

PEST EVALUATION AND SUPPRESSION TECHNIQUES

P.E.S.T. NEWSLETTER

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Comments

Another rare occurrence! This is the third *P.E.S.T.* in the same month! But, like the ole blue moon, I'll keep the format as white on black, not blue!!

Well, I didn't discuss it in my last newsletter as I was so excited that we had ANY hint of spring! As can be expected when we have some early warm weather, cold fronts will follow! From what I'm hearing from most of my colleagues across Ohio, the frost events last week turned the saucer magnolia flowers into brown mush and quite a few foragers bemoaned that asparagus shoots were turned to green mush.

Overall, most of the other spring-flowering trees made it through the frost events. In the BugDoc landscape, the peach tree was blooming, but the fruit buds don't look like they were adversely affected. Looks like the dang stink bugs will have something to suck on again this year...unless we get a really hard frost over the next couple of weeks!

Most experienced gardeners know that they can get in their hardy veggies (peas, carrots, cabbage, etc.) but it's too early for the more tender plants, especially tomatoes, squash, beans, etc. It's perfectly okay to grow those tomatoes and squash plants inside, but don't even think about putting them out until mid-May!

We'll keep the password as: **bloom**

The BugDoc (Dave Shetlar)

What Was That?

Now It's Ground Bee Time!

In the last newsletter, I discussed the carpenter bees that had started their antics around their nesting sites. During the cold days, the females hang out in their burrows, or they may actively clean out an old burrow, expand one or begin chewing out a new one.

Recently, the ground-nesting bees began their spring activity. Entomologists really like watching these critters but the average home owner can freak out if they discover that a group of the bees have set up a new colony somewhere in the yard!

These bees are true bees (having hairy hairs that attract pollen grains), but they are considered to be solitary. That is, each female builds her own burrow. Though technically solitary, they often live in groups of several to hundreds!

I figure that most people miss the couple of female bees that dig burrows in favored areas, usually ground that is sparsely covered and has direct sunlight, at least for part of the day. If these original founders are successful, each may produce a half dozen new bees by the next spring. If each of these is successful in provisioning a burrow, soon you have a noticeable colony!



Andrenid bee female warming herself at the opening of her burrow!

Solitary bee females are non-aggressive when compared to their social cousins, the honey bees and social wasps. While each female has a stinger, she knows that using the sting is likely to end with her being crushed or otherwise injured. Thus, they will only sting if you try to pick them up.

Like the carpenter bees discussed previously, the males are aggressive defenders of nesting territory and they are constantly on the prowl for a chance to mate with one of the females. The males zip back and forth, grapple with other males and try to wrestle females to the ground for mating. To the uneducated eye, this looks like pretty aggressive behavior (and it is, if you are a bee), but the males have no stingers and they remain uninterested in things larger than another bee!

Ground-nesting bees are great pollinators and the females collect pollen and nectar like the honey bees. They provision cells in the soil with these foods, and lay an egg in each completed chamber. After a chamber is completed, the female seals it and constructs another.

The mating frenzy is usually finished in two to three weeks, at which time, the females tend to be less noticed. They often continue provisioning their

burrows for four to eight weeks before expiring. The larvae mature and pupate, but don't emerge until the following spring.

I'm really reluctant to suggest using pesticides to control these valuable bees! However, there are several bee and wasp sprays that are available. The trouble with these is that the residual action is very short, so you have to stand among the colony trying to actually hit the bees with the spray. There are some dusts (like DeltaDust) that are more effective, but you still have to dust every burrow opening.

Frankly, you can discourage these bees by thickening your lawn. Use a little fertilizer and raise the mowing height to three inches! If the area has a really thin turf cover, try reseeding to improve the stand!

Rose Leafhoppers Hatch!

While looking around my landscape last week, I noticed that my climbing rose bush had little rows of white spots along the major veins. I normally have associated this with the rose leafhopper, but it seemed terribly early!

When I lifted some of the affected leaves, I was just barely able to see tiny yellow-green insects. With my hand lens, they were, indeed, first and second instar nymphs of the leafhoppers! I suspect that I've simply missed these in the past, but it was pretty amazing at how much damage these tiny nymphs could produce!

Most rose enthusiasts have already treated their roses with imidacloprid or dinotefuran for control of the rose midge. Such treatments would also knock out the leafhoppers. Before you shudder in horror, thinking that such treatments will affect honey bees, remember that honey bees don't normally visit the hybrid roses.



Early instar rose leafhopper nymph.

However, some single roses (ones with a single whorl of petals) are attractive to various bees. Fortunately, these appear to be less susceptible to attacks by the rose midge. So, what should be done to control the leafhoppers and not affect pollinators? My recommendation is to use insecticidal soap or 2% horticultural oil. Both of these materials will easily kill the tiny leafhopper nymphs, but the problem is hitting them! The nymphs like to hang out adjacent to a major vein on leaf undersurfaces. So, sprays have to be directed upward, not downward!

In the BugDoc landscape, the yellow to white speckles on the leaves are a mere annoyance and they don't seem to inhibit bloom of my roses.

Tiny Sawflies Found!

As predicted, the European pine sawflies hatched over most of Ohio over the last two weeks. These pests are most noticeable on Mugho pines, but they will feed on most of

the "hard" pine species (Scotch, Red, Austrian). We saw several colonies on a dragon's-eye pine last week (a black pine cultivar).



Tiny first instar sawflies on pine needles.

My students seem a bit amused at how quickly I was able to dispatch colonies by knocking them off the needles and crushing them under foot! Of course, they also snickered when I showed them the sticky goo that covered the bottom of my shoe!

As mentioned in the last *P.E.S.T.*, small sawfly larvae are easy to control with soaps and oils, as well as any of the numerous pyrethroids available in over-the-counter sprays. Products containing neonics are also effective, especially if sprayed. Drenches take a few days to reach effective levels in the pine needles, but this can be a better option if dealing with large trees.

Tent Cats and Gypsy Moths Hatch!

The phenology calendar had predicted that the eastern tent caterpillars should have hatched, but it took a sharp-eyed student to find the tiny colonies two weeks ago! The first two colonies found had actually set up their base tent in a cluster of leaves with flower buds on a crabapple! A little further down our path, I finally spotted a "classic" little nest that had been formed in the crotch of a branch.

Last week, the colonies on the tips of branches had also moved deeper into the trees to form more normal tents. The morning I observed them, it was pretty cool and the larvae were simply sunning themselves on the east side of their nest. During cool and rainy weather the larvae will remain within the protection of their nests, but if the sun is out, they may try to warm themselves sufficiently to creep out to the expanding foliage.

I remember reading about the eastern tent caterpillar in one of the older classics. The author talked about differences in behavior between the colonies. Colonies that had a few active larvae (we would probably label them as having OCD today!), survived periods of cool and rainy weather better than colonies that had only sluggish larvae! Apparently, the active larvae irritated the entire colony so that they would move around, warm up and get to food quicker than the sluggish colonies. Interesting survival strategy!

Again, I demonstrated how easy it was to prune out small colonies and dispose of them as well as simply rolling up the nests that were located deeper in the trees.

We also found a gypsy moth egg mass, but no larvae were present two weeks ago. I looked again a week later and the tiny larvae were resting on top of the egg mass remains...just as predicted.

I have to again emphasize that products containing imidacloprid, thiamethoxam and clothianidin are NOT good for controlling caterpillars on trees. Already, this

spring I've had several landscape managers inquiring about control of various caterpillars on trees and shrubs with the comment, "and my imidacloprid drenches should control them, right?" NO!



As a reminder, in my first newsletter of the season, the only two neonics that seem to have good caterpillar activity are Tristar (acetamiprid) and Safari (dinotefuran). And, I'm really nervous about recommending the use of these on flowering trees and shrubs BEFORE blooming! In a recent report, acetamiprid was rated as the least toxic of the neonics to honey bees. My other recommendation was to use Lepitec (a formulation of acephate/Orthene) that can be soil injected for caterpillar control.

Clover Mites and Winter Grain Mites!

Last week, while inspecting the young foliage of several of my perennials, I noticed that one of the columbines next to my foundation had some strange white patterns on the leaves. When I looked closer, I saw what appeared to be a red-orange critter! With my hand lens, I was startled to see that I was looking at clover mite damage! Upon looking around some more, the same feeding damage was on several other plants, including the turf. And, being late in the day, the mites were out and actively feeding.



Clover mite on grass blade.

It then dawned on me that there were also some winter grain mites on the leaves of my tall fescue! I've noticed this in the past. What is wrong with these mites being on tall fescue? I specifically planted tall fescue in my lawn because it contains endophytes that produce toxins that normally control things like chinch bugs, sod webworms and billbugs! Apparently, the winter grain mites are unaffected by these toxins. The other possibility, now that we have more research on the biology of the endophytic fungi, is that they are not producing all the toxins during this cool time of the season!

In any case, the mites were doing fine and their feeding damage was causing some white blanching of the leaf surfaces. Nothing that I would get concerned about!

I mention these two mites because of their nuisance factor. The clover mites have a nasty habit of leaving their host plants when it is time to molt or lay eggs. They can cluster on the walls of basements by the thousands! The obvious solution is to check for any opening around basement windows that would let these mites in! In our school IPM program, we recommend "sealant" not painters caulk. Sealant usually have a higher silicone content, seals cracks and crevices better and stays flexible much longer!

If the building can't be sealed, then an application of bifenthrin to the turf (say six to 10 feet out from the building) can greatly lower the clover mite populations.

Both clover mites and winter grain mites are considered to be "cool-season" mites. They do best when the daily temperatures are just above freezing at night and don't exceed 70°F during the day. Once the daytime temperatures regularly get into the 80s°F, the adult mites die off and only eggs remain during the summer. These don't hatch until cool weather returns in the fall.

Columbine Leafminer Adults Out!!

While admiring the clover mite damage on my columbine flowers, it suddenly dawned on me that several of the leaves had rows of tiny pinholes, the tell-tale sign of columbine leafminer adult feeding!

It didn't take me long to spot the culprit, a small fly, about the size of a common fruit fly, that is a dull gray color with bright yellow markings. This form is typical of what entomologists call the agromyzid fly leafminers. Most of important fly leafminers are common greenhouse and vegetable pests, but a few can also be found attacking landscape plants. Of those, the various holly leafminers are probably the best known (especially holly and inkberry leafminers).



I love to talk about the biology of these leafminers with my students. Being flies, the adults have typical sponging-lapping mouthparts. So, one would assume that they likely eat nectar. The problem with this is that the adult

flies are usually active before or after their host plants bloom! So, how do they get food? The females use their pointed, hard-tipped ovipositors to poke holes in the leaves of their host plants! They jab this in and wiggle it about to grind up the leaf tissues. They then pull out the ovipositor, twirl around and lap up the leaf goo! The resulting damage spot is called a pinhole because the feeding punctures look like someone took a thick straight pin and poked the leaf surface.

So, what do the males eat? Without an ovipositor, the males simply don't live very long. Or they have to follow a female around and feed on what she leaves behind!

Columbine leafminer larvae make winding trails in the leaves and these can be pretty evident by the time that the plants enter full bloom. Instead of having nice clusters of flowers backed by rosettes of green leaves, the leaves have all these white trails in them!

I've grown columbines for decades and the leafminers don't seem to cause any long-term damage, but they can be distracting. Even after extensive activity, my plants come back and bloom every spring. With that said, I'll have to confess that I have treated some plants with imidacloprid as a soil drench, applied when the plants first emerge in the spring. This was effective in keeping the leafminers away,

at least for the first half of the season. What about pollinators? I grow the fancy double flowered cultivars and I don't see many bees or flies on them during flowering. However, when I observe the single-flower, wild types, there are several bumble bees that seem to work the flowers.

Elm Pests Active!

This last week, the two major elm pests were spotted – the elm fleaweevils and elm leafminer adults.

In this case, both of these pests arrive after elms have bloomed, so I'm not overly worried about using some of our systemic insecticides!

The elm fleaweevil is a tiny brown weevil (beetle with a snout) that overwinters as adults, apparently in leaf litter. This pest is a relatively recently recognized foreign invader. It seems to have snuck into North America without much notice until a few years ago. Why? The larvae make a blotch mine in elm leaves at the same time that the elm leafminer makes blotch mines in leaves! And, the adults skeletonize the leaves and this damage looks like the elm leaf beetle activity. In short, the larval damage and adult damage was easy to assume to be something else!



After observing the fleaweevil and leafminer for several seasons, there are distinctive differences between the larval mines! The fleaweevil mines the tip-ends of leaves, just like the fleaweevil that attacks hornbeam. The leafminer mines (made by a sawfly that is closely related to the birch and hawthorn leafminers) usually start along the leaf midveins and expand in rectangular shaped mines. In short, the fleaweevil mines are mainly along the leaf edge while the true leafminer mines are in the middle of the leaves.

The true leafminer adults appear as tiny black wasp-like insects. The females creep about on the leaf surface and periodically, they press the tips of their abdomens to the leaf surface. This is the act of inserting

eggs into the leaf tissues.

Without a doubt, the fleaweevil is the most damaging of the two pests! This is because the new adult fleaweevils skeletonize the elm leaves for a long period during the summer. Their feeding can completely turn trees brown in July and August. They are especially fond of the new hybrid elms and elms that have Siberian elm ancestry.

Because of this, I'm no longer emphasizing trying to control the larvae of either pest. You would probably be better served by applying a systemic insecticide (all the neonics appear to be effective) in mid-June in order to have residues in the leaves when the adult weevils begin their maturation feeding.

Crystal Ball

Time to Sample Spruce Spider Mites!

The spruce spider mites have begun their spring feeding activity across much of Ohio. However, I'm still a proponent of sampling before you treat! It's really easy! All you need is a paper tablet (I actually use a 10-inch square of white foam board) and a stick! Hold the tablet under a branch that has some evidence of spruce spider mite feeding (tiny yellow speckles on the needles). Strike the branch sharply with the stick (I use an 18-inch length of an old broom handle) three times.

The paper tablet should have quite a few needles and other debris on it after striking the branch. Count slowly to 10 (that old, thousand-one, thousand-two, etc.) then tilt the tablet to a vertical position. This will let any loose debris slide to the ground. Inspect the surface of the tablet to see if you find any tiny dots moving about. These might be the mites! If you see dark spots, use your finger to squash one in a streaking motion. If you see a dark olive-green streak, you have just crushed a spruce spider mite! If there is no streak, the critter was probably a seed mite (a harmless fungal feeder). If the color is yellow or orange, the mite was likely a predatory mite! If you find 15 to 20 spruce spider mites on a sample, the tree should be treated. For spruce spider mites, all the registered miticides seem to work well: Avid, Sanmite, Florimite, Hexagon, Forbid, etc.

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