e-GRO Alert

Dan Gilrein
dog1@cornell.edu

Volume 10 Number 5 February 2021

Aphids in Unexpected Places

Over the years trivia tends to accumulate, including in the Diagnostic Lab, and for the benefit of posterity the internet offers one possible repository for possibly useful material not necessarily destined for library archives. Over the past year I had some interesting samples of and questions about aphids, so as winter transitions to spring I'll use the opportunity to review some of the less common species we've encountered in greenhouses over the years while issuing the standard reminder to watch for early signs and respond while infestations are still small in size and area. Focus most attention on older plants, area with weeds beneath benches (where aphids may persist) and vegetatively propagated material.

Recognizing the aphid species present can be important for determining the correct biocontrols to use, to help understand why biocontrols released aren't working well, and to detect the presence of a potentially damaging pest new to the area. At least one insecticide (Sarisa) is labeled only for one particular species (melon aphid) and we've found some aphids can be less susceptible to certain insecticides or have a reputation for tolerance, which some learned the hard way after finding treated calibrachoa hanging baskets with unexpected infestions. The most common aphid species we see in greenhouses include green peach (*Myzus persicae*), melon (*Aphis gossypii*), foxglove (*Aulacorthum solani*) and potato aphids (*Macrosiphum euphorbiae*) and it's not too hard to distinguish these. One website with some excellent photos and information is https://influentialpoints.com/Gallery/Aphid_genera.htm. Although more Europe-focused, the site includes these and other species and information relevant to North American readers. Searching the internet with the species' Latin names will also turn up additional helpful information and images.

Many aphids have distinctive colors, markings, and host associations all of which can all be helpful in identification. If you need to have aphids identified, try to snap some good, clear photos, getting as close to the subject as possible while under good lighting, collect samples of adult aphids (both non-winged and winged variants if possible) into rubbing alcohol and submit all to a diagnostic lab with information on hosts, aphid color in life, any symptoms of plant injury, etc.

Since the common species are often discussed and were the subject of past Alerts, the following is a discussion of a few of the more interesting but less encountered species I have seen over the years. Chances are most won't find these with any regularity, but given the constantly changing spectrum of plants and history of invasive species perhaps this will help raise awareness – and observant growers may actually find species new to the region or the country. Most of these have several to many plant hosts, but some aphids are quite host-specific among which growers may find a candidate for use with 'banker plants' that maintain beneficial insects in the absence of pests without threatening the crop. And to keep things interesting, "new" aphids sometimes hide in plain sight: identical-appearing biotypes of common aphids sometimes exhibit new behaviors or host preferences.

Hellebore aphid (*Macrosiphum hellebori*)

A rather large greenish aphid, possibly from Europe and confined to an unusual host (only 4 aphid species are known associated with *Helleborus*), I encountered this in a Long Island, NY sample in 2020, the second US report. The honeydew on leaves drew attention to the aphids beneath, but otherwise there was no visible impact on the plant.

Macrosiphum subterranean aphids on Shasta daisy

Hellebore aphids

Tulip bulb aphid on iris

Leaf curl plum aphid and injury to chrysanthemum

Crescent-marked lily aphid on lily

Leaf curl plum aphid (*Brachycaudus helichrysi*)

Variously colored pale green, yellow or pinkish, I have seen this species several times on mums and often clustered around or just below buds and terminal growth. It is sometimes associated with leaf discoloration and distortion. The aphids, relatively small as aphids go, are well-camouflaged and cryptically settle where they're not easily observed until damage is apparent and populations very high. Plants in the same family as mums are often hosts, but it will feed on other types of plants as well. Some populations have an overwintering generation on various *Prunus*.

Tulip bulb aphid (*Dysaphis tulipae*)

Some years ago a perennial grower forcing bearded iris rhizomes found very large numbers of this grayish, waxy aphid on leaf fans. That same year we also found them on crocuses being forced. Some aphids, like this one, can live on roots and move onto new growth in spring. Hosts include many spring bulb plants (lilies, crocus, gladiolus, etc.) and a few others (*Musa*, *Strelitzia*, *Arum*). In one trial we found the aphids weren't difficult to control, but their waxy coating and the vertical, waxy foliage made spray coverage a bit challenging.

Macrosiphum subterranea

Several years ago I encountered this unusual species on Shasta daisy, probably its main host, known to be widespread in Europe and found in a few US locations. The aphids are dark reddish-brown (almost black) with gray markings or bands and were mainly under leaves.

Onion aphid (*Neotoxoptera formosana*)

Found on greenhouse garlic chives, the dark reddish-brown aphids feed on Allium bulbs and foliage. While damage was not apparent, the aphids were extremely visible against

the green foliage, causing plants to be rejected for shipment.

Bean aphid (*Aphis fabae*)

I often see this outdoors in summer clustered on upper stems of lambsquarters (weed), but in the greenhouse it's been on nasturtium, spinach, chard, and occasionally other hosts. The dark grayish to almost black aphids sometimes have small, white patches of dusty wax on the back, with pale banding on legs. This species has been difficult to manage with biocontrols. Outdoors, an overwintering stage may be found in spring on young shoots of *Euonymus* causing leaf curling and stunting. There are a number of subspecies with varying host preferences.

Rice root aphid (*Rhopalosiphum rufiabdominale*)

Dark greenish to brownish, this one can be found on roots and on above-ground plant parts, including some grasses and solanaceous (tomato, pepper, e.g.) crops and even in hydroponic culture. It's recently gained notoriety as a pest of hemp, but I have also seen it on greenhouse foliage crops (Dieffenbachia, e.g.) and other plants, often on stems around the soil line.

Crescent-marked lily aphid (*Neomyzus circumflexus*)

A green or yellow-green aphid with distinctive black markings on the back (immature stages lack the dark markings), I have encountered it on lilies where it apparently arrived with the bulbs, following the new growth as it emerged. It is sometimes found in colonies with other species. Despite the very wide host range (begonia, fuchsia, mums, ferns, and over 20 others) it is infrequently encountered.

Root aphids (several species)

Growers sometimes encounter bright white powdery spots on roots of plants, in some cases mistaking these for mealybugs. Several aphid species live in such colonies, producing the white protective wax that helps deter excess moisture. Some we've seen include one on Iberis (possibly cabbage root aphid, *Pemphigus populitransversus*), on *Lysimachia nummularia* (*Thecabius lysimachiae*), beech blight aphid (*Grylloprociphilus imbricator*) on bonsai baldcypress, and on *Sempervivum* (unidentified). Those on *Lysimachia* were observed when powdery white colonies started to form on stems and leaves.

Onion aphid on garlic chives

Cabbage root aphid on Iberis

e-GRO Alert

www.e-gro.org

CONTRIBUTORS

Dr. Nora Catlin
Floriculture Specialist
Cornell Cooperative Extension
Suffolk County
nora.catlin@cornell.edu

Dr. Chris Currey
Assistant Professor of Floriculture
Iowa State University
ccurrey@iastate.edu

Dr. Ryan Dickson
Greenhouse Horticulture and
Controlled-Environment Agriculture
University of Arkansas
rvand@uark.edu

Thomas Ford
Commercial Horticulture Educator
Penn State Extension
tgf2@psu.edu

Dan Gilrein
Entomology Specialist
Cornell Cooperative Extension
Suffolk County
dog1@cornell.edu

Dr. Joyce Latimer
Floriculture Extension & Research
Virginia Tech
jlatime@vt.edu

Heidi Lindberg
Floriculture Extension Educator
Michigan State University
wolleage@anr.msu.edu

Dr. Roberto Lopez
Floriculture Extension & Research
Michigan State University
rglopez@msu.edu

Dr. Neil Mattson
Greenhouse Research & Extension
Cornell University
neil.mattson@cornell.edu

Dr. W. Garrett Owen
Greenhouse Extension & Research
University of Kentucky
wgowen@uky.edu

Dr. Rosa E. Raudales
Greenhouse Extension Specialist
University of Connecticut
rosa.raudales@uconn.edu

Dr. Beth Scheckelhoff
Extension Educator - Greenhouse Systems
The Ohio State University
scheckelhoff.11@osu.edu

Dr. Ariana Torres-Bravo
Horticulture/ Ag. Economics
Purdue University
torres2@purdue.edu

Dr. Brian Whipker
Floriculture Extension & Research
NC State University
bwhipker@ncsu.edu

Dr. Jean Williams-Woodward
Ornamental Extension Plant Pathologist
University of Georgia
jwoodwar@uga.edu

Cooperating Universities

Cornell CALS College of Agriculture and Life Sciences

Cornell Cooperative Extension Suffolk County

Iowa State University

University of Kentucky

PennState Extension

Virginia Tech

Michigan State University

UConn

College of Agricultural & Environmental Sciences University of Georgia

Purdue University

NC State University

The Ohio State University

University of Arkansas Division of Agriculture Research & Extension

In cooperation with our local and state greenhouse organizations

Maumee Valley Growers — Choose the Very Best.

Metro Detroit Flower Growers Association

NC Flower Power

Western Michigan Greenhouse Association

Connecticut Greenhouse Growers Association

Indiana Flower Growers Association

LIFGA

Michigan Greenhouse Growers Council

NYSFI New York State Flower Industries, Inc.

Virginia Flower Growers Association Since 1954