

Sample Submission

Enhanced First Detector Training



Enhanced First Detector Training for New York State

Long-term workshop evaluation

We would like you to submit 4–6 samples to one of Cornell’s diagnostic laboratories to help us evaluate this workshop series.

Supplies needed:

- Double lock plastic bags
- Vials
- Tissues or paper towels
- Alcohol or another preservative for larval samples
- Sample submission form
- Voucher for “free” processing
- Box for mailing



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For the Enhanced First Detector Workshops, we would like participants to submit 4 to 6 samples as a follow-up “evaluation” of this program. Participants were provided with a scouting pack and hand lens. Additionally the pack included a plastic bag, vials, and at least 4 sample submission forms so that they have the equipment to get started. If participants do not have access to alcohol, rubbing alcohol or non-toxic antifreeze (30% antifreeze – 70% water) will also work as a temporary preservative.

We ask that they focus on the invasive species covered; however, if they do not find any of the invasive species discussed in the workshop, we ask that they submit a sample of any organism that they have a question regarding its identity. That way, they at least go through the sample collection and preparation part.

How do you survey for pests?

Use a systematic approach

- Search every plant the same way.

Document your methods

- e.g. I searched every other plant, every fifth plant, 10 plants on the outer row, etc.

Quantify the effort

- e.g. Number of plants searched/number of total plants, plants on the innermost row, etc.



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We ask that when participants look for the invasive species covered in the workshops, that they do so in a systematic way (looking from the base of the plant and going up to the top or looking at the leaves, followed by the stem, etc.) and document the survey method on the sample submission form. We also ask them to report the number of plants that they surveyed and report that on the form as well.

Sample submission voucher

- Visit www.NYfirstdetector.org
- Click the “sample submission voucher” link
- Complete the web form (basic submitter info, pest you are submitting and workshop attended.)
- Click create voucher button
- Your sample submission voucher will be emailed to you
- Send this voucher along with your completed sample submission form and sample to the appropriate lab.
- NOTE: you must use the email you registered with to access the voucher.



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Visit www.nyfirstdetector.org to obtain a “free sample submission voucher to have your sample processed for no charge.

Packaging Plant Disease Samples

Notes from the CU Plant Disease Diagnostic Clinic



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There are different methods for submitting a sample for identification. The following slides will cover basic tips to send in a quality plant pathogen sample.

General packaging tips for plant samples

- Do not send dead plants.
- Submit samples showing moderate to severe symptoms.
- Submit an entire plant if possible.
 - (Loosely wrap soil/roots in a plastic bag and secure with a twist tie.)
- Never add water to your sample.
- Double bag samples coming from outside of New York State.
- More tips can be found at:
plantclinic.cornell.edu/collectandsubmit.html



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Some invasive pests that are discussed in these workshops include plant diseases. In order to submit a plant disease sample, there are a few steps to follow.

General shipping tips for plant samples

- Mail as quickly as possible.
- Collect and ship so that the lab receives it no later than Friday morning during a regular week.
- Avoid mailing samples on Friday.
- Keep sample cool or refrigerated and out of direct sunlight until it can be shipped.
- If a suspect sample, call the lab to let them know your sample is coming.



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Mail living plant tissue as quickly as possible and send early in the week to avoid weekend delays. Keep sample cool and out of sunlight until you can ship it.

How to package a submission

Plant disease sample

- Collect 6 to 8 inches of plant material with symptoms, wrap it in DRY paper towels or newspaper and bag it.
 - Best if you can get the whole plant, but that may not be feasible.
- Collect 6 to 8 inches of plant material without symptoms, wrap it in DRY paper towels or newspaper, and bag it separately.
- Put both of these samples in yet another bag.
- Place completed forms in outermost shipping container.
- Box your sample and mail it to the Disease Diagnostic lab.



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If you can submit the whole plant, wrap the roots in a separate bag and tape it or seal it off, then wrap the rest of the plant in DRY paper towels or newspaper to absorb excess moisture. Finally, place the entire plant in another plastic bag. If you cannot take the whole plant, diagnosticians will need at least 6 to 8 inches of the plant, wrapped completely in paper towels or newspaper.

Also, if you cannot collect the whole plant, you need to collect a healthy part of the plant as well as the diseased part of the plant. Wrap them separately in paper towels or newspapers and put them in separate bags. Then place both of them in another bag. Place the sample and the sample submission forms in the outermost shipping container and mail to the diagnostic clinic.

Leaf symptoms

Cankers, leaf spots and rots:

- Send specimens representing early and moderate stages of disease.
- For cankers include healthy portions from above and below diseased area.
- Press leaves flat between heavy paper or cardboard.
- Wrap fleshy parts in dry paper.



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Leaves/Fleshy Parts: when localized infections such as cankers, leaf spots and rots are involved, send specimens representing early and moderate stages of disease. For cankers include healthy portions from above and below diseased area. Press leaves flat between heavy paper or cardboard. Wrap fleshy parts in dry paper.

Reference: http://www.ppd1.purdue.edu/ppdl/physical.html#plant_disease

Wilting symptoms

Oak wilt suspect samples: collect 2–4 branches 1/2–2 inches in diameter and 4–12 inches long from actively wilting but not totally dead areas.

Thousand cankers disease suspect samples: cut 2–4 different branches 2–4 inches in diameter and 6–12 inches long.

- Put both of these samples in yet another bag.
- Place completed forms in outermost shipping container.
- Box your sample and mail it to the Disease Diagnostic lab.



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For samples with wilt symptoms, collect branches 1/2–2 inches in diameter and 4–12 inches long from actively wilting but not totally dead areas.

Similarly, for suspect thousand cankers disease samples, select branches that are still alive but have evidence of either beetle galleries/exit holes, suspect cankers under the bark or recent branch wilting that may be associated with TCD - related injuries. Cut branches should be at least 2 inches in diameter.



There are different methods for submitting insect samples for identification. The following slides will cover basic tips to send in a quality insect/arthropod sample.

General insect packing tips

- Collect and send 1 or more whole individuals.
- If insects are alive, please put in a container and place in the freezer overnight to kill them before shipping.
- Call the lab to let them know if you are sending a suspect specimen.

- More information can be found at:
<http://idl.entomology.cornell.edu/sample-directions/>



General insect shipping tips

- Place specimen(s) in a small crush proof container.
- Do not send specimen(s) in a flat envelope.
- Collect and ship so that the lab receives it no later than Friday morning during a regular week.
- Avoid mailing samples on Friday.
- Restrictions on sending certain liquids/preservatives through the mail.



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Like plant disease samples, there are some general guidelines for shipping insect samples that should help ensure your sample arrives in good condition.

Even if your sample is small, do not send insects in a flat envelop. Flat envelopes could go through a machine at the post office and will surely destroy your sasample.

Restrictions apply for sending certain liquids. 100% ethanol is considered a flammable and combustible liquid.

The U.S. postal service allows you to ship samples in ground shipments only. For those concerned with legalities of shipping specimens in alcohol, propylene glycol or vinegar can be used for short-term shipping. Place the vial or container in a sealable bag with absorbent material such as a paper towel should the container break or open during shipment. Include a note which indicates what the liquid is.

How to package a submission

Hard bodied insects (beetles, stink bugs, moths, etc.)

- Capture multiple, whole specimens if possible.
- Kill insects by placing them in the freezer for 24 hours.
- Loosely wrap insects in tissue and place in a small crush proof container.
- Put this container in a sealable bag.
- Box your sample.
- Place your voucher and completed sample submission form in the outermost shipping container.
- Mail it to the Cornell Insect Diagnostic lab.



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Hard bodied insects such as beetles, wasps, flies, moths, and butterflies, etc. are easily removed from the plant for sample submission. In addition, there are many keys for both mature and immature stages of these insects so it is not necessary to submit them live.

HARD-BODIED INSECTS should be killed by placing them in the freezer for 24 hours. Remove after 24 hours and place the insect in loose layers of tissue paper. Place tissue in a small crush-proof container.

How to package a submission

Soft bodied SMALL insects (aphids, small caterpillars, grubs, etc.)

- Place insect directly into a vial of preservative and seal tightly.
- Wrap in paper towels in case the container leaks or breaks.
- Put the container/box with paper towels in a double lock bag and seal it.
- Put this bag plus the sample submission and voucher in a crush proof box.
- Box your sample and mail it QUICKLY to the Cornell Insect Diagnostic lab.



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SOFT BODIED INSECTS AND OTHERS (Aphids, spiders, mites, grubs, and caterpillars) will break down quickly so plan to ship them quickly. Place soft bodied insects in a vial and fill with a preservative like rubbing alcohol or vinegar.

If the specimen is already in liquid, please drain off as much as possible (keeping it submerged). Place in a tightly-capped container, wrap the container in enough paper towels or other material to absorb all the liquid in case of breakage, then put that inside a sealed plastic bag. Please include a note saying what the liquid was.

Restrictions on mailing alcohol do exist. 100% ethanol is considered a flammable and combustible liquid. The U.S. postal service allows you to ship samples in ground shipments only. For those concerned with legalities of shipping specimens in alcohol, propylene glycol or vinegar can be used for short-term shipping. Place the vial or container in a sealable bag with absorbent material such as a paper towel should the container break or open during shipment.

How to package a submission

Soft bodied large insects (caterpillars, grubs, etc.)

- Capture multiple specimens if possible and put them in boiling water for thirty seconds.
 - Be sure to get the water boiling first, then add the sample.
- Remove the specimens from the boiling water and place in tissue, place in a box.
- Put the container/box in a double lock bag and seal it.
- Put this bag plus the sample submission and voucher in a crush proof box.
- Box your sample and mail it to the Cornell Insect Diagnostic lab.



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Large soft bodied insects include some caterpillars or grubs. In order for these to be identified properly, we ask that they be “fixed” with boiling water first. Because soft bodied insects are usually quite chunky, this “fixing” process prevents the inside of the body from rotting. There are several internal structures that are key to identifying these species. Additionally, it helps to preserve color.

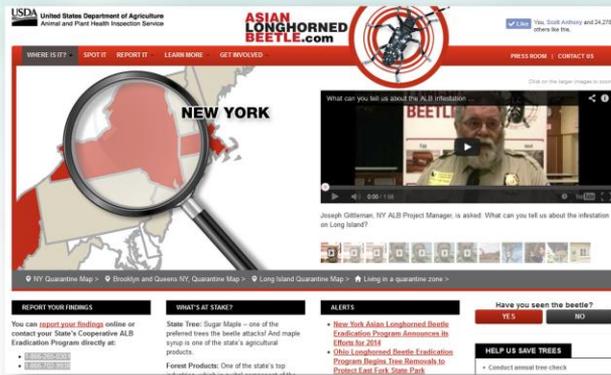
Please emphasize that you do not want the insect in the water when the water is being brought to a boil. Boil the water first, then put the soft bodied insect in the water for about 30 seconds then take out and wrap in tissue and place in a container.

Sample submission exception

If you see signs of the Asian longhorned beetle please take a picture and call 1-866-265-0301

Or report it online at

<http://asianlonghornedbeetle.com/where-is-it/new-york/>



How to package a submission

Insects that are difficult to remove from the plant (mites, scales, thrips, etc.)

- Capture multiple life stages on 6 to 8 inches of a plant; wrap the plant material in DRY paper towels or newspaper and **double bag it**.
- Plant identification can help with pest identification
- Capture multiple life stages on a smaller piece of plant and put them in a vial along with a preservative.
- Put the vial in a bag with paper towels and seal it.



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In this slide, we cover how to submit a sample of an insect (or arthropod) that is difficult to remove from the plant. These types of insects (or arthropods) include mites, thrips, whiteflies and scales. We ask for 6 to 8 inches of plant material because host plant identification can help with the insect (or arthropod) identification. It also allows us to document hosts in case the host range is incomplete (which often happens with new invasive species). Wrap the plant sample completely in dry paper towels or newspaper to absorb excess moisture in the plastic bag.

We ask for live samples and well as preserved samples for these groups. The reason we ask for live samples is that depending on the type of insect (or arthropod), identification keys are only known from one life stage (i.e. pupae or adult or larvae). We may need to allow the organism to complete one life stage and move on to the next for identification purposes.

Please emphasize the importance of double bagging all live samples!

What there are no pests?

It is okay if you do not find a pest!

- We need to know that you looked.
- Quantify your effort, and tell us the methods you used, too.
- Enter this information directly onto the web form for the voucher. Your sample will be recorded as negative data.



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We need to know about monitoring efforts when it comes to invasive species. If you look for one of these invasive species, but do not find it, that is valuable information. Should there be a positive detection, this information will help state and federal agencies to determine the best management or eradication strategy possible.

Where to send samples

Plant disease samples can then be submitted to:

Attn: Plant Disease Diagnostic Clinic
Cornell University
334 Plant Science Building
Ithaca, NY 14850

More information on the lab can be found at:

plantclinic.cornell.edu

Please use the sample submission form found at

www.NYfirstdetector.org



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Where to send samples

Insect samples can then be submitted to:

Insect Diagnostic Laboratory
Cornell University
Dept. of Entomology
2144 Comstock Hall
Ithaca, NY 14853-2601

More information on the lab can be found at:

<http://idl.entomology.cornell.edu/>

Download insect sample submission forms at

www.NYfirstdetector.org



Enhanced First Detector Training for New York State

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Collaborating Agencies

- U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS)
- Cooperative Agricultural Pest Survey Program (CAPS)
- Florida Department of Agriculture and Consumer Services (FDACS)
- National Plant Diagnostic Network (NPDN)
- Sentinel Plant Network (SPN)
- Protect U.S.
- University of Florida Institute of Food and Agricultural Sciences (UF-IFAS)



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