

OKTOBERPEST

Ash Whitefly



Biology and Management in Nurseries

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Handout for the Ash Whitefly Information Session on Oct. 7, 2015 at OSU/NWREC, Aurora, Oregon.

Introduction

The ash whitefly, *Siphoninus phillyreae* (Haliday), was detected in Oregon in 2014. Late summer/fall flights of ash whiteflies have been noticed in both 2014 and 2015 in the Willamette Valley. The whitefly has a wide host range which includes many ornamentals, native plants, and fruit trees. Little is known of how impactful will be this newly detected insect in Oregon but it is not too soon to begin to monitor for the whitefly on both known (see [Nguyen and Hamon, 2000](#); [Bellows et al. 1990](#)) and unreported hosts.

Distribution

Ash whitefly was first detected in California in 1988 and has since been detected in Arizona, Florida (2010), Georgia, Nevada, New Mexico, North Carolina (1993), and South Carolina.

Description

The adults have light yellow bodies which are covered by white wings. Ash whitefly eggs are pale waxy yellow and often surrounded by waxy deposits. Young nymphs are nearly translucent but become more opaque and covered in tufts of white wax. The puparia are covered with tufts of white wax and have tubercles or long tubes formed around the edge of their bodies topped with clear waxy droplets.



Eggs and puparium of ash whitefly



Nymphs and empty puparium of ash whitefly



Puparium and empty puparium of ash whitefly

Biology

The adult female typically lives for about 30-60 days. Female whiteflies lay eggs on the undersides of the leaves on host plants. Nymphs emerge from the eggs and settle onto the leaves where they remain and feed on the plant sap. They then pupate and later emerge as winged adults. There are four juvenile stages of the whitefly between the egg and adult stages. Both the nymph and adult stages can feed. At 77°F the whitefly can develop from egg to adult stage in 25 days (Bellows et al. 1990). The ash whitefly can develop continuously during the year although development slows with cooler temperatures. There can be several generations per year. The whiteflies tend to move from preferred deciduous summer hosts such as ash, pear, and hawthorn to evergreen overwinter hosts. All stages of the whitefly can overwinter on evergreen host plants.

Adult ash whitefly emerging from puparium



Monitoring

The whitefly may be flying right now (October) onto evergreen hosts on which it will overwinter. Shaking or tapping branches over which whitefly are flying is one way to monitor. Another is to slowly turn over a branch, twig, or leaf and examine for whitefly adults and juvenile stages of the whitefly. Various juvenile stages (eggs, nymphs, puparia) of the whitefly on a plant indicates it is able to reproduce on the host plant. These are plants that will be more susceptible to direct damage (curling tips, stunting, defoliation) as well as indirect damage (honeydew and sooty mold) from the whitefly.

Currently there are four host plants on which all life stages have been detected: Oregon ash, ornamental pear, hawthorn, flowering quince. There may be several other plants for which this is the case and this list is likely to expand. While presence of the overwintering adult stage may not directly damage a plant, it might be a shipment contaminant pest and intervention may be required if plant shipments occur while the whitefly is present.



Adult ash whitefly infestation on Oregon ash

Biological Control

Several biological control agents have been released in other states to manage populations of ash whitefly including a parasitic wasp *Encarsia inaron* (= *partenopea*) and a lady beetle, *Clitostethus arcuatus*. The most successful agent limiting the populations of ash whitefly in California was the tiny wasp, *E. inaron*, which was found in emergence rates from ash whitefly nymphs at 80 to 98%. In Florida, *E. inaron* was also found to be effective as a parasite of ash whitefly.



Adult ash whitefly parasite, *Encarsia inaron* Image: Jack Kelly Clark

Chemical Control

Recommendations for ash whitefly management have yet to be developed specifically for Oregon nursery production. To reduce risk of plant shipment contamination, growers should note on which plant hosts they see whiteflies. If present, an insecticide may be required to ship plants free of whitefly. Select insecticides with a quick knockdown and repellency, if possible. For plant hosts at risk for direct or indirect damage on plants that will not be shipped soon, select insecticides with varied modes of action to reduce the risk of resistance. Insect growth regulators, botanical, microbial, oil-based, and systemic products may suppress damaging populations with less impact on natural enemies than broad-spectrum, long residual foliar treatments. Applications for landscape infestations have not been recommended with this insect due to rapid re-infestation in areas with high populations.

If management is required, refer to the nursery section in the [PNW Insect Management Handbook](#) for general whitefly management recommendations. Insecticide efficacy on whitefly information is available the Ornamental IR-4 website, http://ir4.rutgers.edu/Ornamental/SummaryReports/OrnHortProgram_ProjectSheet_WhiteflyEfficacy_2015.pdf

Resources:

- Bellows T, Paine T, Gould J, Bezark L, Ball J, Bentley W, Coviello R, Downer J, Elam P, Flaherty D, Gouveia P, Koehler C, Molinar R, O'Connell N, Perry E, Vogel G. 1992. [Biological control of ash whitefly: a success in progress](#). Cal Ag 46(1):24-28.
- Bellows T, Paine T, Arakawa K, Meisenbacher C, Leddy P, Kabashima J. 1990. [Biological control sought for ash whitefly](#). Cal Ag 44(1):4-6. <5 October 2015>
- Dreistadt, S. and M. Flint. [Ash Whitefly \(Homoptera: Aleyrodidae\) Overwintering and Biological Control by *Encarsia inaron* \(Hymenoptera: Aphelinidae\) in Northern California](#). Env. Ent. Apr 1995, 24 (2) 459-464. <5 October 2015>
- Nguyen, Ru and Avas B. Hamon. 2000. [Featured Creatures: Ash Whitefly](#). Florida Department of Agriculture and Consumer Services. August 2000. (18 September 2015).
- Paine, T., Bellows, T. and M. Hoddle. 2009. [Ash whitefly](#). *Center for Invasive Species Research*. (18 September 2015).

Use pesticides safely!

Wear protective clothing and safety devices as recommended on the label. Bathe or shower after each use.

Read the pesticide label—even if you've used the pesticide before. Follow closely the instructions on the label (and any other directions you have).

Be cautious when you apply pesticides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.