Gardening Tips and Tricks and Home Horticulture July 2024 Issue

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Ricky's Gardening Tips and Tricks and Home Horticulture is an online newsletter designed to provide citizens of Allen County and northeastern Indiana with up-to-date information about Horticulture and home issues, written in a lighthearted style! To subscribe, send an email to kemeryr7@frontier.com.

Japanese Beetle Invasion!

OMG! Did that get your attention? Invading beetles come to destroy our flowers! Oh well, they come every year..sigh… Yet the numbers of beetles appear to be increasing again in our area. Beetle populations were astronomical in the 1990's – tailed off for awhile as the beetle moved west – and now like Star Wars reruns – they are back.

Japanese beetle has spread to many states east of the Mississippi River. Rachel Carson in her book Silent Spring discusses how DDT and related pesticides were used in the late 1950's in an attempt to "eradicate" Japanese beetles moving into the state of Illinois. The resulting bird and animal kills were catastrophic.

The population of beetles peaked during the 1990's in Indiana, and then began a slow decline..

The beetle has made a bit of a comeback in our area in recent years.

It is one of a few pests where both the adults and the larvae do damage. Favorite plants for Japanese beetle adults are roses, grapes, cannas, smartweed, soybeans and other legumes, corn silks, and flowers of all kinds. Cannas and roses are special favorites.

In late June or early July, adult Japanese beetles emerge from the ground. They came because larvae from last year that overwintered in the ground pupated - and then slowly came up to emerge as adults this year. It is the reason that sometimes we find larvae in soil when we dig in the spring. I usually leave the larvae I find out for birds to eat. Normally if the larvae are allowed to develop and make it to the surface, female beetles emerge first and send out powerful feeding and sex hormones to attract other beetles, especially males. She is basically sending out a signal that says, "Let's eat and make love". The males cannot resist. The adult females begin to lay eggs in the ground soon after mating.

In August or early September, the eggs hatch underground into small larvae.. The small larvae feed on turf grass roots. If populations are high, the larvae can kill the turf. The mature larvae will burrow deeper in the soil in the late fall to overwinter in a small "cell". The cycle repeats itself when the larvae pupate and adults emerge in late June or July.

Adult beetles are not hard to kill. Some gardeners simply knock off the beetles from foliage into buckets filled with soapy water which kills the beetles quickly.

According to Iowa State University, spraying conventional insecticides such as permethrin, bifenthrin, or cyfluthrin will help control the beetles. It is typical for Extension sites to only list conventional options for pest control. Do not spray plants that are in bloom or when bees and beneficial insects are present. Try not to use systemic insecticides (ones that travel within the plant) on flowering plants.

Neem is an organic pesticide that kills adults and repels them from areas. I prefer "organic" controls such as neem or Spinosad (Captain Jacks Dead Bug Brew) instead of the more toxic conventional controls. Research has shown that the powerful lures used in Japanese beetle traps actually attract many more beetles than are caught, which can increase plant damage in the nearby areas.

Milky spore and beneficial nematodes are organic options to prevent grub damage to lawns later in the year. One issue is that in order for organics to be effective, other conventional insecticides and herbicides for the lawn should not be used as their use may reduce or eliminate the effectiveness of organic controls.

Unfortunately It takes many sprays of insecticides to control beetles to reduce the damage. Avoid spraying insecticides near flowers. One alternative method of control is to place geranium leaves (from the annual bedding geranium) near plants where the adults are feeding. The beetles cannot resist feeding on the leaves which sends when in a drunken stupor. If they eat enough- the leaves are like fentanyl to the beetles and they do not recover.

Worm Poop – Works For Me

Worm castings are an organic form of fertilizer produced from earthworms. Also known as vermicast, worm castings manure is essentially earthworm waste, otherwise known as worm poo. As these creatures eat through compost, their waste creates an optimal soil enricher. Worm castings resemble football-shaped particles that improve soil aeration and drainage, and also will increase water retention in the soil.

Organic worm castings are excellent for plants. They contain all the essential nutrients that plants need in addition to enriching the soil in which the plants are grown. Not only can this fertilizer be used on nearly any type of plant, it can also be used directly on plants without burning them. Worm castings manure can be applied as top dressing, side dressing, or worked into the soil.

One can make worm castings, or vermicomposting, at home. Worm boxes can be purchased or constructed and come in various sizes and styles. However, when making bins for this task, they should be shallow, between 8 and 12 inches in depth, with drainage holes in the bottom.

Smaller bins work better in the home, fitting just beneath the sink or other similar area. When making a worm castings bin, layer the bottom with coarse sand and strips of moist newspaper. Then, add compost, manure, or leaf litter and another layer of moist newspaper strips and soil. Add some worms and food, such as kitchen scraps or garden waste. To harvest, simply lay out a sheet of plastic or newspaper and empty out the contents of the worm bin. Collect the worms and add them to a fresh vermicompost bin, then use the leftover castings on your plants

Worm castings are alive with microbes and bacteria and are full of organic matter. This helps plants grow a larger root mass which leads to greater yield and the prevention of disease from insects and the environment.

Worm castings provide a rich population of beneficial fungal and bacterial feeders - This active biology helps create optimal, fertile soil structure by releasing nutrients that are easy for plants to uptake.

The size and composition of castings promote air flow and improve water retention, both of which aid in root growth.

A wide variety of water soluble minerals and nutrients are easy for plants to absorb and better than traditional fertilizers, which are toxic and often lost before plants can absorb them.

Basically, if it has a root system, lives in the soil, and grows, it will love worm castings!

In an existing garden, spread 1-2 inches of castings on the soil above the plants' root systems. Gently work the castings into the soil and water lightly. This can be done 2-3 times a year.

If you are planting a new garden or raised bed, you can instead mix 15% to 20% (1:5 ratio) castings with your soil or favorite planting medium before seeding or planting. Products containing worm castings are also available commercially. I have used an organic topsoil enriched with worm castings and I really like it. It is very difficult to find. Wiggle Worm castings are available on Amazon and this products is highly rated by experts and consumers.

Scale Insects – The Vampires of The Plant World

Scale are small soft-bodied insects that cover themselves with layers of either flexible or stiff wax. These covers help them blend into their environment, prevent them from drying out, and hide them from predators. For gardeners, this shield also blocks most contact insecticides from touching the insect itself. Once a plant becomes infested with scale , it is a tremendous challenge to get rid.

Scale are sorted into two main categories:

- **Soft scales** have a leathery or gum-like pliable wax that stays firmly attached to their bodies. Some will move between leaves and twigs depending on the time of year and their life cycle. They feed on juices in vascular tissues - the sap in the phloem, either under bark or in leaf veins. They excrete honeydew.
- **Armored (hard) scales** have a shell-like, stiffer, or parchment-like wax that does not attach to the scale's body. They tend to remain in one place once settled. They feed on the contents of individual plant cells, either under bark or in foliage. They do not produce honeydew.

Crawlers: Scale insects have a simple life. Eggs are laid underneath the scale covering of the adult female. When the eggs hatch, tiny immatures called "crawlers" emerge. They are called crawlers because they walk away from the maternal scale to settle at new feeding sites. They are also very light in weight, so they can be moved to other plants by wind or are inadvertently transported by people or birds When the crawlers arrive at a suitable location, they insert their mouthparts into the plant, and begin to feed on the plant's sap. The shell or scale characteristic of the species develops soon after feeding begins. Many "crawlers" head towards growing vegetative tips, making this location suitable for scouting. Various sticky traps, including double sided tape wrapped around branches are utilized to determine the presence of scale "crawlers

The crawler stage of scale development is the most vulnerable stage of development to insecticides. Most people (me included) don't have the time or energy to monitor constantly for crawlers – whose emergence can depend on then type of scale - degree days - and weather conditions.

Types of Scale Insects

Oystershell Scale: Oystershell scales are hard scales that are brown and shaped like an oyster shell - about 1/8" long. They are found on twigs of lilac, ash, redbud, dogwood, poplar, willow, horse chestnut, elm, beech, walnut, cotoneaster, apple, birch, pachysandra, and other species. They overwinter as white eggs under the scale coverings. The eggs hatch in May, around the same time lilac blooms begin to fade. They achieve maturity by August. There is one generation per year.

Euonymus scale (Picture to right) is a very common and is characterized by brownish encrustations of the stems and twigs, and whitish spotting of the leaves, mainly on the underside. The primary host is Euonymus, but it is also found on Pachysandra and Bittersweet.

Fletcher Scale: The Fletcher scale adult female is light yellowish-brown, almost globular, and about 1/8 to 13/64" in diameter. It commonly attacks Yew, juniper, and arborvitae. Only the females overwinter. They lay their eggs in late May and the eggs hatch by early July. Foliage on the inner portions of heavily infested plants is often blackened by sooty mold growing on the honeydew excreted by the scales. There is one generation per year.

Pine Needle Scale (to left): The primary host of the pine needle scale is pine or spruce and occasionally Douglas fir and hemlock. The eggs of the pine needle scale overwinter under old female scales and hatch into crawlers in May. Females develop white scales about 1/10" long, while male scales measure about half that length. The pine needle scale reaches maturity by July. A second generation reaches maturity in fall

In many parts of the state, we are seeing an outbreak of **Lecanium scale** on hardwood trees – especially oaks.. The first clue in urban areas is sticky droplets on cars parked under infested trees. These tiny drops of honeydew produced by scale insects as a way to excrete excess sugar may become very hard and difficult to remove when they dry. The outbreak is a peak year (or several years) of a five- to 10- year cycle driven by parasites and predators. Although Lecanium scale is mostly a nuisance problem, heavy populations sometimes persists for years, particularly where natural enemies are suppressed by insecticide sprays

Lecanium scales are soft scales that feed on the phloem of trees and shrubs generally reducing vigor. High populations can result in stunted foliage, chlorosis, twig death, and dieback, particularly due to the feeding female scales from April-May. Their feeding habits result in copious amounts of honeydew (excrement) that can cover plants and structures beneath infested trees. Honeydew, rich in sugar, may provide a substrate for sooty mold to grow. Sooty mold is black in color and it is not a plant pathogen; however, it can reduce the aesthetic value of the plant it covers. Honeydew and sooty mold in large amounts may both also be a significant nuisance on structures including outdoor furniture, patios, and cars.

Magnolia scale is one of the largest scale insects in the United States. It feeds only on magnolia. This species is native to the United States and is widely distributed throughout the eastern United States.

A reduction in foliage and flower production may result from an infestation. Twig and branch dieback may also occur. Twigs of the host plant that are normally light green appear enlarged and purple from a massive magnolia scale infestation. This soft scale also secretes large amounts of honeydew which gives the plant an unsightly appearance; black sooty mold develops on the sticky honeydew. The honeydew attracts large numbers of ants, wasps, yellowjackets, and other noxious insects. An early spring application of dormant horticultural oil will help reduce an infestation if applied after the danger of freezing nights has passed, but before the buds have opened. Late August through September is the time to apply a registered insecticide to manage the crawler stage.

Control Options:

Removal of the scale is the most environmentally friendly approach, but not always practical because scale often populates inaccessible plant parts

Remove with a brush: A strong spray of water, combined with a soft scrub brush, can manually dislodge many of the scale covers or remove their protective wax. Once exposed, they are vulnerable to predators and desiccation.

Pruning: Branches that have drastically declined or already died should be pruned out. Plants that resprout readily and have multiple main stems can have entire branches laden with scale removed.

Encourage natural predators: For scale, they include tiny parasitic wasps and flies, lady beetle adults and larvae, insect-specific fungi, and predaceous mites. Minimizing pesticide use will conserve them and allow them to both limit an existing outbreak and help prevent them from recurring.

Pesticide Applications:

There are **two main windows of opportunity** for you to apply pesticides to control scale on outdoor plants - during crawler activity - and during the dormant season when scale insects and juveniles overwinter. Both may be needed for achieving good control.

Summer Oil Applications: targeting crawlers

- Use **horticultural oil** at a **1%** dilution rate.
- **Coverage must be thorough**, coating all bark or leaf surfaces (upper and lower).

Horticultural oil tip: Test a small area first on evergreens, and do not use oil on plants with blue foliage (like certain junipers, spruces, and cypresses) as this will remove the leaf wax that gives them their color.

- Repeat applications will be needed if the window of crawler activity is long. Follow product label instructions regarding how long to wait between sprays. Oil applications can damage leaf tissue.

Dormant Oil: targeting overwintering stages

- Use a **dormant oil** application upon leaf drop in late fall or before bud-break in early spring. Check the product label for the proper temperature range for application. For instance dormant oils cannot be applied if rain or freezing temperatures are imminent.
- **Coverage must be thorough**, coating all bark surfaces.

Systemic insecticides, which are absorbed by the plant and then ingested by the scale as they feed.

- They should be applied at the first sign of crawler activity and may control scale throughout the rest of the season.
- If systemics are applied after the bloom of the scale's host plant, it should have minimal impact on pollinators.

The most common systemics used for scale include Bayer All Season Insect Control, Safari, or Orthene.

They are usually applied as a drench around the base of the plant.

For a boatload of more information about scale insects visit this link.

Scale insects on Minnesota trees and shrubs | UMN Extension

Overdoing It Or What Are We Doing?

Let's face it – as gardeners we can't stop. We are always trying to add plants to areas or create space when really it might have been better had we just let things be. We can't help ourselves. It's like Miss Marple- one of my favorite Agatha Christie detectives – always looking for a motive when there doesn't seem to be any motive at all. She does like her garden after all.

Many folks could see the landscape below left as beautiful , but really way too many plants of different types occupying an area that seems designed more to impress than to be functional. Maintaining that area would be a nightmare.

Many times I see landscapes where a dry gravel stream bed is created – not realizing that after time it will become a weed-infested nightmare. Love the trash bins near the entrance.

The picture below illustrates an isolated bed in the middle of the lawn. I refer to these as “pimples in the wilderness” Sure this is an evergreen that will completely overgrow its space and obscure any view to and from the house- but surrounding it with edging that it will quickly overgrow is not good. I see a motive for complete pimple domination.

Sometimes folks create a space filled with gravel or mulch and then plant nothing in the space. It appears as if someone ran out of things to do – so that they decided to do something – and yet nothing at the same time. Again a maintenance nightmare for no reason. It is like Miss Scarlet meeting Colonel Mustard in the Conservatory that contains no plants and no lead pipe to bash his head in with.

If You See This - Then

Early Blight Tomato – pick off diseased leaves – Don't water in late evening- Use Complete Disease Control spray.

Powdery Mildew

Same as above

Get ready for a mosquito invasion. Avoid exposure by limiting activities at dawn and dusk. Use appropriate repellants

From The Garden

The picture below left shows an extremely rare prairie wildflower in our garden called royal catchfly. If one sees this in a prairie remnant as I did long ago in a cemetery remnant – one knows the remnant is at the highest level. It is very drought tolerant, pollinator friendly, and very rare. Below right is my row of false sunflowers, another native wildflower that I believe more people should use in their gardens. It is a tough customer when established.

Curious About Curculio

University of Illinois Extension

Adult with crescent shaped scar on fruit

Plum curculio is a native pest distributed throughout the peach-growing areas of the United States. It feeds on almost all stone and pome fruits, including apples, peaches, and plums. It is a major pest and very difficult to control once it is established. The plum curculio damages the fruit by feeding and laying eggs within the fruits. The egg hatches inside the fruit, allowing the larvae to feed and develop internally, inducing the fruit drop and crop loss. If the pests are not controlled in time, it can cause a huge loss in fruit production

Plum curculio is a small snout weevil that is brownish black in appearance. Adults have grayish-white patches and humps on their backs. Eggs are laid inside the fruit and are minute, whitish, and elliptical-shaped. Larvae develop inside the fruit and have a little whitish body, brown heads, and no legs

Adult plum curculio beetles first appear in orchards during the time of apple bloom. Most beetle activity occurs during the first warm period after petal fall, when the maximum temperature is 70°F or higher. Eggs are laid singly inside the fruit, and on average, an adult female lays 400 to 500 eggs in its lifetime. The egg hatches inside the fruit in about a week, and larvae tunnel inside the fruit. Larvae undergo four instars or molting periods, and the last instar comes out of the fruit to pupate in the soil.

Both the adult and larvae of plum curculio are responsible for crop injury. The egg-laying injury by adults can be identified as a crescent-shaped scar on the skin of developing fruit and feeding scars are observed as small round holes on the fruit's surface. Inside the fruit, the larval makes a tunnel shaped structure and feeds upon the flesh. Plum curculio infestation in the young fruit causes the fruit to drop. The infested fruit is unfit for human consumption and marketing

Good sanitation practices will help reduce local plum curculio populations. Removing wild and ornamental fruit trees growing near orchards will reduce harboring populations and appropriate habitats. Communication with neighbors may be necessary to facilitate this effectively. It is also important to remove fallen fruit during the summer in an infested orchard. Fruit on the ground can be collected and fed to animals or disposed of in the trash.

One can also shake or beat tree limbs and trunks with a padded stick or mechanical shaker to dislodge plum curculio adults onto tarps or white sheets where they can be collected and destroyed. Mechanical control is labor-intensive and best suited to small-scale and organic orchards.

Neem or pyrethroids are organic insecticides that can be used for curculio control.

Hoggles – Demented Cat Logic

To my caregiver: I have heard through my cat grapevine that you recently went fishing. It is no surprise you caught nothing. I can tag along on your next expedition for good luck. I do demand one fish for every two caught in restitution for my efforts- plus soft bedding with an umbrella for shade. My fur is thin -and I worry about sunburn..

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