small yard, you'll just be telling the beetles, "The party's at my house!" If you use a trap, put it out for a day or two at a time every couple of weeks.

Related Information

Why Neem Oil?

Not only does it control Japanese beetles in the heat of their feeding frenzy, it also controls: adelgids, wooly adelgids, sawflies, aphids, sawfly larvae, cabbage loopers, lacebugs, scale, cabbageworm, leafhoppers, chinch bugs, mealybugs, spider mites, crickets, earwigs, flea beetles, mole crickets, squash bugs, pear slugs, tent caterpillars, grasshoppers, pear psyllas, thrips, green stink bugs, whiteflies, psyllids, gypsy moth caterpillars, rose slugs, harlequin bugs, rust mites and other soft-bodied insects.

Neem can also be used on roses in a formulation called Rose Rx, which prevents diseases that plague roses: blackspot, powdery mildew, rust, scab, anthracnose and more.

Even if you use <u>Milky Spore</u> and <u>Grub Guard</u>, you can still get Japanese beetles. Yes, they're slow, but they can fly up to a mile for a good meal. Neem can control these outbreaks.

Vulnerable Plants

If you have these plants, monitor them closely:

- Linden
- Crabapple
- Apple
- Japanese maple
- Norway maple
- Rose
- Crape myrtle
- Pin oak
- Birch
- Cherry (plum, apricot, peach)

Grub Guard Beneficial Nematodes Control Your Garden's Worst Enemy

- Contains naturally occurring, beneficial microorganisms that help control Japanese beetles
- Attacks the soil-dwelling, grub stage of the beetle
- Starts working within 48 hours, keeps working all summer long
- Sprayer not included; we recommend our Hose-End Sprayer

Japanese beetles are one of the most destructive garden pests. As adults, they ravage your flowers and vegetables. As young grubs they devour your lawn's root system, and they attract skunks and moles. Grub Guard beneficial nematodes are naturally occurring microorganisms that live in the soil, feeding on Japanese beetle grubs. Unlike chemical controls, they won't harm earthworms or most beneficial insects, and they are safe around pets.

Plants with beetles in Rosedale plots and perimeters

Grapes

Virginia Creeper

Raspberries

Blackberries

Rhubarb

Hops

Roses

Hollyhocks

Beans

Basil

Eggplant

Control Japanese Beetles Naturally

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You don't necessarily need to stock up on traps and pesticides to control Japanese beetles, but you do have to have good timing and a plan. To beat these bugs, you need to be as cagey and as persistent as they are. There's a natural approach, but it isn't magic. It takes catching them early and using their scent as a deterrent. The good news is that this approach is relatively easy and inexpensive.

Natural Japanese Beetle Control

The first step is to take some precautions: Japanese beetles are attracted to diseased plants and trees. The cleaner you keep your garden, the better. This is particularly true when Japanese beetles first become active in your area. Their emergence is predictable in the neighborhoods they inhabit, occurring during the same couple of weeks every year. If you've had an ongoing struggle with Japanese beetles, you probably know their schedule by heart. If not, contact your local Cooperative Extension Office or ask at your local nursery.

Before they emerge is the time for general yard cleanup. Get rid of any rotting wood lying around your property, dispose of dead plants and shrubs and bag dead leaves and general debris like dry grass. They also like windfall fruit from peaches and other early summer fruiting trees.

Deal With the Problem Early in the Season

Japanese beetles send out scouts to investigate the best feeding grounds. They scent mark locations that look promising, and other beetles move in soon after. What looks promising to a Japanese beetle is the presence of plants it enjoys eating. Eliminate those plants and you're less likely to have a problem.

The bad news is that these bugs aren't very discriminating. They like lots of different plants, shrubs and trees. For a good list of their favorites, visit my post: What You Need to Know about Getting Rid

of Japanese Beetles. If you're designing or redesigning your landscape, maintaining fewer of these species in Japanese beetle infested areas will save you time and effort.

Beating Japanese Beetles at Their Own Game



Japanese Beetles' rely heavy on scent, and you can use that as a weapon against them. Here's how:

Kill the first Japanese beetles you see in your garden. It's important that you catch them early, so keep a close watch. They regularly appear during the second week of June in my area. You may be a few weeks ahead or behind that schedule. When you see a few beetles, get to work:

- 1.Fill a bucket about half full of water.
- 2.Add a quarter of a cup of dish soap. (The amount of soap isn't that critical as long as it's present.)
- 3. Snag beetles with you gloved hands and place them in the bucket. If touching them doesn't appeal to you, you can knock them into the bucket by giving the branch they're on a quick shake. This could take some practice.
- 4.Leave the beetles in the bucket. They'll die and begin decomposing. The smell will deter other beetles, and the presence of soap will discourage or kill mosquitoes. (The bucket will only smell nasty to beetles.)
- 5.Set the bucket in an area where you've had bad infestations before, or select a spot that gets good airflow.

In doing this, you're letting new beetles know that the area is off limits. Think of it as the beetle equivalent of razor wire. Leave the bucket in place for at least a two to three weeks, adding to it every couple of days. You'll see beetle activity slowly diminish over that time. If you start this procedure too late in spring, it won't work nearly as well -- if at all.

Japanese Beetle Traps May Not Be a Useful Option

You hear a lot about traps and natural predators as options for controlling Japanese beetles, but the best method is to avoid making your property attractive to them. If you discourage them early enough in the year, Japanese beetles will bypass your garden in favor of more appealing real estate. Once entrenched, they are less likely to come back to your garden in destructive numbers. If you start seeing an increase in activity, kill more beetles and place them in another prepared bucket.

If you wait too long, beetles will settle in, breeding on your property and making more problems you'll have to deal with next year. If this happens, there are other methods you can use to eradicate these pests, especially if you have a large or long standing problem with them in your landscape. Here are some options:

- Put down milky spore.
- Use nematodes.
- Try insecticidal soaps.
- Resort to using insecticides.

You can read more about these options in the post I referenced above: What You Need to Know About <u>Getting Rid of Japanese Beetles</u>

Reference

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