

GROWING KNOWLEDGE

Series content is coordinated by Dr. Jay Pscheidt, professor of botany and plant pathology at Oregon State University in Corvallis, Oregon.



An ongoing series provided by Oregon State University in collaboration with the United States Department of Agriculture and in partnership with the Oregon Association of Nurseries

Know thy enemy

Expert insect pest identification resources are available in Oregon

BY CHRIS HEDSTROM

THE FOUNDATIONS OF a good integrated pest management (IPM) plan are scouting, monitoring and identification — knowing where and when you have pests, and knowing exactly who those pests are.

Scouting and monitoring techniques are straightforward. One can use tools like sticky cards, traps, bait plants, or simply observing plants regularly to find all kinds of critters that might be chewing holes in leaves and sucking the sap out of the stems.

Identifying and knowing exactly what insects have been caught ... well, that can be a lot more difficult. Nonetheless, accurate identification of the pest is critical to knowing the types of IPM strategies to choose.

Not all insects are created equally when it comes to what they like to eat, how much damage they can cause, or even which diseases they can spread across a nursery. Knowing the types of insects and even the exact species can provide insight into behavior, host range, and other characteristics that can be used to create a comprehensive IPM plan.

There are tens of thousands of insect species in Oregon, but only a small percentage are considered pests. But let's be honest: a lot of them look alike, and while there are some common offenders, growers are going to come across others that are totally unfamiliar. They might not have the expertise or the time to guess what these mystery insects might be.

When running into unknown insects, it's best to utilize the resources available in Oregon for accurate insect identification to help make the right pest management decision. The resources listed below are available for insect pest identification services to all nursery professionals in Oregon.



Figure 3: The Oregon State Arthropod Collection estimates they have 9,000 drawers of this type containing some 3,000,000 specimens. PHOTO COURTESY OF OREGON STATE UNIVERSITY

Oregon State University's Insect ID Clinic:
<https://bpp.oregonstate.edu/plant-clinic/insect-id-clinic>

The Insect ID Clinic is housed within the Plant Clinic in the Botany and Plant Pathology Department at Oregon State University (OSU). The clinic provides insect, arachnid, and other invertebrate identification for any members of the public or industry. The Insect ID Clinic is led by expert entomologist Bill Gerth, who has been with the clinic for nine years (Figure 1). He also works with OSU's Department of Fisheries, Wildlife and Conservation Services to identify aquatic invertebrates.

Requests are handled year-round for nursery workers, farmers, homeowners, and the generally curious. Most inquiries come from Oregon, but they also get requests from Washington and

MACHINERY • TRANSPORTATION • GREENHOUSES • TREES • SHRUBS • PERENNIALS • BULBS • GRASSES • FLOWERS • CONIFERS • FRUIT AND NUT • SHADE TREES • STRUCTURE

MEDIA KIT 2022

Advertise your plants, products and services



OREGON
ASSOCIATION OF
NURSERIES™

Connect with the OAN's targeted industry audience

The Oregon Association of Nurseries provides a range of respected publications that are the go-to resources for green industry professionals looking to buy nursery supplies, related services and plant material. From print to digital outlets, the OAN connects you with our targeted audience to help you achieve your sales and marketing goals.

\$1 More than
BILLION
in sales

Oregon's greenhouse and nursery industry earns \$1.2 billion* in annual sales.
*2020, USDA Census of Agriculture

Digger
Magazine

**Nursery
Guide** 

NurseryGuide.com 

**Member
Update**

Visit www.oan.org/ads to get started

California (plus the occasional specimen from Ohio — home of a different “OSU”).

Requests for identification can be submitted in two ways: photos can be uploaded to the clinic through their website, or physical specimens can also be dropped off by appointment at Cordley Hall on the OSU campus in Corvallis.

In the event that the ID needs to be done to a species level or is not a commonly found pest, a physical specimen could be necessary to make the identification. Turnaround times are usually within a few days, but can take up to two weeks for diagnostic identifications, especially during the busy summer season. Generally, there is no fee for most requests, but if many specimens are submitted, or services are needed as part of a project, a fee may be charged. For some of the pests identified, they may also be able to offer management advice.

When submitting a sample, be sure to



Figure 1: Entomologist Bill Gerth examines an insect specimen for OSU's Insect ID Clinic, where members of the public can submit photos or specimens for identification. PHOTO COURTESY OF OREGON STATE UNIVERSITY INSECT CLINIC

follow the packaging tips on their website to make sure the specimens are shipped safely and in the best possible condition for identification. In addition to invertebrates, the OSU Plant Clinic is also available to diagnose plant diseases.

Oregon State Arthropod Collection:
<https://osac.oregonstate.edu/>

The Oregon State Arthropod Collection is the largest collection of insects in the Pacific Northwest, with over three million specimens collected over the last 150 years

from all over the world (Figures 2 and 3). The museum, overseen by Dr. David Maddison (director) and Dr. Chris Marshall (curator), supports entomological research by providing an extensive reference collection to aid with species identification through comparison and maintains a historical record of where and when specimens have been collected. This specimen collection is utilized frequently by the entomologists at OSU's Insect ID Clinic and ODA's IPPM programs (described below), in addition to researchers worldwide working on insect taxonomy and pest management research.

The Arthropod Collection is normally housed in Cordley Hall on the OSU Campus but is currently at a temporary location at OSU's Coast Range Building during the multi-year Cordley Hall Remodel project. The museum returns to Cordley Hall next year and expects to reopen to the public in early 2023. ➤➤



F&L LUMBER, INC

WHOLESALE LUMBER BROKERAGE



Specializing in Nursery Lumber Needs!

- **Tilt Sticks**
1X1-8' or cut to your length
2X2-8' or cut to your length
1X2-8' or cut to your length
- **Tree Stakes**

- **Container/B&B Pallets**
- **Gates/Gate Boards**
1X4-8' or cut to your length
- **Shipping Racks & Gates**

Call Michelle at **503.803.1175** or fax: **503.212.0160**
FLLUMBER@AOL.COM • **WWW.FLLUMBER.COM**

Where Great Customer Service is a Given!

We accept Visa and MasterCard



BIRINGER NURSERY

WHOLESALE GROWERS OF
 Fruit, Flowering & Shade Trees
 Deciduous Shrubs
 Espalier Apple & Pear
 Combination Fruit Trees
 Dwarf Fruit Cherries on Gisela™
 Frost Peach®

Mt. Vernon, WA
 (360) 848-5151 Fax (360) 848-5959
 biringernursery@msn.com
www.biringernursery.com

Know thy enemy

Figure 2: Millions of preserved insect specimens collected over the last 150 years are carefully labeled, sorted and stored in specialized insect drawers in the Oregon State Arthropod Collection. The specimens support both regional and global entomological research. PHOTO BY CHRIS HEDSTROM

Oregon Department of Agriculture's IPPM Lab

www.oregon.gov/oda/programs/IPPM/InsectsSpiders/Pages/IdentifyInsect.aspx

The Oregon Department of Agriculture (ODA) Insect Pest Prevention and Management (IPPM) program works to protect Oregon's agriculture, horticulture, environment, and quality of life from damaging insect pests and enhance or maintain the value of our agricultural and horticultural products.

The program is internationally recognized for expertise in the identification of wood boring insects and has acted as a western Regional Identification Center for woodborers since 2008 to provide identification services to agencies across the nation. In 2020, IPPM transitioned to a National Identification Center for Invertebrates, providing identification services for most types of invertebrates targeted by invasive species surveys.

IPPM works closely with ODA's Nursery and Christmas Tree program to track critical and invasive pests that affect shipments of agricultural products domestically and internationally. Therefore, the most efficient method for nurseries to get identifications is to work with your nursery inspector (for nurseries that ship or receive material in or out of Oregon).

The IPPM lab provides identification for anyone in the state. Inquiries can be submitted through ODA's Identify-an-Insect portal on their website (see link above). Turnaround times vary but users can expect at least a follow-up in about 24 hours. Physical specimens can be mailed or dropped off by appointment. There is currently no fee for submissions.

Other resources:

Pacific Northwest handbooks:
PNWHandbooks.org

The Pacific Northwest (PNW) Handbooks are an incredible source of information about insect, weed, and disease management throughout the region. These guides are reviewed with input from



researchers and OSU Extension personnel and published annually. Although they are not designed specifically for pest identification, they can help you to narrow down potential pest species and offer management strategies for key pests in many agricultural industries, including nursery.

OSU Extension offices and publications:
<https://extension.oregonstate.edu/find-us>;
<https://catalog.extension.oregonstate.edu/>

Local OSU Extension agents are always available to help with insect ID questions (as well as any other plant health inquiries). OSU Extension is, in part, a huge network of plant health experts, many of which are trained entomologists or have years of experience fielding inquiries about plant pests and diseases. OSU Extension has also updated some recent ID guides, including the *Pocket Guide to Common Natural Enemies of Nursery Crops and Garden Pests in the Pacific Northwest* (Publication EC 1613, <https://beav.es/Uoq>).

Pacific Northwest Insects, Merrill Petersen, published by Seattle Audubon

This book, published in 2018, is a wonderfully comprehensive guide to regional insects, with images of some common and

not-so-common invertebrates seen in our region. While not specifically designed to be a pest management tool, it's an accessible resource and reference tool to aid in identification, with tons of photos and information about insect families, characteristics and habitat.

Planning to submitting a photo for ID?

Follow these tips to help get the best image and make it easy on the identifiers:

Focus: Sharp photos are needed showing the details needed for an accurate ID.

If you are having trouble focusing, try to get more light in the image or use the flash.

Get close: Try to get as close as you can while still being in focus. Images where the insect is tiny in the frame might not have enough detail for a good ID.

Slow it down: For live insects, chilling the bug in a fridge or freezer for a little while will slow it down, allowing you to get a better photo. Leaving it in a freezer will kill it slowly, leaving it in good condition (put a paper towel in the container with the insect to keep things dry). Avoid crushing the insect to kill them, as it can damage them and make identification difficult.

Multiple photos: The top and bottom of the insect may be helpful. Submit photos from a few angles if possible.

Both the Insect ID Clinic and ODA have detailed instructions on their websites about how to prepare and send physical specimens. Be sure to read them carefully to learn about the best ways to preserve specimens for shipping. 📷

Chris Hedstrom is the IPM outreach and communications coordinator for the Oregon IPM Center at Oregon State University. He can be contacted at chris.hedstrom@oregonstate.edu.