



Comments

Wow, it's SUMMER today – officially!! While I write this edition of the *P.E.S.T.*, I'm in Oklahoma, attending a high school reunion with my wife. Oklahoma had abundant rain this spring and everything is still green, but the temperature is oppressive! It's been 95-99°F every day and the humidity is about the same! I've only been able to get out and collect in the morning as I can't seem to take the extreme heat any longer! I grew up in Oklahoma and I remember summers as being “dry heat” not this humid heat.

It's been quite a while since the BugDoc hauled out his soapbox, but some events over the last couple of weeks have forced me to do so! I know I'll probably irritate some of my subscribers, but I can't hold back! About two weeks ago, a homeowner sent in some questions about how many plants in their landscape were looking after a commercial firm had just made a treatment. When asked what the treatment was, the answer was what I call “The Unnecessary Cocktail Mix!” Yes, the commercial applicator was still applying a mix of a pyrethroid insecticide plus a miticide, plus a fungicide!

My complaint about these types of general cocktails applied to everything in the landscape are multiple! First, it assumes that every plant has an insect, mite and/or disease issue. The reality is that most plants don't have any of these at the time the application is made. Second, the insecticide and miticide components of this cocktail are broad spectrum pesticides so they kill everything, good and bad. All the beneficial predatory insects and mites, the little wasp parasites and even the desired butterflies are zeroed out by these treatments. Fortunately, these companies only treat a patchwork of properties in any neighborhood, so the beneficials from neighboring properties can eventually reestablish themselves. Third, we have good evidence that regularly scheduled insecticide, miticide and fungicide applications are more likely to cause pests to develop resistance!

Fourth, cocktail treatments indicate that the

company doesn't “trust” their technicians to make decisions about what should be done in such landscapes! It doesn't take a well-trained technician to “hose” down a landscape! The person only needs to know how to read a map, fill out the required forms and pull a hose!

Top companies are providing their technicians with three to five backpack sprayers, soil injectors and similar equipment. If the landscape has been appropriately “mapped” (this is a simple map of the landscape that identifies the trees and shrubs and their locations), the technician can look at plants at risk, and make a targeted application where needed! The problem with this program is the technician needs to know what the plants are and what the pests look like!

Frankly, this is one of the reasons why I produce the *P.E.S.T.* – that is, to provide education for applicators to make better timed and better informed treatments that work!

The BugDoc (Dave Shetlar)

What Was That?

Hickory Tussock Moth Larvae Show Up!

Over the last month, I've had a steady stream of hickory tussock moth adults coming to my light trap. When this happens, one can assume that their larvae won't be far behind!



Small hickory tussock moth larvae, still in gregarious phase.

The hickory tussock moth has become one of our most common general defoliators of landscape (and forest) trees. The larvae are actually quite pretty, but being really distinctive and easily observed means that they are likely dangerous to handle! The larvae start out appearing to be covered with fine white hairs with a few black hairs arranged in rows. As the larvae grow, the white hairs begin to appear in rows of tufts with a single row of black tufts down the back.

As they reach full maturity, they also develop two long black tufts arising from the front and another pair in the back. If you look closely, the hairs are not really hairs, but barbed spines! These spines are hollow and contain some toxins. If these spines pierce the skin, the sensation is a burning or stinging sensation!

As their name implies, this pest prefers hickory and walnut, but it has become increasingly common on oaks, willow, ash and elm trees.

I have several ways of dealing with this caterpillar. If you have a sharp eye, the females often attach a hundred or more eggs to a leaf of a potential host tree. When the larvae hatch, they are gregarious, that is they will feed side-by-side. They first skeletonize a couple of leaves near the egg mass. These leaves quickly turn white or straw colored which is easy to spot (if you are looking!). Simply prune out the leaves with the caterpillars and destroy by stepping on them or dropping them into a bucket of detergent water.

Of course, sprays are the normal treatment. If under ½-inch long, the caterpillars can be treated with the bio-based insecticide, *Bacillus thuringiensis*. Otherwise, pyrethroid sprays are the most commonly used insecticides. However, I prefer to recommend sprays of Tristar (acetamiprid, a neonicotinoid with minimal bee toxicity) or Acelepryn (chlorantraniliprole, a diamide with no bee toxicity). If sprays are not possible (because of spray drift to adjacent properties), consider using Lepitect (contains acephate, an organophosphate). This can be soil injected around the base of trees and it is picked up and transported to the foliage.

Gypsy Moth Larvae Pupate – Pheromone Flakes to be Dropped!

Last week, I was amazed at the number of mature gypsy moth larvae that I found on the west side of the Ohio State University campus! The nearly mature larvae were lined up, side-by-side among the fissures of the bark of infested trees. These larvae will be pupating this week and the adults will begin to emerge in a couple of weeks.



If you notice such larval activity, you can still try some controls! Apply one of the pyrethroids at its

highest label rate (usually 0.2 pounds active per 100 gallons of spray) to the trunk of the tree as far up as you can reach. If you use the water disperseable granule or flowable formulation, the residues will remain on the bark surface. This will be picked up as the caterpillars walk across the bark as they hide or look for pupating sites. If you use this treatment, watch out where you walk around the base of the tree as there can quickly be a pile of dead caterpillars that accumulate. Like the tussock moths, large gypsy moth caterpillars have irritating hairs on their bodies.

I have already received notice that the Ohio Department of Agriculture will be releasing their pheromone flakes as part of their Gypsy Moth Slow the Spread Program. These applications look suspicious to many unknowing residents as there will be a plane or helicopter flying back and forth spraying “something.” In fact, it is this pheromone. The pheromone is designed to permeate the air with the sex pheromone. This is something that humans can’t smell, but gypsy moth males are very sensitive to. The idea is that if the air is filled with this “perfume,” the males won’t be able to locate the females that are also releasing the pheromone. The pheromone has been proven to be harmless to humans, pets, birds or other wildlife in the area treated.

Carpenter Ants Release Swarmers!!

Now is the time that several species of ants release their new reproductives which are commonly called swarmers. Ant colonies that have survived for a couple of years or more develop new queens and drones that have wings when they emerge from their pupal cases. These swarmers are usually released at “events” that are often stimulated by rainfall or passage of storm fronts. What is interesting is that most species of ants, in different colonies, will release their swarmers at the same time. Biologically, this makes a lot of sense as it affords the best opportunity to mix up the ant’s gene pool.

Over the last couple of weeks, I’ve received a rather steady trickle of carpenter ant winged reproductives in my light trap, but recently, I’ve noticed pavement ant and field ant reproductives in my trap. The emergence of the new reproductives is only the first step in a really precarious adventure. Most of the ant species actually mate during flight. The females are often three to five times the size of the males and she can easily keep flying while the male copulates with her!

After copulation, the male drops away to die, and the newly mated “potential queen” needs to start a new nest. Carpenter ant females search for recently felled trees or trees that have bark damage. If they find a cavity, they will chew some of the nearby plant fibers to make a distinctive brood cell. These are roughly oval and perhaps 1.5 by 1.0 inches. Within this chamber, the female lays several eggs. When the eggs hatch into larvae, the female then produces sterile eggs that are used as food for the tiny larvae. This feeding continues for three to four weeks when the first larvae are ready to pupate. The poor female has had to use all her body fat and even her wing muscle tissues to produce the eggs and food eggs. When the first workers emerge, they are usually only half the size of normal workers, but they open up the brood chamber and begin searching for honeydew and other insects to feed the queen and a new crop of brood. The next workers are more normal in size. As the colony increases, the workers also chew the wood fibers and remove them in order to enlarge the colony space. Occasionally, the entire colony will move to a new location where there is softer, rotting wood in which to excavate space to house the colony. The potential queen is now a real queen!



The pavement ants and field ant undergo the same procedure, except the potential queens make cells in the soil to use for their brood chambers.

All these ants also have to survive predators and other ant colonies that may send raiding expeditions to eliminate nearby competition! In short, most potential queens never make it to be a successful queen!

As usual, for carpenter ants and soil-inhabiting ants, I’m a fan of using baits rather than trying to inject the colonies with insecticides. In my experience, the Advion ant bait and Maxforce ant bait have provided me with the best success. Both can be obtained in professional formulations on the Internet and both are legal to be purchased by homeowners or professionals.

Check for Iris Borers!

I was noticing my daylilies are coming into full bloom as the bearded iris and Japanese iris flowers are beginning to fade. The iris borer is the most devastating pest of Ohio iris plants as the larvae burrow down the flower stem to the rhizomes. In the rhizomes, the caterpillars can reach nearly two inches in length and they can completely destroy the rhizomes by mid-August.

I normally recommend checking iris plants as the flower stems begin to emerge, but their activity is really subtle and difficult to detect. By now, the larvae have likely begun to make noticeable brown trails. The larvae actually eat their way down the fold of the iris plants. If you inspect iris leaves, remember that they grow with the inner leaves



Mature iris borer larva in rhizome.

emerging out of the older leaf folds. If you detect a slightly irregular brown trail running downward where the leaf fold meets, you are likely seeing the larval feeding. I simply use my thumb and forefinger to squeeze the leaf tissues down this

trail. In the upper area, the tissues should feel soft as there is a space between your fingers. Soon you will feel a “lump” in the leaf tissues! Get this lump between your fingers and squeeze a bit harder. It should pop! If so, you have just killed the larvae!

If you aren’t into inspecting and “stroking” all your iris plants, and you have had problems with this pest in your iris in the past, there are other treatments! We used to recommend Di-syston granules, but these are no longer available. My current recommendation is to consider TriStar (contains acetamiprid, a neonicotinoid with minimal impact on pollinators). Once your iris plants have finished bloom, you should be free to make the treatment. You can purchase granules (which should get the insecticide into the rhizomes very well), or water soluble granules. The sprays are a bit more difficult to make as sprays don’t normally stick to the waxy iris leaves unless you also use a spreader/sticker. Even if you don’t use a spreader/sticker, the spray will run down to the rhizomes and be absorbed there!

Japanese Beetles and Masked Chafers Fly!

I was a bit taken back a couple of weeks ago when I had just sent out the last *P.E.S.T.*! I noticed an adult Japanese beetle on the leaf of a linden tree! While this was a bit early, I remember two years ago finding my first adult JB in late May! In spite of these early emergers, the bulk of Japanese beetle adults will be emerging over the next three weeks. I have also noticed that there is a noticeable proportion of the Japanese beetle population that doesn’t emerge until July and August! These adults can persist until September.



Though I make note of the early and late beetle activity, the bulk of the beetles are on their normal schedule. They will be feeding on ornamental plants and laying eggs from now

until mid-July. Remember that the eggs generally take about 20 days to hatch and this will be the time that the little grubs begin munching at the soil-thatch interface.

Last summer, I was a bit surprised at the number of Japanese beetles I saw in the local rose garden. They had

been virtually absent in any numbers for nearly a decade. It will be interesting to see if they continue with their population growth or they get knocked back again.

Because of the lack of Japanese beetles being seen, many folks figured that there wouldn't be many grubs in the turf. How wrong! On the other side, we have been capturing a steadily increasing number of masked chafers in our light traps. In fact, last summer, there were numerous nights when we captured more than 500 beetles in a single night! To make things more interesting, my Columbus-based trap used to only get northern masked chafers, but last year nearly a third of the beetles were southern masked chafers!

In short, we are entering this summer with a moderate (and likely increasing) Japanese beetle population and a masked chafer population that was off the scale last summer! What does this mean? Well, if we have normal or slightly above normal rainfall for the rest of June through July, the potential for damaging grub populations will continue to be on the high side this season!

I mention this because now is the time to apply the least expensive of the grub control products – imidacloprid, thiamethoxam and clothianidin. All of these insecticides have effective residuals that will kill the new crop of grubs that will show up in the turf in late July into mid-August. Products containing chlorantraniliprole (Acelepryn) can also be applied until the end of July with expectations of excellent control. Acelepryn can actually be applied between April and early August!

Billbug Damage Showing Up!

Now is the time that billbug larvae have burrowed down the seed-head stems to grass crowns. When we have normal or slightly above normal rainfall at this time, their damage generally goes unnoticed. This is because the new tillers that were formed by a "parent plant" can establish roots and survive even though their parent was destroyed by a billbug larva. When we have drought in mid-June, the tillers can't establish roots and when the parent plant is killed, so are the tillers. This results in extensive turf death, but since it is dry, many folks figure that the plants have



Frass-filled stems are an indication that billbug larvae are or were present!

simply gone into dormancy. Unfortunately, the turf won't recover in the fall!

I mention this now because we are seeing two generations of bluegrass billbugs over the last several years. When we have moist soil in June, the damage isn't detected, but the second generation can severely damage the turf during August heat and drought. The remedy? Check now for signs of billbug activity. Pull on some of the brown stems and see if they break off easily and they are filled with sawdust-like frass. If so, the grub treatments mentioned above will also take out the next generation of billbugs! In short, this would be a preventive treatment to eliminate the possibility of a second generation!

Spruce Bud Scale Crawlers Releases!

This scale is continuing to spread across Ohio. Its favorite tree seems to be Norway spruce, though it can attack all spruce species. It is a soft scale that settles under the loose plant scales that surround buds. It is most noticeable in May and early June when the adults swell up and produced a lot of honeydew and eggs.



The crawlers of this scale are emerging now to seek out new hiding places. These crawlers feed only briefly in the summer, so systemic treatments now should help take out the settled crawlers. If you wait until late July, the crawlers may not be feeding and nothing will take them out.

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