Aphids (*Neophyllaphis podocarpi* and *N. varicolor*) on *Podocarpus macrophyllus*

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Aphids

Aphids are pest insects that often feed on many different types of plants. These pests not only cause direct damage to plants but sometimes are associated with virus or other disease transmission. Aphids are small, soft-bodied insects that are typically pear-shaped with tube-like structures, called cornicles, at the end of their bodies. Like other Hemipteran pests, aphids possess a piercing-sucking mouthpart which they use to suck plant sap from plant tissue. Feeding can cause plant stunting and withering of foliage and a general loss of plant vigor. Some Hemipteran pests, like aphids, excrete a sugary substance called honeydew which can become problematic when excessive. Honeydew provides an excellent substrate for the growth of a black fungus known as "sooty mold". Sooty mold can potentially block light from leaves and ultimately affect plant health.

Aphids are very interesting insects because most aphids are female and reproduce without mating and most aphids lay live young instead of eggs. As a result, aphids reproduce very quickly and ultimately become a rapid pest problem. Aphids are wingless but under crowded conditions will produce the next generation with wings which can fly away to new plants for feeding. Although most aphids have a similar appearance as described above, they can be many different colors (green, black, brown, pink, yellow, etc.) and may have other unique structures on their bodies.

Neophyllaphis podocarpi

One interesting aphid found on *Podocarpus macrophyllus*, a common hedge grown throughout Florida, is *Neophyllaphis podocarpi* which can have a bluish-purplish color, making them very distinct. This aphid, commonly called Podocarpus aphid, was first discovered in Miami Florida in 1968. Since then it has been found wherever Podocarpus is grown in the state. In fact Podocarpus in your yard probably have some degree of Podocarpus aphids. These aphids feed on all species of Podocarpus and can cause stunting and curling of the new terminal growth. They are considered an occasional pest but if the populations are high there is a greater potential for unacceptable damage. Otherwise, management of Podocarpus aphids is not difficult and is often not necessary.

Neophyllaphis varicolor

Generally, whenever you see aphids, particularly bluish in color, on Podocarpus, you know they were *N. podocarpi*. However, in September 2010, FDACS/DPI inspector S.D. Krueger found aphids on Podocarpus in Collier County that were unlike *N. podocarpi*. These new aphids were yellow, orange, red and purple (*varicolor*), more mobile, not as rotund and not as gregarious as the dusty blue to purple *N. podocarpi*.

It is not yet known if *N. varicolor* will change the landscape situation of Podocarpus. For example, will this new species cause different or more damage to Podocarpus? In one Fort Lauderdale example, aphids were collected from leaves and stems from Podocarpus in February 2014. In September 2014 subtle change of symptoms of the new leaves were noticed on the same plants and they were again sampled. The aphids collected in February were identified as *N. podocarpi* and those collected in September were identified as *N. varicolor*. It appears that within seven months, the recently discovered *N. varicolor* may have displaced the 1960's found species at this particular site. However, more investigation is necessary.

Aphid Management

Management of aphids is sometimes difficult when aphid populations become very high. This can result in severe and unacceptable plant damage. However, aphids are often heavily preyed upon or parasitized by natural enemies and many times management is not required. It is not uncommon for aphid populations to decline sharply before extensive plant damage occurs due primarily to attacks by natural enemies. This is particularly true in the landscape. If possible, delay pesticide application until damage continues to worsen indicating it may reach an unacceptable level. This will give natural enemies a chance to control aphid populations.

Oils and Soaps:

Even a forceful spray of water can help to control aphid populations at lower levels. Beyond that, consider using environmentally-friendly products such as insecticidal oils and soaps. When using these types of products, good coverage is essential. Usually about three applications 7 to 10 days apart can provide control. Be careful about timing, because soaps and oils can be damaging to certain types of plants particularly under warmer conditions. Soap and oil products are not used for long-term control and usually do not kill all the aphids.

Contact Insecticides:

If the problem persist, use a contact insecticide, other than soaps and oils, to get quick knockdown. Contact insecticides include pyrethroids such as bifenthrin, cyfluthrin, and permethrin. Re-application is often required usually after three to six weeks depending on the product and the level of infestation.

Systemic Neonicotinoids:

Using a systemic insecticide such as a neonicotinoid which includes imidaclopird and dinotefuran can provide long term control when applied to the soil immediately around the plants or to their stems or trunks. Insecticides should only be used when necessary and you are required to follow label directions.

N. podocarpi

N. podocarpi adults and nymphs

N. podocarpi adults and nymphs

Terminal leaf loss.

Stunted terminal growth.

Stunted new growths and sooty mold accumulation.

N. varicolor

N. varicolor adults and nymphs

N. varicolor adults and nymphs

Maximum growth of new leaves affected by *N. varicolor.*

Stunted and distorted new growth.

Stunted new growths aphid accumulation.

Stunted and discolored leaves affected by *N. varicolor* will not increase in size.

Normal leaves not affected by aphids will continue to increase in size and become dark green.

References

Miller, G.L. and S. E. Halbert. 2014. A New Species of Neophyllaphis (Hemiptera: Aphididae: Neophyllaphidinae) with Keys to Species on *Podocarpus* (Pinales: Podocarpaceae). Proceeding Entomology Society, Volume 116, Number 1. Washington

Popenoe, J. 2008. Southern Yew: *Podocarpus mcarophyllus*. Lake County Extension, Tavares, Florida

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All pictures were taken by Stephen H. Brown except where indicated. Click here to get to his webpage.

This fact sheet was reviewed by Scott Krueger, FDACS Division of Plant Industry, Plant Inspection, Naples, Florida.

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