

The Cuttings Edge

Horticulture Notes

with contributions by Marshall Horsman and Matthew Shultz

March 2013

The IPM Forecast Issue

Each spring Marshall and I like to use one of our monthly newsletters to do an IPM forecast for the upcoming year. As you will hear later in Marshall's section, spring has come early to the southeastern US so we thought February would be a great month for our 2013 IPM Forecast edition. Here it goes!

Northern Forecast

By Matthew Shultz

Perhaps the most far-reaching insect problem facing the container nursery grower in the eastern US is the Red Headed Flea Beetle, though some operations don't even know they have an active population. This insect pest is about 1/4-1/2 " in length and is shiny black in color. On closer inspection the reddish maroon head of the insect can be seen, hence its name. Adult beetles move very quickly when disturbed and can hop very long distances. Adult beetles can also be picked up and carried very long distances on strong wind currents.

Larvae or grubs of this insect can usually be found in nursery pots and the soil and debris of the surrounding areas. Larvae seem to need moist soils to thrive, making the irrigated pot an ideal breeding ground for the pest. Before pupating, the larvae will feed on the roots of the host plants but usually won't cause **significant** damage to the plant.



Photo of a Red Headed Flea Beetle Larvae, not the hook or finger like appendage protruding from the rear.

When scouting for the larvae the root ball should be lifted from the pot and the soil should be inspected for the presence of the milky white or tan larvae. Larvae of this type



of beetle have a hook like appendage that extends off the last body segment.

Once a larvae population is confirmed, research conducted at the University of Delaware by Dr. Brian Kunkel suggests that early morning or late evening applications of beneficial nematodes, specifically species *Steinernema carpocapsae* have provided some control of the larvae. Once the larvae have had their fill they will soon pupate and emerge as adult flea beetles. These adults are what cause the most headaches for growers.



Adult Red Headed Flea Beetle – photo by Matthew Shultz

The beetle will feed or at least taste test many different species of plants common to the nursery trade, including Itea, Hibiscus, Echinacea, Rudbeckia, Sedum, Heuchera, Hydrangeas, Weiglea and even the occasional Azalea. Adults will typically feed early in the morning or later in the evening during hot

summer months, which is probably why they go unnoticed. On some plant species the adult will eat all the way through the leaf like the Hydrangea pictured above. In other plant species like Heuchera and Sedum the beetle will only feed on the upper leaf surface, leaving a corky dried leafspot. This leafspot can be mistaken for a bacterial or fungal disease if not closely inspected.



*Feeding on Heuchera by adult flea beetles, notice only the upper leaf surface is removed.
Photo by Matthew Shultz*

Flagship systemic insecticide gives the best control options when foliar applied to control the adult beetles. Orthene and Carbaryl also provide some good knock down control. I strongly believe that in order for nurseries to effectively control this pest a multi-tiered IPM must be taken. Growers should consider applying beneficial nematodes to their pots early in the spring where they know they have overwintering populations of grubs. Scout early and scout often.

In most regions the first larvae hatch when the Black Locust is in bloom in your area and



adults emerge around the flower break of *Magnolia grandiflora*. Applications of Flagship should be applied to susceptible crops 2-3 times in the weeks leading up to the *Magnolia* flowering. This will ensure that adequate amounts of active ingredient are built up in the plant tissue, thereby making the adult beetle's first meal its last.

If adults persist for a couple of days, a knockdown product should be tank mixed with Flagship to provide contact kill. Never apply insecticides to plants that are blooming to protect your native bee population! Little is known about this pest, and I would hate to think what would happen if it got established in the landscape, if it hasn't already, so be vigilant.

Often the pest goes unnoticed in the spring until it is too late so stay ahead of this insect! Harrell's is committed to finding solutions to this pest; if you need more information please visit the Horticulture page of our web site where you will find a webinar focusing on this pest given by Dr. Brian Kunkel. The video is under the Education tab.

Another group of insects that is sure to give growers headaches in 2013 is scale insects. In my many meetings with growers in 2012 scale insects often came up as a topic of great concern. Some operations are combating these insects head-on while other operations use a threshold system to decide if plants are shippable or not

I am not here to judge which system is right but I will say this, you will reap what you sow. Healthy pest-free plants will often generate a repeat customer and will keep the landscape safe from exotic and invasive species; subpar plant material might have an opposite effect. Operations that grow superior pest-free plants

always first inspect their incoming plant stock. Often a quarantine area will be set up somewhere onsite so incoming plant material can be monitored and scouted for 30 days before it is integrated into the rest of the production area.

During this period plant material should be closely inspected on a routine basis, including the roots and especially the trunks and branches when looking for scales. Superior plant growers also know how to get the most bang for their buck when it comes to their pesticide application; they often kill 2 or even 3 birds with one stone. There are armored scales and soft scales, some insecticides only control one or the other, not both. Growers that use products like Flagship which controls both soft and armored scale get the most out of one application, and if you're fighting the flea beetle I just discussed well then you're getting three pests for the price of one!

Flagship comes in both a sprayable and granular formulation. When combating scale I recommend a granular application to coat the entire plant. Other systemic control options include Safari and the old stand-by Imidacloprid. Another control measure would be to monitor when the crawler or active stage of the scale is out and moving around. Contact insecticide such as acephate or carbaryl work well at knocking down crawlers but they must be actively moving. This usually only occurs for about 2 weeks each year per generation. Your local extension agency should have information about emergence timings, I encourage you to contact them.





Armored Scale Colony – Photo by Matthew Shultz



Soft Scale – Photo by Matthew Shultz

Early season aphids will be out before long, I have already gotten a few calls about them in the southern states. If you are growing undercover and can't spray I encourage you to investigate using biological controls agents. Parasitic wasps and lacewing larvae can be released to control aphids until a spray can be applied. Use compatible low impact pesticides like Flagship, Safari, and Endeavor to help your beneficials live alongside your pesticide applications.



Early season aphids on Rose leaflet – Photo by Matthew Shultz

As far as diseases go, Boxwood Blight still seems to be a topic of great concern, especially in the northeast and mid-Atlantic states. Good sanitation and sound cultural practices like avoiding excessive overhead watering still seem to pay huge dividends in controlling this disease. Buxus and Pachysandra growers should also quarantine and inspect all incoming plant stock for 30 days to monitor for the disease. It is also a good practice to send a couple samples of all incoming stock off to your local diagnostics lab for analysis. You can never be too safe or over-protective of your plants, and be sure to hold your distributors accountable - if you don't know one well, the end consumer will end up paying the price. Many associations and organizations like CNLA are continuing to research and report on this pathogen, so stayed connected into them.

The same can be said when dealing with Downy Mildew on Impatiens. This fairly new disease is also being researched and reported on every 2-3 months it seems. Trade magazines, extension agency publications and conferences help; I plan on attending 3 conferences this spring at the local community college sponsored by the U of MD extension



service. It's always a good way to get the latest information on control options. Landscapers and homeowners are also being encouraged to plant something other than Impatiens this year to help alleviate some of the pathogen reservoir that has built up in some regions.

Most growers seem very optimistic for 2013, as the cloud seems to have been lifted. Only time will tell what is in store for the industry this year but if the first two months is a sign of things to come, we should be just fine. I am sure that growers in the northeast who suffered losses in the recent storms are scratching their head reading this right now, but I encourage you to keep your head up and remember that this year will be what you make it. Harrells stands committed to serving you in any capacity we can, so don't hesitate to ask. Our thoughts and prayers are with you!

Southern Forecast

by Marshall Horsman

Just when you thought it was safe to go back in the water, I may have to counter that thought with "not so fast". It is never a good idea for complacency when scouting or controlling pests in the Florida landscape or nursery setting, as something new seems to be just around the corner.

This month's newsletter is being written by Matt Shultz and I to specifically cover some new pests found in our areas. I need not look further than Florida to come up with good material. Not a week passes where I fail to get a call about the Rugose Spiralling Whitefly. This above-average size whitefly has a large host of plants it likes, from Gumbo Limbo trees

to coconuts on to shrubs and other palm species. It is relentless.



Whitefly egg mass – Photo by Matthew Shultz

Nurseries, which have more control through regular sprayings of insecticides, are less vulnerable unless it is a field palm nursery - then forget about it. The tell-tale sign of this spiraling white fly is the spiral of eggs and nymphs it leaves on the undersides of palm fronds and plant leaves. Thought to have come up from Central America, this pest has moved up the east and west coast of Florida. The sooty mold, a byproduct of the whitefly infestation, is beyond intense. If you live in south or central Florida you have seen this pest.

The neonicotinoids like Merit or Meridian granular are commonly used for control in the landscape. Some pest control companies are using Arborjets to inject liquid Tristar into tall palms or larger trees, gumbo limbo trees in particular. Usually when we get a wave of new insect pests in Florida, we hope for a natural predator to come in and sequester populations. This has yet to occur.

Many of our Homestead commercial nurseries grow Mandevilla for a spring color crop. Mandevillas are prone to thrips, mites, white fly, mealy bug, aphids, Cercospora leafspot and Fusarium blight.





Aphids – Photo by Matthew Shultz

Did I leave anything out? Yes! If Mandevillas did not have enough pest issues, along rolls Southern Wilt, a bacterial pathogen that shuts down the stem vascular system. A very virulent bacteria form of *Ralstonia* is showing up in several Homestead nurseries, as well as in other states. Due to the enormous quantity of Mandevilla being grown in South Florida, this could be potentially devastating.

Controls now are sanitation and more sanitation, along with rogueing out plants showing symptoms and keeping ground cloth disinfected. Whether systemic coppers like Phyton 27 help, is unsure. Symptoms are pretty easy to interpret - basically green, wilted leaves will shatter or fall off the vine, leaving it bare. This is unlike *Fusarium*, which turns the plant completely brown. Certainly if you broker plants, keep the severity of this pathogen in mind on your own crops.

Spathiphyllum plants are widely grown in Florida greenhouses and shade houses as interior foliage plants. They rarely get insect pests and most issues have been nutritional, until now. The purple tea mite is popping up and causing a strange purpling and blotching on Spath leaves. Nurseries typically do not know it until it really gets out of hand. The mite is an eriophid mite and difficult to see with the naked eye. The damage however is

quite bad and can be seen from 100 yards away.



Spathiphyllum

It is easy to see why growers initially see that they might have a deficiency of say phosphorous; nope, it's probably mite damage. It is also hard to find mites as they are rinsed off foliage with overhead irrigation. The abamectin type miticides like Avid or Ardent are pretty effective at control.

As new pests always come up, we will keep you posted intermittently through the year in our newsletter. Spring has sprung early, so time to scout more and fine tune your IPM programs.

